Sixth International Student Conference:

"Empirical Studies in Social Sciences"

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IZMIR UNIVERSITY OF ECONOMICS

SIXTH INTERNATIONAL STUDENT CONFERENCE

"EMPIRICAL STUDIES IN SOCIAL SCIENCES"

Izmir, TURKEY

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Preamble

Izmir University of Economics organized its Sixth International Student Conference during the dates of April 14-15, 2010. This year's focus was "Empirical Models in Social Sciences".

Empirical research is a well-established type of scholarly analysis which gathers its data by means of experiments and observation. The researcher uses this method to answer a question or to test a hypothesis. The results are based upon actual evidence and thus they set a basis for follow-up studies. Needless to say, an accurate analysis of data using scientifically proven methods is crucial to the validity of empirical research.

Empirical models of research can undoubtedly be applied in all social sciences. By choosing such a widely applied scientific approach in social sciences as the subject of the Izmir University of Economics Sixth International Student Conference, we had the intention to bring students of Economics, Business Administration, and International Relations from all over the world to share their empirical findings in their respective fields of research in stimulating panels and discussions. I am very glad to say that this scholarly gathering has exceeded our expectations. Students, both internationally and domestically, showed great interest in the conference, discussed the different models of empirical research and their applications in their respective fields, hosting these valuable scholars of the future was a great pleasure for our university.

I firmly believe that these conference series are steadily becoming one of the top research meetings in the region and Izmir University of Economics will continue to host and to support such occasions by all means as it has done in the previous years.

Prof. Dr. Attila Sezgin
Rector

Introductory Notes

This year, the Faculty of Economics and Administrative Sciences of Izmir University of Economics was once again proud to organize the sixth of a series of international student conferences on April 14-15, 2010. I am glad to mention that these international conferences have already become a tradition in our Faculty.

Izmir University of Economics, founded in 2001, established the Faculty of Economics and Administrative Sciences as one of its pioneering faculties in an effort to house a rich variety of social sciences departments and their research and teaching activities. Our research activities have included international conferences and workshops encompassing different subjects and fields of research from NATO security conferences to student congresses.

The subject of this year's international student conference was "Empirical Models in Social Sciences". The application of empirical knowledge on social sciences through different models enriched the content of the conference, and, panelists from different parts of the world and from different domains of research contributed immensely to the multidisciplinary character of the conference.

This scientific meeting was therefore not only an academic activity but also an occasion to host foreign graduate students at the international environment of our university and to encourage for scholarly interaction with our undergraduate and graduate students.

I believe that this Proceedings Book will be a precious contribution to the growing literature on the empirical models in social sciences and to the young authors' scholarly endeavors. I am also proud to mention that my Faculty's as well as my personal support for such scholarly meetings encouraging young researchers will also continue in the future.

Prof. Dr. Alev Katrinli
Dean

Editor-in-Chief's Notes

On 14-15 April 2010, Izmir University of Economics (IEU) hosted the Sixth International Student Conference in Social Sciences. Students from all over the world have diligently presented their individual or group researches. The conference was not only a basis for scientific communication but also a solid ground for long-enduring friendship and multicultural environment.

The main theme of the conference was globalization: opportunities and threats for developing countries. The Conference started with opening speech of Prof. Dr. Attila Sezgin, the Rector of Izmir University of Economics. In addition to welcoming everyone to the Conference, Prof. Sezgin praised the willingness and dedication of students who conducted research and emphasized the importance of these events at the University.

The Conference had 16 sessions, one plenary session and 5 parallel sessions in the morning, 5 parallel sessions in the first group of afternoon sessions, and 5 parallel sessions in the second group of afternoon sessions. In the opening session, René Tapsoba from Centre d'Etudes et Recherches sur le Development International, France, made his speech on "Does Inflation Targeting Improve Fiscal Discipline?" Next, Veysel Avsar, Florida International University, U.S.A., talked about "Industrial Evidence on Partisan Trade Policy: Tariff vs. Antidumping". Aparajita Singh, Washington and Lee University, U.S.A., made an interesting speech on "The Returns to Education and Occupational Choice in India". Finally, Istemi Berk from Izmir University of Economics, Turkey, spoke on "Impacts of Financial Regulations on Crude Oil Futures Market; Evidence from USA WTI Crude Market". Assoc. Prof. Dr. Hakan Yetkiner served as the moderator in the session.

The first of the parallel sessions in the morning was on "State-Building and Democratization after the USSR", and chaired by Inst. Itır Bağdadi. Berivan Akın, from Gediz University, Turkey, presented her paper "The Case Study of the Triple Transition in Russian Federation". Ekin Sıla Eke, from Izmir University of Economics, Turkey, talked about "State-Building and Democratization in Estonia". Betül Alaş, from Izmir University

of Economics, Turkey, made her speech about "State-Building And Democratization In Ukraine". Deniz Yalman, from Izmir University of Economics, Turkey, presented her study on "A General Overview of Georgia and its Democratization Process", and finally Bahar Özakıncı, Izmir University of Economics, Turkey, made a speech on "Historical and Political Analysis of Moldova".

The second of the parallel sessions in the morning was on "International Trade", chaired by Prof. Dr. Cengiz Erol. Sohaib Shahid, Graduate Institute of International and Development Studies, Switzerland, talked on "Can Trade Bring Peace? An Empirical Analysis of Pakistan and India". Next, Pınar Işıldar, Dokuz Eylül University, Turkey, made her speech on "The Effect of External Trade on Environment: An Econometric Application for Turkey". Mohamad Ahmad, Thomas Kuhn, and Omar Feraboli, Chemnitz University of Technology, Germany, talked about "The Impact of Compliance with Environmental Standards on Market Access and Export Competitiveness: A Case Study of Syrian Olive Oil Industry". Finally, İpek Gürsel Tapkı, from Sabancı University, Turkey, made her speech on "Trade Rules for Uncleared Markets with a Variable Population".

The third of the parallel sessions in the morning was on Marketing Management, chaired by Asst. Prof. Dr. Melike Demirbağ Kaplan. Bircan Aşuk, from Izmir University of Economics, Turkey, talked about "Consumer Attitudes towards Foreign Retailers' Products". Melike Demirbağ Kaplan, Burak Piksin and Beste Bol, from Izmir University of Economics, Turkey, presented a paper on "Education Blogging". Then, Samaneh Soroornejad and Maryam Akhavan, from Islamic Azad University, Iran, made a speech on "Adoption of Customers of M-banking Services Iranian Perspective", and finally Sümeyye Kuşakçı, from International University of Sarajevo, Bosnia and Herzegovina, spoke on "Segmentation of Student Market: A Chaid-Based Analysis".

The fourth of the parallel sessions in the morning was on Logistics Management, chaired by Asst. Prof. Dr. Özgür Özpeynirci. Burcu Akyüz, Burak Bahadır Özkan, Mustafa Özkılıç, Cemal Onur Tekay, Oytun Torucu, and Özgür Özpeynirci, all from Izmir University of Economics, Turkey, talked about "Warehouse Management and Inventory Planning". Next, Ege Aypar, Özge Gülbahçe, Gülbahar Özhelvacı, Melih Sezgin, Orben

Yenenç, and Özgür Özpeynirci, again all from Izmir University of Economics, Turkey, presented a paper on "Analysis of Cargo Hub Operations by Simulation". Ebru Selin Selen and Burcu Adıvar, from Izmir University of Economics, Turkey, spoke on "Epidemiological Modeling and Logistics", and finally, Alperen Ayman, Didem Mert, Metehan F. Sorkun, and Burcu Adıvar, from Izmir University of Economics, Turkey, made a speech on "Performance Analysis and Improvement for Overland Transportation".

The fifth parallel session in the morning was entitled as "Economics and Finance-1", chaired by Assoc. Prof. Dr. Hasan F. Baklacı. Tarık Sezgin Ocaktan, from Paris School of Economics, France, made his speech on "Exploring the Impact of Perturbation Methods on Wealth Distribution Dynamics". Next, Marián Dinga, from Center for Economic Research and Graduate Education-Economic Institute, Czech Republic, presented his paper "Do Investment Incentives Attract More FDI? A Regression-Discontinuity Approach". Jaewon Kim, from Stockholm University, Sweden, talked about "The Effects of Trade on Unemployment: Evidence from 20 OECD countries", and finally Umut Akovalı and Erol Türker Tümer from Dokuz Eylül University, Turkey, spoke on "The Effect of Economic Freedom and Trade Openness on GDP per Capita".

The first group of the parallel sessions in the afternoon consisted of five sessions. The first session was again on "State-Building and Democratization after the USSR", and chaired by Asst. Prof. Dr. Ebru Ertugal. Heves Gizem Eyiboğlu, from Izmir University of Economics, Turkey, presented her paper "Democratization In Azerbaijan?". Pınar Doyuran, from Izmir University of Economics, Turkey, talked about "Economic, Political and Social Transitions of Kyrgyzstan". Serkan Medet Tıkır from Izmir University of Economics, Turkey, made his speech on "State-Building and Democratization in Uzbekistan". Ayşe Begüm Çelik from Izmir University of Economics, Turkey, spoke on "State-Building and Democratization in Turkmenistan", and finally Özge Çömek, Izmir University of Economics, Turkey, made a speech on "Democratization Process in Tajikistan".

The second session of the first group in the afternoon was under the title of "Other Issues-1" and chaired by Asst. Prof. Dr. Alper Duman. Sébastien DJIÉNOUASSI, from Centre

d'Etudes e Recherches sur le Developpment International, France, presented a paper on "Understanding Child Labour in Cameroon". Ebru Ağlamaz, from Izmir University of Economics, Turkey, talked about "Assigning Football Teams into Groups in Turkish 2nd and 3rd Leagues". Manuel Sánchez Valadez from Universidad Autonóma de Barcelona, Spain, presented his paper "Trade Credit and Market Competition: Some Facts for Firms in the Mexican Economy", and finally Şebnem Penbek and Ela Burcu Uçel, Izmir University of Economics, Turkey, made a speech on "Accountability of the Unelected Few in Multicultural Settings".

The third session of the first group in the afternoon was entitled as "Economics and Finance-2", and chaired by Assoc. Prof.Dr. Coşkun Küçüközmen. Abdulla Alikhanov, from Azerbaijan State Economic University, Azerbaijan, presented his paper "Financial Stability and financial crisis: Different factors and views affecting financial stability". Cem Tintin, from Lund University, Sweden, talked about "Testing the Balassa-Samuelson Hypothesis: Evidence from 10 OECD Countries". Ali Osman Kuşakçı and Sümeyye Kuşakçı, from International University of Sarajevo, Bosnia and Herzegovina, made a speech on "Pricing Financial Derivatives in Turdex Using Artificial Neural Networks Tools and a Comparison with Conventional Theory". Finally, Fethiye B. Türkmen, from Ahi Evran University, Turkey, spoke on "The Benefit Incidence Analysis: A Case Study from Turkey".

The fourth session of the first group in the afternoon was on "International Relations", and chaired by Asst. Prof. Dr. Çiğdem Kentmen. Loubna Lamrhari, French Institute of Anatolian Studies, Turkey, made her speech on "Perceptions of the Kemalist Turkey and its Armed Forces by the French Republic (1923-1938)". Next, Zeynep Kaymas, Izmir University of Economics, Turkey, spoke on "Multilingualism Problematic Within the European Union". Elem Eyrice from Dokuz Eylül University, Turkey, spoke on "An Evaluation of the Scientific Approach in International Relations Discipline". Aslı Seda Bilman and Mustafa Erhan Bilman, from Dokuz Eylül University, Turkey, presented a paper on "Evaluation of the EU in Terms of Maastricht Criterion and the Theory of Optimum Currency Areas: A Panel Evidence". Finally, Imren Borsuk, Koç University, Turkey, made her speech on "Political Gender Equality and Political Violence".

The fifth session of the first group in the afternoon was under the title of "Economics and Finance-3", and chaired by Asst. Prof. Dr. Değer Eryar. N. Barış Vardar, from Yıldız Technical University, Turkey, presented his paper "Turkey's Competitiveness in Human Capital Intensive Products: A Causality Analysis". Merve Balanlı, from Marmara University, Turkey, talked about "Sacrifice Ratio in Turkey: An Empirical Study of the Change in Inflation and Production Loss". Then, Benjamin Beranek, from Izmir University of Economics, Turkey, made his speec about "Iceland's Banking Meltdown: Analyzing the Portents of a Financial Storm", and finally Emre Can and Gökçe Çelik, Izmir University of Economics, Turkey, made a speech on "A Game Theoretic Approach of IMF-Turkey Agreement Talks".

The first session of the second group in the afternoon was on "Management and Business Issues", and chaired by Prof. Dr. Erhan Ada. Berna Tarı and Sibel Mutlu, TOBB University, Turkey, made a speech about "Risk Types versus Risk Reducing Strategies". Pamela Jiménez-Fontana, from University of Costa Rica, Costa Rica, talked about "Patient Satisfaction and Self-Assessed Health". Özge Can, Sabancı University, Turkey, presented her paper "Organizational Configuration and the Effect of Institutional Logics in Turkish Theatre Field". Then, Tsenddorj Dorjpurev, from Marmara University, Turkey, spoke on "China's Capitalism", and finally Julija Michailova, from Christian-Albrechts-Universität, Germany, made a speech on "Development of an Overconfidence Test for the Economic Experiment".

The second session of the second group in the afternoon was under the title of "Other Issues-2" and chaired by Asst. Prof. Dr. Öznur Yurt. Burcu Erdoğan, from German Institute for Economic Research, Germany, presented her paper "Testing for Convergence in Stock Markets: A Non-linear Factor Approach". Okşan Gürtuna, from Ankara University, Turkey, talked about "An Empirical Case Study: Being a Woman in a Closed Prison". Murad Ali and Kichan Park, Inha University, South Korea, preseted a paper on "The Spiral Model of Indigenous Technological Innovation Capabilities for Developing Countries", and finally Alparslan Zengin, from Izmir University of Economics, Turkey, made a speech on "Turkey's Democracy: A Vicious Circle of Political Othering".

The third session of the second group in the afternoon was entitled as "Economics and Finance-4", and chaired by Asst. Prof. Dr. Müge Karacal. Hakan Güneş, Fatma Güler, Merve A. Özkalay, and Bolor Laaganjav, all from Dokuz Eylül University,Turkey, presented their paper "Effects of Oil Price, Interest Rate and Dollar Price of Euro on Gold Price". Irina Mikhalchenko, from University of International Business, Kazakhstan, talked about "Special Economic Zones: Essences and Possibilities". Sibel Ulusoy Tokgoz, Middle East Technical University, Turkey, made her speech on "A Time Series Analysis of ISE Sector Indexes and Macro Variables in Turkey". Finally, Efehan Danışman, from Marmara University, Turkey, spoke on "Increasing Importance of Civil Society and its Today in Context to Relationship with International Economic Institutions".

The fourth session of the second group in the afternoon was under the title of "Economics and Finance-5", and chaired by Instr. Gül Ertan. Fatih Şahan and Yunus Bektaşoğlu, Marmara University, Turkey, made a speech on "A Panel Co-integration Analysis of Budget Deficit and Inflation for EU Countries and Turkey". Next, Murat Alp Çelik, from Sabancı University, Turkey, spoke on "Regional Determinants of Income Inequality in Turkey". Emrah Karaoğuz, Izmir University of Economics, Turkey, spoke on "The Transformation of the Turkish Economy in the 1980s in the Light of the Recent Global Crisis". Finally, Merve Oğuz, Izmir University of Economics, Turkey, made her speech on "The Effect of Unemployment and Inflation on Government Popularity in Canada".

The fifth session of the second group in the afternoon was entitled as "Other Issues-3", and chaired by Asst. Prof. Dr. Efe Postalcı. Nora Reich, from Hamburg Institute of International Economics, Germany, presented her paper "Who Cares? Determinants of the Fathers' Use of Parental Leave in Germany". Then, Stéphanie Cassilde, CERDI / University of Auvergne, France, spoke on "Describing Skin Color in Contemporary Brazil: A Chromatic Mobility Model". Natalia Soboleva, from State University Higher School of Economics, Russia, talked about "Investments in MBA as a Means of Human, Social and Symbolic Capital Accumulation". Finally, Hacer Aksu, İmren Alakuş, and Elif Zeybek, all from Izmir University of Economics, Turkey, made their speech on "Women's Yesterday, Today and Tomorrow".

We greatly thank Prof. Dr. Attila Sezgin, the Rector of Izmir University of Economics for his continuous support of scientific research. Our gratitutes goes also to Prof. Dr. Alev Katrinli, Dean of Economic and Administrative Sciencies for her confidence on us and endless support. We owe a great deal to the scientific committee and conference secretariat in organization of this conference. Our thanks also go to all administrative staff of the University for their assistance in organizing the conference.

Assoc. Prof. Dr. Hakan Yetkiner

Editor-in-Chief

On behalf of Organizing Committee

Impacts of Financial Regulations on Crude Oil Futures Market;

Evidence from USA WTI Crude Market

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Izmir University of Economics

Abstract

The main aim of this paper is to analyze the impact of news created by Commodity Futures Trading Commission (CFTC) in terms of regulating the commodities futures market, on WTI crude oil futures. Methodology that we have been implemented in the perspective of capturing the response of WTI market to the news of regulatory bodies is a progress of volatility modeling (EGARCH) and event study methodology (Cumulative Abnormal Returns, CAR). The basic outcome of this paper states that there exists strong evidence especially for post-crisis period that CFTC announcements have negative and positive effect on first and second post-announcement days respectively. Study also investigates evidence of effect of CFTC announcements on volatility of WTI crude oil futures prices.

1. Introduction

1.1. Crude Oil Market Fundamentals & Dynamics with Historical Perspective

Crude oil market has been dominated by various actors, i.e. major oil companies, OPEC and exchanges, since crude oil has become the most important and fundamental input for industrial activity. Transformation of the market has made price formation of crude oil become more and more complicated. In the beginning of 20th Century, major oil companies have determined the price of this essential commodity with observing production levels and intra-company F.O.B. trade costs. Therefore in those days crude oil price was relatively low volatile. After domination of OPEC and Arabian companies in the market in 1970's, crude oil has become a foreign policy instrument and price has started to

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be affected from geopolitical, social and macroeconomic issues. The worries of developed western countries towards the Arabian domination of the market emerged a new concept in 1980's; futures exchange. Apart from spot market, crude oil has started to be traded in exchanges by agents in the industry to hedge the risk of price volatility. It was important especially for energy based commodities yet according to Regnier (2007), crude oil and natural gas prices have been more volatile than prices of most of the commodities.

In a very short time futures exchanges has started to dominate the crude oil market. Since 1986, price has been determined in a manner which considers parameters such as physical supply and demand of crude oil, news about economics, politics, technology etc., trading volume in both spot and futures markets, decisions of large investor groups. At the beginning this type of determination which Fattouh (2007) recalls as "informal approach", exposed several advantages including the implementation of fair price in the market, investment opportunity for non-industrial and non-commercial investors, hedging of price fluctuation for industry agents. Whereas in 21st Century executives of crude oil market has started to discuss the existence of these advantages in today's imperfect market structure where there exists asymmetric information flow.

Figure 1 illustrates the dynamics and trend of crude oil prices and the impact of transformation of market on prices from 1940 to 2008. Kaufmann and Ullman (2009) have found out that increase in oil prices in mid-2008 was generated by cash-market fundamentals and speculation both. Moreover, Cuaresma et al. (2009), state that the oil prices have cyclical behavior with asymmetric characteristics for the period from 1983 to 2007 which is the period of domination of exchanges. Therefore, volatility seems to increase with the domination of exchanges in the market, stating that derivative instruments, which were supposed to have a primary duty of hedging the volatility risk for crude oil market agents, have failed their mission.
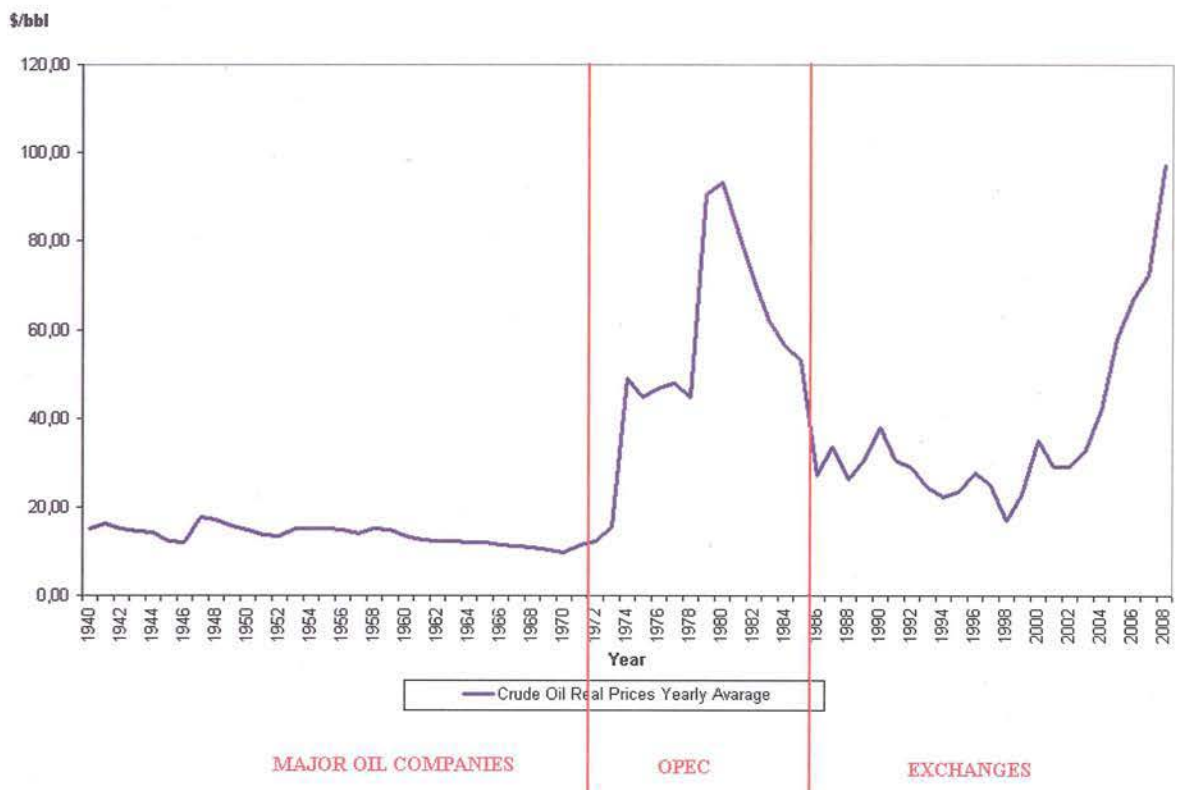
Figure 1: Real Prices of Crude Oil since 1940 and Market Domination
Source: BP Statistical Review of World Energy 2009

According to the common view and theory, main objective of futures exchanges is hedging. Failure of this objective would easily be explained by market depth of futures transactions. Figure 2 represents the volume of both physical (production as proxy parameter) and financial transactions (NYMEX WTI Crude Oil Contract as proxy) held in crude oil market from 1983 to 2007. As one can conclude, after 1990's trading volume of futures contracts is obviously increasing while spot transactions stays nearly at the same level which implies that till 1990 only industrial agents have used futures exchange to hedge their spot price volatility risk, whereas after 1990 speculators and investors started to trade a significant level of contracts for both arbitrage and speculation.
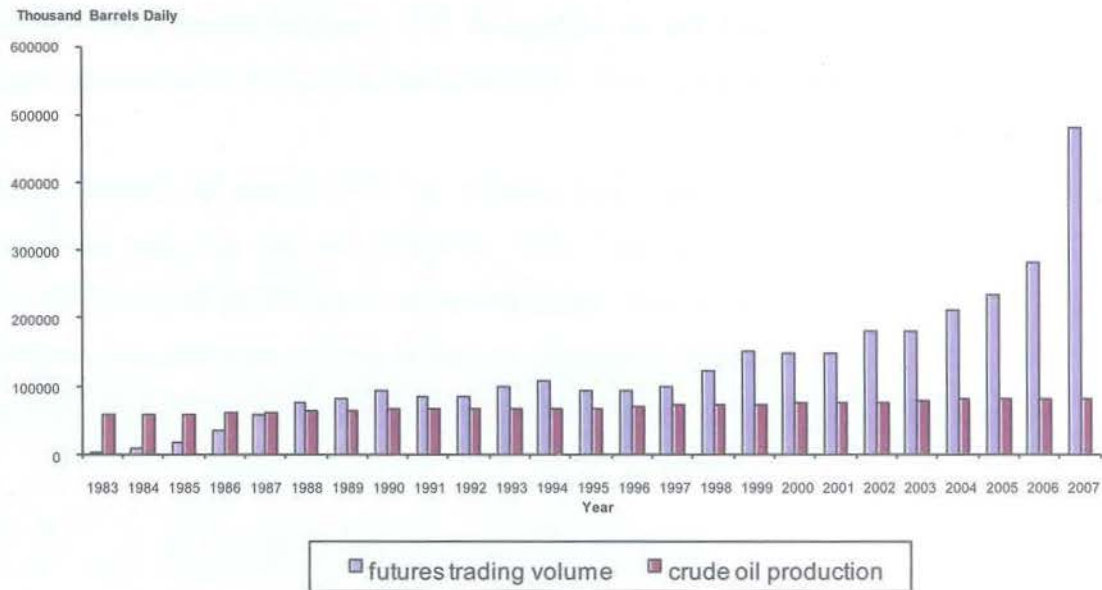
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igure 2: Volume of Transactions Held in Spot Crude Oil Market and Futures Exchanges

(Representative: Nymex WTI Crude Oil Nearest Month Contract)

Source: NYMEX & BP Statistical Review of World Energy 2008

1.2. CFTC Historical Overview and Regulation on Energy Markets

On this respect CFTC, which was founded in 1974, has started to work closely with the U.S. Department of Energy in order to detect the impact of excess speculation and manipulation on energy markets in January 1991. Afterwards, CFTC has the main regulatory body and authority of energy financial derivatives markets.

After the foundation, CFTC has tried to ensure the competitiveness and efficiency of commodities futures market and to avoid excess manipulation and speculation in markets. The main objective of CFTC, by regulating the markets, is to provide a fair price discovery over the commodities futures exchanges. According to the official website of the CFTC, organization of the comission consists of commisioners who are apoointed by the President, chairman and agency's operating units.

Regulatory operations of CFTC on energy futures market has started with 1991 as mentioned above and continued with April 1993 Act which has extended the rule of CFTC

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on energy markets regulating on purchase and sale of energy products. Especially global financial crisis, prior to which the record high of WTI crude oil futures prices in summer 2008, U.S. government has increased the regulation authority of CFTC on energy markets.

Figure 3 represents the daily price and volatility of WTI Crude Oil Futures traded in NYMEX from October 2007 to April 2009 including the pre and post crisis period. According to the figure while the price has a downward trend during the post crisis period, volaility seems to have increased. This paper will try to analyze the return and volaitility of WTI Crude oil futures for mentioned period with observing the regulations held by the CFTC in pre and post crisis period.
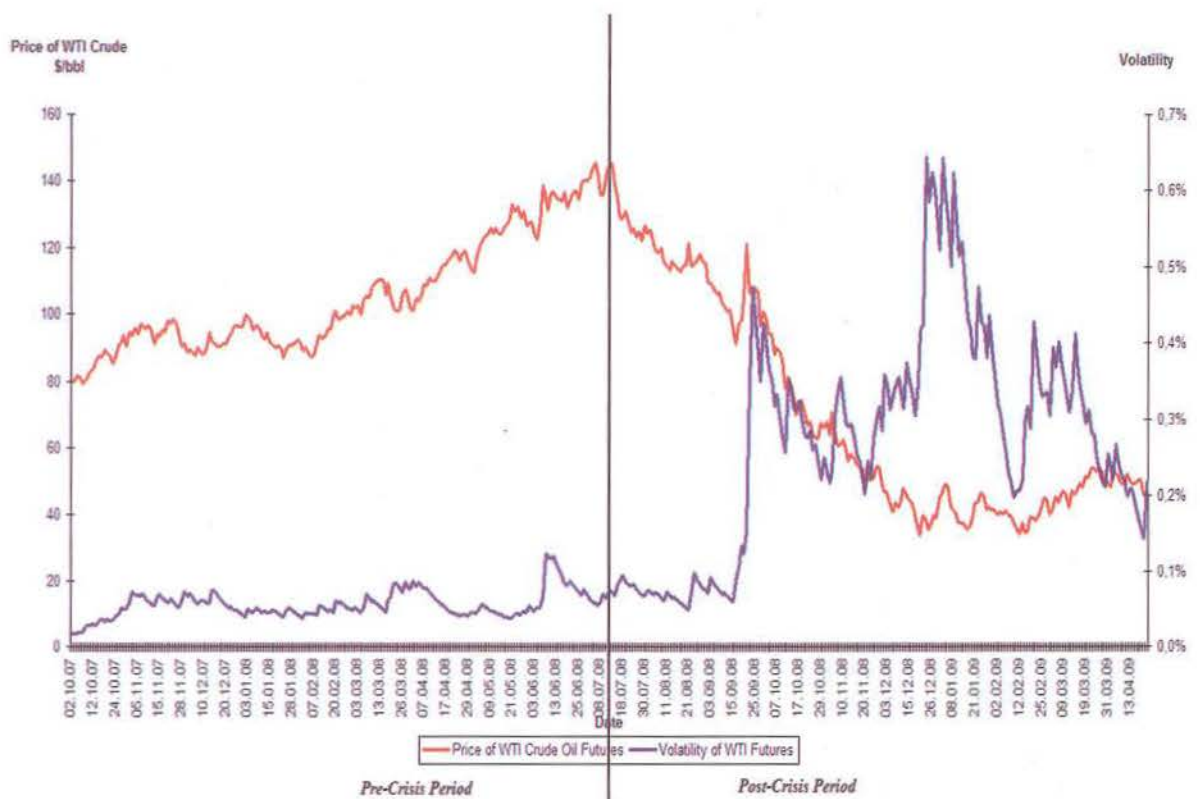
Figure 3: WTI Crude Oil Prices and Volatility for Pre and Post Crisis Period

Source: Energy Information Administration

2. Literature Review

There exists number of studies regarding structure and impacts of financial system on crude oil market. One of the most important aspect of these studies are subjected the impacts of futures trading on crude oil market. Engdahl (2008) has found evidence of impact of speculation on crude oil prices as well as physical market fundamentals. Moreover, Sanders *et al* (2004) have concluded the positive correlation between returns and position held by non-commercial traders within the context of CFTC Commitment of Traders (COT) report. Buyuksahin *et al.* (2008) have examined the linkage between oil futures prices and trading activity, concluding that trading activity has stronger effect on prices than market fundamentals. On the other hand, Dale and Zyren (1996) have studied to examine the impact of futures markets on energy prices and they found that non-commercials follow the price trends instead of setting it.

The basic question rising above mentioned statements is that, does crude oil futures trading need regulation? At this point of view, Tse (2008) analyzed competitiveness between NYMEX and ICE stating the permission given to ICE for WTI Crude Contract by CFTC in 2008. Jickling and Cunningham (2008) have analyzed the legislative responses in energy futures market with three main proposals; extending regulatory control (ENRON Loophole), ensuring no-foreign futures usage of speculators (London Loophole) and restraining the ability of institutional investors (Swaps Loophole). Moreover, Jickling (2008) states the risk rising above the regulatory gap over futures market with emphasizing two main aspects; price manipulation and disruptions in spot market. In this perspective, the importance of CFTC and Government regulation increases. According to Ervin and Hinkle (2008) "CFTC Reauthorization Act of 2008" enhances the regulatory authority of institution which was assumed by Stoll in 1999. His study has focused on the need for a new mindset on regulatory issues in U.S. financial markets. Also, Cinquegrana (2008) pointed out the importance of restoring the confidence among futures market.

As mentioned above, the main objective of this paper is to analyze the impact of CFTC regulations on crude oil futures market. The basic methodology, details will be given in

next section, to be followed includes the volatility analysis to capture the impact of CFTC announcements on crude oil futures variance and event study analysis to capture the abnormal returns associated with the CFTC announcements. Most of the studies done in order to capture a specific type of event on volatility of oil, objected OPEC meetings. Schmidbauer and Rösch (2009) have conducted Generalized Autoregressive Conditional Heteroskedasticity (GARCH) with modified dummy variable on daily WTI prices from January 1986 to May 2009. Basic outcome of the paper is that, volatility increases significantly prior to OPEC announcement. Horan *et al.* (2004) have found similar result, stating that volatility increases as OPEC meeting approaches than drops dramatically for post-announcement period.

The event study methodology has been widely used in recent years to analyze the dynamics of financial assets. Ma and Tang (2005) have analyzed the overreaction of 852 different stock prices in NYSE and NASDAQ. They have found strong evidence of overreaction effect in NASDAQ. Event-study crude oil literature exists among OPEC announcements and their impacts on crude oil market. Lin and Tamvakis (2009) have investigated the impacts of OPEC announcements on crude oil market within the event study context. They have examined three types of decisions taken by OPEC; quota cut, quota increase and quota unchanged and found significant feedback from quota cut on increase in price trend. On the other hand Wirl and Kujundzic (2004), covering 50 OPEC meetings from 1984 to 2001, have found weak effect of OPEC announcements on crude oil price returns.

3. Methodology and Data

3.1. Methodology

Since the main of aim of this paper is to analyze the impact of news created by CFTC on crude oil futures market in U.S.A. main methodology used in this paper is a two stage progress of volatility analysis, capturing the impacts of news on volatility, and event study methodology, capturing the impacts of news on returns of WTI crude oil prices.

The primary conditional volatility model; Autoregressive Conditional Heteroskedasticity, ARCH(p) developed by Engle (1982) is;

$$\sigma_t^2 = \varpi_0 + \sum_{i=1}^{p}(\alpha_i \times \varepsilon_{t-i}^2) \tag{1}$$

where, σ_t^2 is conditional variance and ε_{t-i}^2 is the information provided by lagged residuals. Equation (1) satisfies non-negativity constraint with $\varpi_0 > 0$ and $\alpha_i \geq 0$. Most obvious weakness of this model was absence of lagged variance terms. Bollerslev (1986) has extended ARCH model by involving the impact of lagged terms of conditional variance series by developing Generalized Autoregressive Conditional Heteroskedasticty, GARCH (q,p);

$$\sigma_t^2 = \varpi_0 + \sum_{i=1}^{p}(\beta_i \times \sigma_{t-i}^2) + \sum_{j=1}^{q}(\alpha_j \times \varepsilon_{t-j}^2) \tag{2}$$

where, σ_{t-i}^2 is the lagged series of conditional variance and $\varpi_0 > 0$. Moreover, GARCH model must satisfy non-negativity condition so $\beta_i \geq 0$ and $\alpha_j \geq 0$. $(\alpha_j + \beta_i)$ is the strength of persistence of shock to the conditional volatility; as the value of term gets close to 1 shock is more persistent.

Although GARCH model has been developed further on ARCH model, it still has the constraint of non-negativity. In addition to this constraint, shocks are acknowledged as symmetric, i.e. both negative and positive shocks have the same magnitude of impact on volatility. Nelson (1991) has developed Exponential GARCH, EGARCH (p,q) model to handle with these constraints.

$$\ln(\sigma_t^2) = \varpi_0 + \sum_{i=1}^{p}[\beta_i \times \ln(\sigma_{t-i}^2)] + \sum_{j=1}^{q}\left[\left(\alpha_j \times \frac{\varepsilon_{t-j}}{\sqrt{\sigma_{t-j}^2}}\right) + \left(\phi_j \times \left|\frac{\varepsilon_{t-j}}{\sqrt{\sigma_{t-j}^2}}\right|\right)\right] \tag{3}$$

where, $\frac{\varepsilon_{t-j}}{\sqrt{\sigma_{t-j}^2}}$ and $\left|\frac{\varepsilon_{t-j}}{\sqrt{\sigma_{t-j}^2}}\right|$ are the asymmetric term and the size effect respectively.

EGARCH model in equation (3) overcomes the constraints with logarithmic structure and asymmetric terms, if the term α_j is statistically significant and negative than asymmetry rises in the model. ϕ_j captures the size effect in the model. On the other hand, the only

restriction EGARCH model imposes is that, sum of coefficients of parameters must not exceed 1 in order to satisfy the stationary process.

This paper uses EGARCH (1,1) volatility model with dummy variables to capture volatility surrounding CFTC announcements. Mean and variance equations is as follows,

$$r_f = \alpha_0 + \varepsilon_t \tag{4}$$

where $r_f{}^1$ are the log return of WTI Crude Oil futures prices.

$$\ln(\sigma_t^2) = \varpi_0 + \alpha_1 \times \ln(\sigma_{t-1}^2) + \phi_1 \times \left| \frac{\varepsilon_{t-1}}{\sqrt{\sigma_{t-1}^2}} \right| + \beta_1 \times \frac{\varepsilon_{t-1}}{\sqrt{\sigma_{t-1}^2}} + \theta_1 D_{fut} \tag{5}$$

where, D_{fut} stands for dummy for regulation announcements on commodities futures.

Second analysis for this paper includes the basic methodology of event studies. As Brown and Warner (1980) has found abnormal return calculation using constant mean return model for a stock is as follows,

$$AR_t = R_t - E(R_t) \tag{6}$$

where expected return, $E(R_t)$ is constant mean return of stock during period of interest,

$$E(R_t) = \mu_t + \xi_t \tag{7}$$

where μ_t is the mean of returns and ξ_t is the disturbance term. After capturing the abnormal returns for each date cumulative abnormal returns and cumulative avarage abnormal returns for pre and post announcement daily periods are found as follows,

$$CAR_t = \sum_{t=-7}^{7} AR_t \tag{8}$$

$$CAAR_t = \frac{1}{N} \sum_{t=1}^{N} CAR_t \tag{9}$$

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[1] Constant mean equation is chosen due to the Ljung –Box Test provided in Data Section

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3.2. Data

WTI crude oil futures prices data is obtained from Energy Information Administration of U.S.A. and regulation announcements dates are obtained from official website of CFTC, "General Press Releases" section. Time period used in this paper is from October, 1st 2007 to April, 21st 2009 covering daily data for pre and post financial crisis period. In this paper the date of financial crisis has taken as the peak price of WTI crude oil. There exist 26 total announcements (14 pre and 12 post crisis periods).[2]

Table 1 summarizes the descriptive statistics; mean, median, maximum, minimum, standard deviation, skewness, kurtosis and Jarque-Bera statistics of variables used in models. According to summary statistics all three series are distributed negatively skewed and leptokurtic. GARCH type volatility models would fit the leptokurtic distribution.

Table 1: Summary Statistics of Return Series of WTI Crude Oil Futures Prices

Varible	r_{fob}
Mean	-0.001
Median	-0.002
Maximum	0.164
Minimum	-0.131
Std. Dev.	0.039
Skewness	0.261
Kurtosis	5.121
J-B Stat	77.72**
# of observations	391

** denotes significance at 1% confidence level

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[2] Detailed description of announcements are provided in Appendix section (Table A1)

Table 2: The Ljung-Box Test for Standardized Residuals of Mean Equations

ε_{rf}

Lag	AC	PACF	Q-stat
1	-0.077	-0.077	2.31
2	-0.103	-0.110	6.51
3	0.130	0.115	13.16
4	0.016	0.025	13.27
5	-0.151	-0.127	22.35
10	0.001	-0.021	23.01
20	0.027	0.077	34.87

According to Table 2, Ljung-Box test states autocorrelation in all three residuals so we use autoregressive of order one process in the mean equations of the models. The mean equation (4) that we have assumed is therefore appropriately defined. ARCH-LM test in Table 3 results that there left no serial dependence between squared residuals which imply that after our volatility models there exists no significant ARCH effect left in the series.

Table 3: ARCH-LM Test Results

	Constant Term	Squared Residuals	F-statistics	LM-statistics
ε_{rf}^2	0.932	0.079	2.418	2.416
	(0.000)	(0.121)	(0.121)	(0.120)

The numbers in paranthesis are p-values.

4. Empirical Results

Table 4: Variance Equation for Daily WTI Crude Oil Futures

	ϖ_0	α_1	ϕ_1	β_1	θ_1
Estimate	-0.292	0.981	0.190	-0.057	0.231
z-statistics	0.000[i]	0.000[i]	0.000[i]	0.140	0.183

[i] indicates the significance level at 1%

Table 4 explains the variance equation that we model to define the impact of regulatory announcements of CFTC on WTI crude oil futures volatility. As one may conclude, the coefficient of dummy variable, which controls the announcements of CFTC, is positive and but statistically insignificant. The main reason of this result can be interpreted as; the volatility has a tendency to increase prior to the announcements which is tested by the event study methodology on table A1 in the appendix section. One more result that would attract attention is that, β_1 is negative but statistically insignificant implying that for this period there exists no evidence for asymmetric structure in variance series.

According to the table A2, volatility has increased in pre-announcement period around 15 announcements. Especially, during two days period prior to announcement the variance has a tendency to increase for both whole and sample periods. Although there is no evidence for statistical significance of response of volatility on impulse of announcements when we separately consider the announcements, whose figures are provided in appendix, above stated result can be obtained.

Moreover, Table 5 demonstrates the main outcome of this paper. Cumulative average abnormal returns of WTI crude oil futures prices for whole period, from October 2007 to April 2009, for pre-crisis and for post-crisis periods. According to the Table 5 there exists strong evidence especially for post-crisis period that CFTC announcements have a negative and positive effect on first and second post-announcement day respectively. Graphs of all three series can be seen in Figure A1 in appendix section.

Table 5: CAAR around CFTC Announcements

Day of Event	Whole Period	Pre Crisis Period (14 Announcements)	Post Crisis Period (12 Announcements)
car -7	0,0010	-0,0059	0,0091
car -6	0,0052	0,0109*	-0,0015
car -5	0,0083	0,0029	0,0145
car -4	0,0000	-0,0024	0,0028
car -3	-0,0067	0,0011	-0,0159
car -2	0,0019	-0,0021	0,0065
car -1	-0,0003	-0,0041	0,0041
car 0	-0,0015	0,0021	-0,0057
car 1	-0,0116	0,0093	-0,0360**
car 2	0,0167***	0,0058	0,0294**
car 3	0,0033	0,0050	0,0014
car 4	-0,0068	0,0077	-0,0239*
car 5	0,0052	0,0107**	-0,0012
car 6	0,0066	0,0082	0,0048
car 7	0,0045	-0,0025	0,0127

*/**/*** denotes significance at 1%, 5%, 10% confidence levels respectively

5. Conclusion

This paper analyzes the impact of CFTC regulatory announcements on WTI crude oil futures market. The effect has analyzed in two aspects of market; volatility and returns of nearest month futures prices.

First main outcome of this paper concludes that volatility has increased in first 3 days of post-announcement period. For the sample period we have found no evidence of asymmetry in variance series and coefficient of dummy in variance equation controlling the announcement of CFTC is positive but insignificant. When we consider volatility

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around CFTC announcements using event study methodology we have found evidence that volatility has increased in post-announcement period. Therefore further analysis must be conducted to capture the impact of CFTC regulatory news on volatility.

The second result captured in this study is that CFTC announcements have significant impact on returns of WTI crude oil futures prices in, especially, post-crisis (post-price peak) period since one can easily assume that after crisis CFTC have been enabled to control the excess speculation and manipulation in crude oil market by US Senate. When the whole sample period is considered we found weak evidence of CFTC impact.

This study could be extended by above mentioned volatility model with structural break analysis and event study methodology with announcements of other regulatory authorities.

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Appendices

Appendix 1

Table A1: Descriptive Analysis of CFTC Announcements

Announcement Number	Date of the Announcement	Description of the Announcement
1	24.10.07	On enhancing the Commission's ability to deter and prevent market manipulation
2	14.11.07	On longstanding policy towards foreign brokers. providing greater legal certainty to commodity activities undertaken on U.S. markets
3	19.12.07	On study that examines the relationship between returns on benchmark commodity and equity investments
4	16.01.08	On the action to permit certain foreign firms to introduce institutional U.S. customers to registered Futures Commission Merchants (FCMs) in connection with trading on U.S. exchanges, without having to register as an introducing broker
5	13.02.08	On the establishment of an advisory committee that will provide a public forum to examine emerging issues related to the energy markets
6	04.03.08	On enabling market professionals, clearing brokers, to carry certain positions in futures or options on futures that are cleared by ICE Clear,
7	18.03.08	On funds used to margin, secure, or guarantee specified over-the- counter (OTC) contracts in Denatured Fuel Ethanol
8	01.04.08	On the existing order in connection with contracts traded on the Dubai Mercantile Exchange (DME)
9	02.05.08	On the members of its recently-formed Energy Markets Advisory Committee and on providing a public forum to examine emerging issues related to the energy markets and the CFTC's role in these markets under the Commodity Exchange Act.
10	29.05.08	On increasing transparency of the energy futures markets
11	05.06.08	On gathering of senior enforcement officials from around the world with responsibility for prosecuting manipulative conduct affecting prices of energy commodities
12	09.06.08	On the first meeting of its Energy Markets Advisory Committee on Tuesday, June 10, 2008, to receive input from a variety of sources on key energy market issue

Table A1 (cont'd): Descriptive Analysis of CFTC Announcements

Announcement Number	Date of the Announcement	Description of the Announcement
13	07.07.08	On the permission of Dubai Mercantile Exchange (DME) members to make its electronic trading and order matching system available in the US
14	22.07.08	On the report offering a preliminary assessment of fundamental and market factors affecting the crude oil market
15	01.08.08	On the first market surveillance conference for international regulators August 5-7, 2008 in Washington, DC.
16	29.08.08	On the public comment on an application by Natural Gas Exchange Inc. for registration as a derivatives clearing organization.
17	22.09.08	On the ongoing national crude oil investigation of the Commodity Futures Trading Commission (CFTC)
18	09.10.08	On the funds used to margin, secure, or guarantee specified Over-the-Counter (OTC) cleared-only contracts in Denatured Fuel Ethanol
19	04.12.08	On increase of economically-available deliverable supplies, delivery capacity and the number of shipping certificate issuers for the futures contract, and on reduce the contract's overall susceptibility to manipulation.
20	18.12.08	On the Order granting Natural Gas Exchange, Inc. (NGX) registration as a derivatives clearing organization (DCO) pursuant to the Commodity Exchange Act (CEA).
21	08.01.09	On the public comment on an application submitted by Cantor Fitzgerald, L.P., for the designation of a contract market
22	20.01.09	On the election of Commissioner Michael V. Dunn as president
23	04.02.09	On the a new monthly report including topics; energy agriculture etc.
24	24.02.09	On the regulations regarding periodic and annual reporting requirements applicable to commodity pool operators (CPOs)
25	05.03.09	On International Organization of Securities Commissions' (IOSCO) Technical Committee recommending improved supervision of the commodity futures markets and better global cooperation towards this end
26	10.03.09	On the appointment of CFTC Commissioner Bart Chilton to serve as Chairman of the CFTC's Energy Markets Advisory Committee (EMAC)

Appendix 2
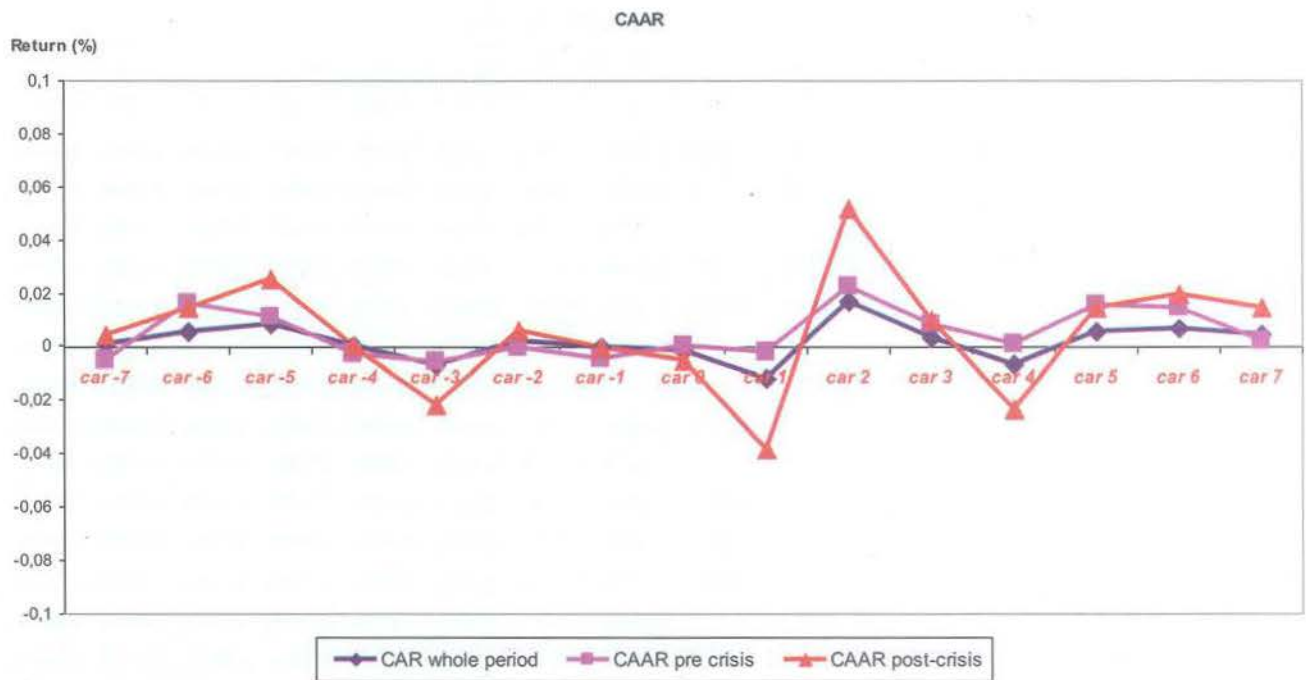
CAAR

Figure A1: CAAR around CFTC Announcements

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Appendix 3

Table A2: Variance around CFTC Announcements

Day of Event	Announcement													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
-7	0,029%	0,068%	0,061%	0,045%	0,046%	0,059%	0,065%	0,084%	0,042%	0,039%	0,042%	0,045%	0,071%	0,074%
-6	0,035%	0,067%	0,057%	0,051%	0,043%	0,055%	0,060%	0,084%	0,040%	0,037%	0,046%	0,054%	0,069%	0,072%
-5	0,035%	0,069%	0,058%	0,049%	0,044%	0,051%	0,061%	0,078%	0,042%	0,037%	0,045%	0,050%	0,076%	0,066%
-4	0,033%	0,064%	0,074%	0,046%	0,044%	0,049%	0,056%	0,072%	0,043%	0,043%	0,054%	0,047%	0,070%	0,083%
-3	0,036%	0,060%	0,074%	0,047%	0,041%	0,047%	0,053%	0,085%	0,040%	0,044%	0,050%	0,052%	0,064%	0,086%
-2	0,035%	0,056%	**0,069%**	0,045%	**0,054%**	**0,052%**	0,049%	0,079%	**0,045%**	**0,042%**	**0,047%**	0,051%	**0,059%**	**0,095%**
-1	0,034%	0,055%	**0,064%**	0,044%	**0,053%**	**0,049%**	0,045%	0,077%	**0,046%**	**0,046%**	**0,052%**	0,065%	**0,057%**	**0,087%**
0	0,040%	0,065%	**0,059%**	0,048%	**0,050%**	**0,045%**	0,061%	0,086%	**0,043%**	**0,045%**	**0,051%**	0,123%	**0,054%**	**0,082%**
+1	0,041%	0,069%	0,055%	0,046%	0,047%	0,051%	0,067%	0,079%	0,050%	0,054%	0,065%	0,122%	0,058%	0,081%
+2	0,052%	0,064%	0,051%	0,044%	0,048%	0,070%	0,084%	0,086%	0,055%	0,050%	0,123%	0,116%	0,069%	0,083%
+3	0,050%	0,062%	0,052%	0,041%	0,044%	0,065%	0,084%	0,079%	0,053%	0,047%	0,122%	0,119%	0,063%	0,076%
+4	0,049%	0,057%	0,049%	0,039%	0,061%	0,060%	0,078%	0,077%	0,051%	0,052%	0,116%	0,108%	0,074%	0,073%
+5	0,058%	0,064%	0,048%	0,048%	0,057%	0,061%	0,072%	0,077%	0,047%	0,051%	0,119%	0,101%	0,072%	0,068%
+6	0,072%	0,060%	0,045%	0,051%	0,059%	0,056%	0,085%	0,071%	0,046%	0,065%	0,108%	0,092%	0,066%	0,067%
+7	0,068%	0,056%	0,042%	0,049%	0,055%	0,053%	0,079%	0,069%	0,045%	0,123%	0,101%	0,084%	0,083%	0,074%

Table A2 (cont'd): Variance around CFTC Announcements

Day of Event	Announcement											
	15	16	17	18	19	20	21	22	23	24	25	26
-7	0,081%	0,051%	0,067%	0,425%	0,221%	0,356%	0,600%	0,624%	0,420%	0,317%	0,350%	0,336%
-6	0,083%	0,048%	0,064%	0,400%	0,274%	0,336%	0,573%	0,566%	0,381%	0,287%	0,329%	0,304%
-5	0,076%	0,070%	0,059%	0,365%	0,299%	0,313%	0,521%	0,513%	0,436%	0,427%	0,332%	0,395%
-4	0,073%	0,097%	0,087%	0,352%	0,316%	0,375%	0,643%	0,532%	0,393%	0,386%	0,336%	0,367%
-3	0,068%	0,089%	0,105%	0,317%	0,284%	0,351%	0,591%	0,478%	0,357%	0,350%	0,304%	0,402%
-2	**0,067%**	**0,082%**	0,134%	**0,332%**	**0,358%**	0,332%	0,556%	**0,432%**	**0,322%**	0,329%	0,395%	**0,378%**
-1	**0,074%**	**0,077%**	0,122%	**0,304%**	**0,347%**	0,304%	0,500%	**0,417%**	**0,306%**	0,332%	0,367%	**0,358%**
0	**0,073%**	**0,076%**	0,152%	**0,276%**	**0,312%**	0,348%	0,624%	**0,383%**	**0,278%**	0,336%	0,402%	**0,332%**
+1	0,068%	0,069%	0,346%	0,257%	0,331%	0,417%	0,566%	0,378%	0,252%	0,304%	0,378%	0,308%
+2	0,072%	0,091%	0,473%	0,352%	0,345%	0,422%	0,513%	0,474%	0,231%	0,395%	0,358%	0,339%
+3	0,070%	0,083%	0,426%	0,335%	0,356%	0,644%	0,532%	0,426%	0,215%	0,367%	0,332%	0,413%
+4	0,064%	0,078%	0,387%	0,312%	0,336%	0,585%	0,478%	0,420%	0,197%	0,402%	0,308%	0,375%
+5	0,060%	0,074%	0,350%	0,311%	0,313%	0,624%	0,432%	0,381%	0,207%	0,378%	0,339%	0,342%
+6	0,073%	0,068%	0,425%	0,324%	0,375%	0,600%	0,417%	0,436%	0,207%	0,358%	0,413%	0,321%
+7	0,068%	0,072%	0,400%	0,299%	0,351%	0,573%	0,383%	0,393%	0,220%	0,332%	0,375%	0,294%

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The Case Study of the Triple Transition in Russian Federation

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Abstract

This study aims to analyze the case study of Russian Federation based on Claus Offe's definition of triple transition in East Central Europe after the collapse of Soviet Union. In the framework of Offe's triple transition structure, this study will firstly examine nation building process in Russia. Then under the title of state-building, this paper will evaluate political reforms such as the establishment of the new constitution, regime making, the position of political parties and civil society during this period. As well as, this study will also look at the economic level of the state building.

1. Introduction

This study aims to analyze the case study of Russian Federation based on Claus Offe's definition of triple transition in East Central Europe after the collapse of Soviet Union. In the framework of Offe's triple transition structure, this study will firstly examine nation building process in Russia. Then under the title of state-building, this paper will evaluate political reforms such as the establishment of the new constitution, regime making, the position of political parties and civil society during this period. As well as, this study will also look at the economic level of the state building.

Offe (2004) distinguishes Post-Soviet transition from the democratic transitions that took place after the Second World War until 1990s. Offe (p. 504) specifies two main differences in his article. Firstly, during this period, different from other transitional countries, post-Soviet successor states were also experiencing territorial disputes, migrations, minority or nationality conflicts and secessionist movements. Secondly, in post-Soviet region, in

addition to regime change, countries have been experiencing economic reforms simultaneously with nation building process.

Although we called this period as a transition; there are many debates on this paradigm. The theory of transition was generally effective to explain the pathway of democratization after 1970s in various regions. However, peculiarities in Post-Soviet politics challenge their premises. While Valerie Bunce (2003), a significant transitologist, underlines this challenge, Thomas Carothers (2002) advances the claim and declares the end of transition paradigm. He emphasizes that the realities in post-Soviet region are not supporting the model, which was predicted in the theory. For this reason, this study will cover the period from 1990 until 2000. In first January 2000, Vladimir Putin became president and it is rather accurate to describe Putin's presidency as the consolidation of the regime which was prepared under Yeltsin leadership.

This study claims that the transition period in Russia provided the establishment of electoral democracy and market economy however there are still many debates on the quality of liberal values in Russia. Accordingly, many terms such as façade, quasi-, semi-democracy or competitive authoritarianism are used for the regime in Russia. Due to that this study defines the period of 1990-2000 as the transition from communism to a new system and evaluates the period of 2000-2010 as the consolidation of this regime. Generally, these terms are used in order to describe the path toward democracy. In the framework of this study, transition means the breakdown of the old regime and the establishment of relatively stable political system. Meanwhile, consolidation means achievement of the stability and the perpetuation of the established regime (Hatipoğlu, 1998). However, the examination of the regime type is beyond the aim of this study.

After the dissolution of Soviet Union, fifteen new states emerged in Eurasian landmass and only Russia was the legal inheritor of Soviet Union. Besides of the advantages of being the legatee of an empire, Russia transmitted historical problems that other fourteen states did not possess. Russian Soviet Federated Socialist Republic (RSFSR) had not held some of the opportunities that the other fourteen republics had during Soviet rule. Foremost,

RSFSR did never have a Russian communist party. In addition to that RSFSR had never enjoyed institutions such as Russian KGB, Russian MVD, and Russian Academy of Science, television channels or radio until the perestroika period (Dunlop, 1993-94, p. 603). Like the intersection of institutions, Russian identity was also merged with the Soviet identity. Due to the central role in Soviet Union, nation and state building in Russian Federation was more complicated than the other Union's republics. In order to understand the transition period of Russian Republic, it is necessary to evaluate the reform period in USSR after 1985. Russian Federation transition started during the Gorbachev leadership with the introduction of *perestroika* reforms.

2. Historical Background of Russian Transition (1985-1991)

The political and economic decline of the USSR was obvious when Gorbachev came to power in 1985 after a political turmoil. In order to restructure the political and economic system of USSR, Gorbachev introduced a set of radical reforms called *perestroika* in 1987. The aim of these reforms was to recover the system from the economic and politic stagnation that started in late seventies.

Firstly, a new policy, an invitation to public and mass media to criticize Soviet society and the leadership, *glasnost* (openness) was introduced by Gorbachev. In 1988, Gorbachev declared the need for the democratization of Soviet political institutions (Kotz& Weir, 2007 p.56). In accordance with *glasnost*, in 1989, for the first time, popularly elected legislatures was created: the election of the Congress of People's Deputies in March 1989 and the elections for soviets on the republic, province, city, and district levels in March 1990 (Fish, 2005, p. 248)

Economic reforms of *perestroika* were based on two principles: the democratization of Soviet economic institutions and introduction of elements of a market economy (Kotz & Weir, p.54). Accordingly, on the one hand, Gorbachev introduced the removal of the ban on private enterprise, a new law on joint ventures that abolished traditional Soviet restriction on foreign investment and the "law on state enterprises," which led to self

management and self financing (Fish, p. 242). However, on the other hand, the president was not willing to abolish the essentials of the command-and-administer economic system of USSR such as the predominance of state ownership and state control prices, employment, and investment decisions (Fish, p.244). So, it was not possible to establish a real market economy but these steps are crucial in order to understand the historical background of Russian economic system and the transition period.

Glasnost, radical economic reform and democratization of political institutions constitute three elements of perestroika, the reconstruction of Soviet Union. (Kotz& Weir, p.56) However, as expected by Gorbachev, the reform period could not rescue the Soviet Union; instead "it ended with the defeat and destruction of the Communist party, the dismantling of the state socialist system, and the dismemberment of the Soviet nation-state itself (Kotz and Weir, p.57)."

The effect of perestroika to RSFSR is crucial in order to understand Russian transition after the collapse of Soviet Union. Glasnost increased political engagement of Russians and the Russians started to insist on the establishment of Russian national institutions separate from the ones of USSR. During this period, Boris Yeltsin defended the change of RSFSR into an economically and politically sovereign republic and this view was widely supported by the Russians. As a result of political reforms, Yeltsin was elected as the chairman of the RSFSR Supreme Soviet in May 1990. Then he declared the sovereignty of RSFSR and Russia had acquired a normal status of Soviet Republic. Russia obtained national institutions that were lacking since 1922 when the collapse was approaching (Dunlop, pp.609-611). Although political reforms of this period prepared the way for the independence of Russian Federation, it is hard to claim that economic reforms were supportive in the transition period. Even, Fish argued that Gorbachev's economic reforms did get economic transition off to an unfavorable start (p.244).

Despite of all restructuring and recovering efforts, Soviet Union was officially disintegrated at the end of 1991 and Russian Federation became a sovereign country in the new international system. Bipolar world system lasting for years was replaced by a unipolar system that came up after the disintegration of Soviet Union. Capitalist economic

system was the winner of the Cold War and democracy became the only rule of the game that can be advocated. Successor states of the Soviet Union entered to a transition period in order to adopt themselves to the new order. Russian Federation like the other fourteen countries experienced staggering nation and state building period. However, as I mentioned before, the historical legacy of USSR was highly challenging for Russian Federation. In the next part, nation building of Russian Federation will be examined in order to understand the identification of Russians and Russian Federation.

3. Nation Building in Russia

Multiethnic structure of the Russian Federation, broad demographic settling of ethnic Russians outside Russia and historical legacies of Russian Empire and USSR are the main problems of the nation building in Russia since the independence. This historical and demographic structure of Russian Federation complicate the process of defining "who are the Russians" and "where is Russia". Nation building necessitates responding the question of 'who are we the people' and promoting people's national identity in order to increase their belonging to one distinct community (Tolz, 1998, p. 993).

The condition of the Russians within USSR was unique in terms of national identity formation. The Russians had never experienced nation statehood. Moreover, 18.5 percent of the population of Russian Federation was composed of ethnically non- Russians and 25 million ethnic Russian were living outside of RSFSR in 1989 (Sakwa, 2002, pp. 254-255). RSFSR was the third most ethnically homogenous republic in the Soviet Union after Armenia and Azerbaijan (Dunlop, p.604). Like RSFSR, Russian Federation is also ethnically homogenous, 83 percent of the population are Russians as well as homeland of more than 100 different ethnic groups. Particularly, some thirty different ethnic groups have their administrative systems in varying types: republic, autonomous country (*oblast*), or autonomous district (*okrug*). Those ethnic groups constitute nearly 7 percent of the population meanwhile their territories occupy more than half of the Russian Federation (Kolst &Hoivik, 2000, p.195).

Dunlop (pp. 604-606) claims that without considering some short period of times, Russian Empire and Soviet Union did not glorify Russian imperial nationalism and due to that, it is incorrect to define Russians as the imperial people. Meanwhile, he also underlines that, historically, the Russians possess always the pride of being people of a great power. During the Soviet rule, the indeterminate residual category that can be defined as being at the center without enjoying the rights, which periphery possesses, caused another problem for nation building (Kolst &Hoivik, p. 194). For this reason, Russia undergoes a more painful transition than other fourteen republics.

Tolz (pp. 995-996) summarized intellectual debates on Russian national identity on five main points. Firstly, due to historical legacies, the Russians are used to be an imperial people or have a mission to create a supranational state; this is called "union identity". Secondly, the Russians define themselves as the nation of all eastern Slavs, which are united by common origin and culture. Thirdly, Russians based their identity on language and the Russians are all Russian speakers without considering their ethnic origin. Those considering the Russians as a community of eastern Slavs or Russian speakers particularly emphasizes on Orthodoxy as symbol of Russian national identity. Fourthly, another definition of the Russian identity is based on race that regards the blood ties as the primary concern. Lastly, a civic Russian identity includes all Russian Federation's citizen without taking into account their ethnic and cultural background that aims to unify the Russians by loyalty to newly emerging political institutions and to the constitution. To identify the citizenship based on historical, cultural or ethnic background or common language is really problematic for Russian Federation. Accordingly, the civic approach to Russian national identity became the dominant ideology of Russian Federation after August 1991 (Sakwa, p.267). However, the intellectual debate on the national identification still continues.

The perception of national identity determines the establishment of citizenship laws. On November 1991, the first citizenship law in Russia granted citizenship to all those resident of Russia or the USSR if they registered with the Russian authorities and did not take the citizenship of another state. Dual citizenship was allowed only to those who decided to preserve Soviet citizenship. In February 1992, the reference to dual Soviet citizenship was abolished and all Soviet citizen resident in 1 September 1991 and without a citizenship of

their resident country could take Russian citizenship within three years. An amendment on June 1993 solved the ambiguities about the Baltic Republics and Georgia that declared independence before 1 September 1991 and let to have dual citizenship to residents of other republics. Putin administration abolished the simple registration procedures of Russian citizenship provided to USSR passport holders and from 1 January 2001 and since then it is necessary to provide a complex set of documentation and residence permit (Sakwa, p.272) for becoming Russian citizen (Sakwa, p.272).

A dilemma is obvious in Russian documents about the term 'nation'. Russian constitution in December 1993 described Russia as "multinational" state, which means the multinational "people" of Russia. On the other hand, nation was defined in the document called 'On strengthening the Russian state', which was presented by President Yeltsin in February 1994, by supraethnic terms, as "common citizenship". In this document, the linkage of nation with ethnicity was replaced by the territory and political community (Kolst &Hoivik, p.212).

During the nation building process, multiethnic structure of Russian Federation and 25 million ethnic Russians living outside the Russian Federation constitute two major problems. Ethnic Russians that are living outside RSFSR borders and enjoying Soviet citizenship suddenly became foreigners in their resident countries after the disintegration. Some of the successor states especially Baltic countries applied brutal citizenship laws that excluded ethnic Russians from their community. The identification of the "Russian" was crucial for the ethnic Russians living outside of Russian Federation.

Nearly 25 million ethnic Russians living outside Russian Federation became ethnic minority groups residing in a nationalizing state. Firstly, labeling those groups is a terminological problem. Various different usage and sometimes inappropriate ones is evident such as Russian settler community, Russian Diaspora or Russian speaking population (Poppe & Hangendoorn, 2001, p. 57). Other than the terminological problem, how does those people identify themselves is another question. Soviet citizen identification was the dominant custom that continued still after the breakup of USSR. Moreover, other than the "Russian" identification, there is also some dual ethnic identification and in a

small number, a cosmopolitan type of ethnic self- identification such as inhabitants of Europe or the world. As an alternative Russians can have a republican identification. This model includes a mixture of cultural identity options with options of political identity. "The cultural identity options are identification with Russian culture development of a new but Russian-rooted identity and identification with the titular culture. The political identity options are fourfold: loyalty towards the historical boundaries of the Russian state, loyalty towards the present Russian Federation, aspirations for the creation of a new state, and loyalty towards the republic of residence"(Poppe & Hangendoorn, pp. 58-59).

Another problem of the nation building was the ethnically non-Russians. Yeltsin declared his full support for the sovereignty of the minority people in RSFSR but he had also underlined that autonomous formations of RSFSR have to take part in a federation treaty with Russia (Dunlop, p.615). When Russia declared sovereignty, autonomous formations of RSFSR had also announced their sovereignty consecutively. However, only in Tatarstan and Chechnya, self-determination problem came into prominence. In November 1991, Chechens declared their full independence. Yeltsin declared state-emergency and had sent a small contingent of Russian soldiers to Grozny, capital of Chechnya. However, a few days later, the Russian Supreme Soviet removed state of emergency and pulled back their soldiers. Although, Chechen economy was depended on Russia, it was defacto politically independent (Kolst&Hoivik, p.214-215). Uncertainties about the status of Chechnya caused many problems. Two destructive wars were fought over these territories between Russia and Chechens in 1994 and 1999. After the defeat in 1994, Russia launched another attack in 1999 to Chechnya. Since then Russia stabilized the situation after the establishment of a pro-Russian government in the Chechen Republic.

Tatarstan was the first republic that declared its sovereignty without mentioning any relations with Russian Republic, Tatar leaders directly addressed to USSR. Thus, they elevated their status to Union republic. Tatarstan was divided into many different groups but luckily different from Chechens, they managed to reach a conclusion with Russia without bloodshed. New constitution led to an unprecedented agreement between Tatarstan and Russia in February 1994. According to the terms of this agreement, the Russian Federation and the Republic of Tatarstan are linked on the basis of the

constitutions of both countries and the bilateral agreements. The only concession of Tatarstan was the removal of its demand for being "subject of international law" (Kolst&Hoivik,p. 223).

In conclusion, although, nation building process has been always a problem in multi-ethnic countries, Russian case is more complicated because of the Soviet historical legacy and the remarkable Russian population outside RF. The debates on the national identification still continue but civic identification has been rooted in Russian Federation.

4. State-Building

4.1. Political level of the State-Building

State building in Russia was complicated because of different simultaneous tasks. "Its system of government had to be built from scratch, its constitution had to be rewritten, its legal system needed to move away from the punitive and vindictive ethos of the Soviet period, and its officialdom had to be retrained in the ways of a modern civil service"(Sakwa, p.45).

In March 1990, competitive elections was firstly held for seats in the Russian Congress of People's deputies (CDP), which was the new parliamentary institution consisting 1,068 members for a five years terms (Hahn, 1996, p.15). "The Congress was to meet twice a year to legislate on the most important constitutional and other issues. With a two-thirds majority the Congress could alter the constitution, ratify changes in the name of the republic and cities, and change the powers of the presidency" (Sakwa, p.46). The institution that was properly known as parliament, the Supreme Soviet was selected by the Congress. Yeltsin was the chairman of Supreme Soviet until he became the first elected president of Russia in June 1991 (Hahn, p.17). March election in Russia is described as the "founding election" that shaped the politics of Russia until the end of 1993. In March 1990, there was not a formal party affiliation within Russians and the communist party was fragmented between the reformers and conservatives. Accordingly, the CPD was also divided between reformers that called themselves democrats and conservatives each

possessing about 40 percent of the seats with 20 percent of independents (Hahn, p. 16). This structure of the parliament led to the conflict between the legislative and the executive whose duties were not clear cut because of the constitutional ambiguities.

Indeed, Gorbachev aimed to establish a powerful Congress, in order to balance the power of Communist party. However after the disappearance of CP, this led to ambiguity on separation of powers during 1991-1993 (Sakwa, p. 48). After the failed coup in August 1991, the popularity of Yeltsin rose steadily. When Russia declared its independence, parliament gave the right to rule the country by decrees in order to implements his economic reforms. During this period, Yeltsin banned the Communist Party and nationalized its assets. "Shock Therapy" was the first move for the economic reforms which was borrowed from Polish experiment. The price control was abolished; the inflation reached 300 percent in three weeks and grew to 2,500 percent by the year's end (Hahn, pp.18-19). The breakdown of the economy, the end of the Yeltsin's power to rule the country by decrees at the end of 1992, attempts to renew the constitution, which was a Soviet legacy, increased the tension between the executive and the legislative.

Ambiguity on the role and authority of administrative branches led to political deadlock and all institutions became powerless to struggle with the transitional problems that Russia was faced. It can be claimed that the cause behind this struggle was the historical legacy of Russian people who are used to monopolize power instead of sharing it. In spring 1992, President Yeltsin pronounced his aim and called for a presidential regime due to historical tradition, transitional problems and for the ongoing reforms (Hahn, p. 40).

The last gridlock on politics, the failure Yeltsin's attempt to form a new Council of Federation that will be loyal to him and uncertainty on the ratification of the draft constitution led to a breakpoint and President Yeltsin issued a degree and dissolved the parliament on September 21, 1993 (Hahn, p. 42). Competition between the parliament and the president on the reforms ended after the dissolution of the parliament by the president without a legal authority and surprisingly, the president ordered the bombings of the parliament building in 1993 for suppressing the riot.

The shortcomings of this period were summarized by Shevtsova as "historical traditions are inconsistent with the requirements of liberalism; a middle class is still in its nascent, formative stages; the severity of ethno-national problems detracts from the process of state-building; the extent and severity of economic crisis prevents speedy solutions; the new ruling elite has significant ties with the former regime; and so forth" (Hahn, p.44).

4.1.1. The New Constitution

The preparation of a constitution started after the declaration of sovereignty. However, firstly, because of sharp changes in Russian political system then due to the conflict between the executive and the legislative, Russian parliament could not reach to a consensus for a new constitutional draft until the end of 1993. Other than these problems, it was not easy to make choices between many options: "between a unitary, federal or confederal system; a parliamentary or a presidential republic or something in between; the balance to be drawn between limited government and effective governance; the equation to be drawn between individual and group rights, between majorities and minorities. If rights are assigned to minority groups, then is there not a danger that members will identify with that community rather than as citizens of the larger state?"(Sakwa, pp.55-56)

On the eve of the referendum on 25 April 1993 that made obvious popular support to Yeltsin presidency, the president announced the details of his own constitutional proposal which was much more presidentialist. This draft was envisaging the abolition of the old Congress and Supreme Soviet, and their replacement by a bicameral legislature. The Federal Assembly would be consist of a lower chamber (the State Duma), elected on a proportional basis and an upper (the Federation Council) made up of the elected presidents of Russia's republics and the heads of regional administrations. The president would nominate the prime minister but parliament's ratification would be necessary for this post. Meanwhile, other ministerial appointments would to be approved 'in consultation' with the chamber. The president would have the right to dissolve parliament and call new elections whereas only the Federation Council would have the authority to prosecute the president. The draft was envisaging abolishing the post of vice presidency and to make amendments

on the constitution became more difficult. This proposal was the origin of the constitution adopted in December 1993 (Sakwa, p.58).

The referendum made obvious popular support behind Yeltsin and led to events in September 1993. After the dissolution of the parliament, a number of provisions for the transitional situation, stipulating that the president must serve his full term until June 1996 was added to the draft and was placed before the people for approval on 12 December 1993 (Sakwa, p.60).

58.43 percent of the voters supported the constitution and it came into force. However, only 30.7 percent of the total electorates participated to the referendum and this weakened the legitimacy of this constitution. The new Russian constitution has a liberal framework that contains provisions on human and civic rights and defines Russia as a social state. Sakwa summarized criticism on constitution as having "the inadequate legal defense of the civic and human rights of individuals; the lack of balance in the relationship between the executive and the legislative; the tension between federal and unitary principles in the relationship between the centre and localities and the large grey area of joint jurisdiction; the large area of rules and procedures (for example, governing elections) that are not written into the constitution but regulated by acts and decrees; and the lack of a realistic procedure for adopting constitutional amendments"(p.63).

The elections for the Duma in December 1993 gathered into office deputies from more than ten political parties which created three major blocs: the reformers that received nearly 38 percent of the votes, moderates 15 percent and conservatives (right wing nationalists and former communist) 34 percent. The conflict between executive and legislative was over after the establishment of the new constitution and President Yeltsin worked closely with Duma during 1994-1995 and signed more than 150 major pieces of new legislation including major codes of law (Smith, pp. 9-10).

4.1.2. Political Parties

Political Parties in Russian politics flourished in the aftermath of February 1990 after the alteration on Article 6 of the USSR constitution that grantees the status of Communist Party as the sole party in USSR. 200 parties were registered in Moscow within a year. 13 participated in election on December 1993 and 46 parties appeared on the ballot in December 1995. However, only four major parties accomplished to organize all over Russia: the Communist Party of the Russian Federation, the moderate pro-Yeltsin party Our Home is Russia, the liberal reform Yabloko Party and Vladimir Zhirinovsky's right wing Liberal Democratic Party (Smith, p. 10). These parties had little influence outside Moscow, only in some metropolitan areas such as St. Petersburg and Ekaterinburg, multiparty system was in its infancy during the transition period. The only real party was the party of power generally outside of these areas (McFaul, 1999, p.10).

Since the 1993 incidents, major political actors learn to play the game according to the rules that the new constitution designed. Presidential, parliamentary and regional elections occurred until 2000 were competitive and consequential. The democratic habit that elections are the sole way to gain the power has been internalized by Russian politicians. Moreover, the position of constitution is well grounded as the ultimate guide for resolving disagreements between executive and legislative (Mcfaul, p.6)

4.1.3. Civil Society

The emergence of a civil society was one of the major reasons for the collapse of communism in Soviet region but the situation is still pessimistic for the expansion and consolidation of an effective civil society in the region. In addition to the historical background of more than hundred years of authoritarianism that affected deeply the formation of civil society, contemporary Russia still lacks two crucial elements of a civil society- interpersonal trust and a broad array of non-state voluntary organizations (Gibson, 2001, p.52).

Moreover, generally, civic groups inevitably undergo a degree of demobilization after the end of old regime. However, in Russia, there are specific factors of transition, like, economic crisis that have further impeded the development of civil society. The middle class that usually finances the civic groups in the West suffered from the financial crisis in 1998 and this damaged the emergence of civic groups. Another negative influence to civil society development during the Russian transition period was the growing executive power. In general, civil societies are in close relation with parliaments than with executives but the growing executive power in Russia necessitates bridging the gap between Russian civic groups and executive power (McFaul, p.11).

Although, in Russia, widespread social upheavals are absent and national political institutions are stable; there is still a low level of trust in national institutions, growing protest at the local level, mass detachment from political and economic elites, the pervasiveness of informal private networks and arrangements to bypass official public channels, and frustrations over crime and corruption (Sil & Chen, 2004, p.348).

4.2. Economic Level of the State-Building

In the process of the perestroika reforms, because of many economical problems, Gorbachev tried to restructure the Soviet command economy but these were not aiming to establish a market economy. The aim was to recover Soviet economy from the bottleneck while protecting major parts of the system. After the fall of communism, while many successor states debating what sort of market reforms to pursue, Russia was still trying to decide whether to pursue market reforms at all (McFaul, p.6). The standard prescription for post communist states for transition to market economy was "shock therapy". This method had four central parts: "price decontrol, a stable currency, hard budget constraints on state-owned firms, and rapid privatization of state-owned enterprises" (Black & Tarassova, 2003, p. 212).

A large private sector emerged after the legal reforms that removed obstacles on non state employment and private ownership in all sectors of the economy. Just after the economic reforms began, the employment share of the private sector reached more than one-half of

all those who are economically active in Russia and the sector composed more than two thirds of the country's GDP (Bonnell, 1996, p.13).

Yeltsin initiated a set of economic reforms and most of the prices were liberalized in January 1992. After defeating the opposition groups at the end of 1993, Yeltsin's reforms gained momentum and as part of the economic reforms, a mass privatization was implemented. The government sold its share on the businesses to their managers, workers or to the public. Nearly 70 percent of the Russian economy was privatized during this period. International Monetary Fund assisted Russia in order to stabilize the ruble in 1995 (Shleifer & Treisman, 2005, p.152).

Due to the immediate effects of these reforms, Russian economy collapsed and reactions in the society led to the victory of Communist Party in 1995. As a consequence, enacting these reforms was very difficult because of the Communist party's resistance. In this period, in order to stay in the office after the elections in 1996, Yeltsin, as part of his political campaign, and in an effort to balance the budget, he applied to a "loans-for-shares" program; some of the governmental assets were handed over to some businessman in exchange for loans to the government. The term "oligarchs" aroused after those groups started to enjoy great political and economic influence (Shleifer & Treisman, p.152). Massive budget deficits throughout the 1990s were covered through government bonds and foreign borrowing which worked while the oil prices were high (McFaul&Stoiner-Weiss, 2008, p.79). However, economic crisis in East Asia had spread to Russia, oil prices collapsed, so too did Russian financial system. In August 1998, due to the bankruptcy of the government, the ruble was radically devalued for reducing the domestic debt. Moreover, Russia failed to pay billions of outstanding loans to both domestic and foreign lenders (McFaul & Stoiner-Weiss, pp. 79-80).

A left government headed by Primakov replaced the liberal government that was accused of being responsible from the economic crisis. Primakov and his government stopped borrowing of Russian Federation, decreased government spending and reduced the state's role in the economy. Russian economy recovered from the financial breakdown very

quickly thanks to currency devaluation which reduced imports and prompted Russian exports as well as Russian fiscal austerity (McFaul & Stoiner-Weiss, p. 80).

"Russia's GDP plummeted between 1991 and 1998, and in 2000 was only 64% of its level in 1990. Non military output declined by a lower but still substantial amount. Income inequality soared from a Gini coefficient of 0.26 to 0.47 (Black & Tarassova, p.213)." During the transition period, in general Russian life standard dropped sharply and people lost their confidence in the future.

In countries like Russia that lacks democratic institutions, privatization periods are generally highly corrupt. In Russia, this period created powerful new oligarchs, who often resist new reforms that clash with their interests (Black & Tarassova, p.213). Although, some legal reforms aimed to control corruption, bureaucrats are still highly corrupt. "So do courts, especially at the local level. Criminal prosecution and civil lawsuits are often used by those in power as tolls against their less powerful enemies. The oligarchs are still for most purposes above the law (Black & Tarassova, p.213)."

In conclusion, Russian economic transition generated two poles in the society as the winners and losers of the transition. During this period, the historical custom of USSR, the possession of power was transformed to the possession of private property or as Bonnell defined financial power replaced political power (Bonnell, 1996, p.14).

Party secretaries of regional party committees, Konsomol officials, and top bureaucrats became "nomenklatura millionaires" during the economic transition that started under Gorbachev leadership and continued under Yeltsin presidency. Another group that increased their power was directors of large and medium sized state-owned enterprises and financial institutions under the Soviet Union. They have become the owners of enterprises or directors of joint stock companies. Another group that became winners in the new regime was the new entrepreneurs that generally engaged in illegal activities such as black marketers, currency speculators, and illegal manufacturers under the communist rule. The financial assets and entrepreneurial skills that those groups acquired during the Communist rule provided them with the opportunity to become the millionaires of the post communist

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era. The last group that enjoyed having the chance to be the winners of the transition was the highly educated Soviet elites (Bonnell, pp.15-17).

On the other hand, the losers of the economic transition, the three major poor groups in Russia are firstly, the "deprived people" such as drunkards, drug addicts, and mentally ill people, then people living on fixed incomes. Lastly, transition impoverished people employed in defense industries, textiles or other sectors of the economy which suffered severe unemployment (Bonnell, p. 20).

5. Conclusion

The transition in Post-Soviet region was troublesome and generally different from the transitions outside of this region. Historical legacy of Russian Empire and Soviet Union influences excessively the transition of those countries to democracy and market economy. Moreover, those countries generally experienced a nation building process consecutively with the liberalization of politics and economics.

Russian case is a special one in the framework of Post-Soviet transitions because of its unique position within the Soviet Union. Although, the collapse of Soviet Union was a disaster for Russians, Russian Federation was still one of the major players in international system just after the collapse because of its geographic and demographic importance, the nuclear capacity, the membership in UN Security Council as well as the historical legacy of being an major power. Every economic and political reform during the period of 1990-2000 was observed critically and supported by Western countries because the liberalization and developments in Russia was really important for the international system.

However, this study claims that even many political and economic reforms were established; Russia did not become a real democracy. Russia is an electoral democratic system and major elements of market economy are introduced in the country. However, since Putin presidency, Russia has not possessed the initial enthusiasm for democratization because Russians lost their interest for democracy because of economic problems and

political instabilities and the lost of international prestige during the transition period. The Putin presidency is famous by the recovery of the economy and the international prestige.

The political reforms of the transition prepared the way for Putin era and under the leadership of Putin, the system was consolidated. Russian Federation is a major player in the contemporary world politics due to its geographical and demographic capacity, the economic development, the possession of natural resources and the historical background. The transition of Russia is crucial for understanding current politics of Russian Federation.

This case demonstrates that the transition is not a straight way to democracy, the reform process is vital in the establishment of the new regime. Despite all efforts, Russian Federation is not a democracy in 2010 after nearly twenty years from the collapse of Soviet Union.

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Can Trade Bring Peace? An Empirical Analysis of Pakistan and India

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Abstract
The purpose of this paper is to test the impact of conflict on trade and whether
an increase in bilateral trade results in conflict reduction, and hence gives way
to peace. The paper takes the case of Pakistan and India, and with the help of
relevant literature, attempts to determine the linkage between trade and
conflict. The paper, establishes a mixed effect of trade on war, but a negative
effect of war on trade, for the two countries. It is the first to look at the two-
way effect of trade and conflict with the perspective of Pakistan and India.

1. Introduction

"When goods don't cross borders, soldiers will"

    Frederic Bastiat

The objective of this paper is to analyze the relationship between trade and conflict for

Pakistan and India, and to see what the relationship has been over the past sixty-two years.

This paper examines whether trade brings down the probability of war for both countries,

and what role conflicts play in hampering trade relations between the two countries. The

paper, with the help of relevant literature in the field tries to answer the question of

whether higher volumes of trade reduce the frequency and probability of conflict for the

two countries, and if economic interdependence between the two countries is possible in

the first place. It will also look at the impact of reduced conflict on trade volumes. I try to

answer the question, that if trade promotes peace as seen in the case of Mercado Común

del Sur (Mercosur) and the European Union (EU), why don't we see the same effect for South Asia?

The rationale for taking the case of Pakistan and India is because the South Asian region has not only seen considerable economic growth in the recent past, but it has been the site of frequent large-scale conflicts between the major players in the region. Pakistan and India, which are one of the fastest growing economies in Asia, have fought four wars in the past resulting in the loss of an estimated more than 37,000 lives. The two countries are the most influential members of the South Asian Association for Regional Cooperation (SAARC), and have the potential to act as the unifying factor for the South Asian region, in terms of trade of goods, ideas and cultures. The two hold strong economic clout in the region as they own 90 percent of the share of the SAARC's GDP, but have had a dismal performance in trade, as regional trade between both neighbors has been around 1 per cent of their total global trade (See Figure 1). Unfortunately, though South Asia is the largest region in terms of population, it is the least integrated in terms of trade compared to any other region in the world including North and Sub-Saharan Africa. Intra-regional trade in the region is only 0.8% of GDP, one-eighth of Latin America's level, and a miniscule amount compared to that of East Asia. The trade volume growth of the South Asian region has been relatively poor over the past two decades compared to other regions; Exports from South Asia have doubled over the past 20 years to approximately USD 100 billion, whereas the East Asian region grew by more than ten times that figure.[1] Intra-regional trade in South Asia is less than 5% of its total worldwide trade.

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[1] World Bank, 2007
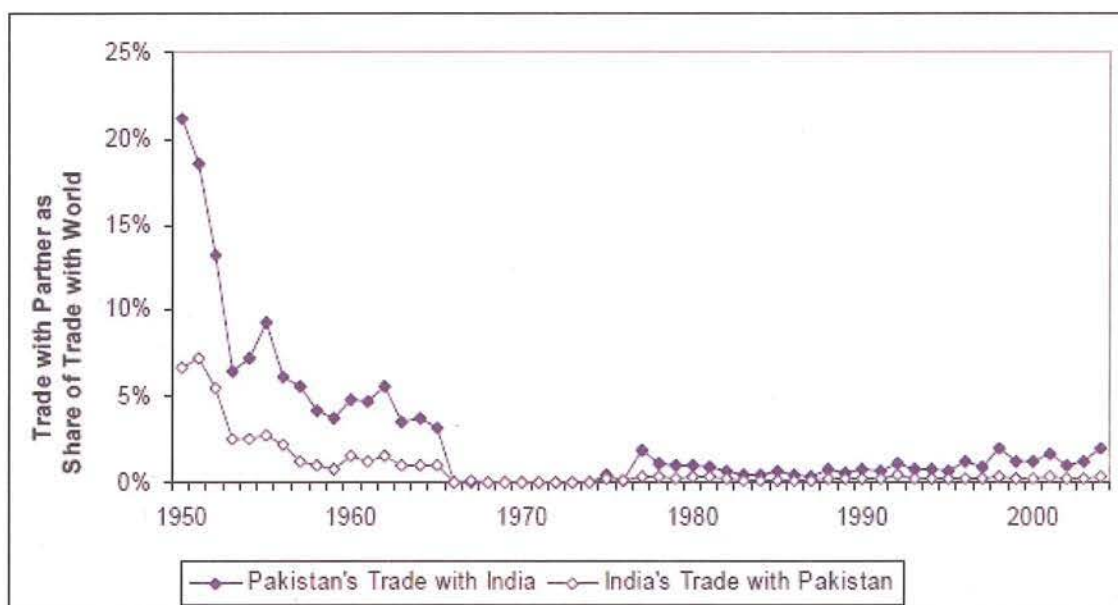
Figure 1: Pakistan-India trade as a share of trade with world

The paper fills in the gap in previous literature, as it looks at the trade-conflict nexus between the two countries in various dimensions, and examines the effect of both trade and conflict on each other. The rationale for looking at both sides of the picture is because they come up with differing results, and therefore, we end up with different conclusions. If we just look at one side of the picture there is strong probability that we end up with a high-level of biasness in our findings, and would be missing out on true empirics. The two-way effect of these two variables has only been looked at in one previous paper, and never before with a South Asian perspective. The paper can serve as an important study for different policy measures enacted by both countries towards each other.

In the domain of economics there has not been much work done on trade and conflict, as most of it comes from political science. There is a lack of empirical work done in this field with the perspective of these two countries, which should form an important element of any trade and conflict study in contemporary times. The primary mode of methodology used in this paper is case study based, using theoretical and empirical analysis. The hypothesis the paper attempts to test is whether more trade reduces conflict, and whether lesser conflict increases bilateral trade between Pakistan and India.

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This section apart from mentioning the methodology and hypothesis, brings a basic understanding of the linkage between trade and conflict in a bilateral setting (Pakistan-India). The second section analyses the available literature on trade and conflict, and gives a critical overview, while identifying some loopholes in previous literature. The third section looks at the theory in the field of Economics, Political Science, and International Relations and gives the perspective of different schools on this topic. The fourth section gives a detailed overview of the question the paper attempts to answer, and gives a qualitative analysis of the relationship between trade and conflict with reference to Pakistan-India relations. The fifth section is the concluding section.

2. Trade and Conflict

2.1. A Brief Look at Prior Literature

In 1748, Montesquieu in De l'esprit des Lois (The Spirit of the laws) wrote that "peace is the natural effect of trade" since "two nations who traffic with each other become reciprocally dependent" resulting in "their union ... founded on their mutual necessities" [(1900, p. 316)]. Trade, since centuries has been viewed as a strong political tool, see Cobden (1846), Bright (1883), Angell (1913), and Viner (1937). Hirschman (1945: v, xvi) also discusses "the possibility of using trade as a means of political pressure ... in the pursuit of power."

Political scientists, and lately some economists, have been trying to debate the impact of trade on war and vice versa, and this debate has triggered controversy among researchers (see Barbieri and Schneider, 1999; Kapstein, 2003, for recent analysis). Research has come up with varying outcomes when it comes to establish the impact of trade on war. If we look at the literature in political science during the past few decades, which tested the impact of bilateral trade on the war, we see that most of them find an inverse relationship (see Polacheck, 1980; Mansfield, 1995, Polacheck, Robst and Chang, 1999; Oneal and Russet, 1999; Hegre 2000). These findings were supported by a negative relationship which was seen in the case of the economic integration of Europe and Latin America through the European Union (EU) and Mercusor respectively.

Some of the recent studies however, have found a positive relationship (see Barbieri, 1996, 2002), which can be substantiated by cases such as those of SAARC Preferential Trading Arrangement (SAPTA) in South Asia, and Southern African Development Coordination Conference (SADC) in Africa, which have functioned in the past, but did not result in an improvement in political stability or the reduction of conflict. There is also mixed evidence, as Reuveny (2000) provides empirical evidence of both a positive and a negative relationship.

Coming to the field of Economics, recent contributions to related literature has come from Blomberg and Hess (2006) and Glick And Taylor (2005), but these papers only look at the one side effect i.e., the effect of war on trade and not vice versa. A two-sided effect i.e., that of trade on conflict, and conflict on trade has also been found, Martin *et al.* (2008) where there is a positive relationship for multilateral trade and a negative relationship for bilateral trade. We also see that terms of trade between two countries have the potential to intensify conflict over resources such as land, rivers or oil, Skaperdas and Syropoulos (2001, 2002). Alesina and Spolaore, (1997, 2003) show that the increase in globalization has led to a decrease in interdependence of one country on another. Similar work has been done by Martin *et al.* (2008) where they drive home the same concept as that of Alesina and Spolaore (1997, 2003) but through their model show how globalization has decreased the opportunity cost of conflict and has raised the equilibrium number of dyadic wars throughout the world. Alesina and Splaore (2005, 2006) also look at the linkage between conflict, defense expenditure and the number of countries involved. They show that a decrease in the number of international conflicts increases localized conflicts between smaller countries.

Most of the recent literature on trade suggests that trade is not only good for growth, but a more globalized world is less prone to wars. Studies in political science which project such views also suggest that a free market democracy lessens the usage of military force in conflicts between two countries. This was one of the reasons why organizations like the EU, Mercusor and Association of South East Asian Nations (ASEAN) were formed.

If we analyze the relationship between trade and conflict during the past two centuries, we see conflicting results. Firstly, during the first wave of globalization there was a steady rise of bi-lateral conflict (First Anglo-Afghan war, Franco-Prussian war, Spanish-American war etc.), which ended with the start of the first world war, and the period between the two world wars was a time when both conflict and trade went down together. The years after the second world war, known as the second era of globalization has been an era with rapidly growing trade, little global conflict, but a rise in bilateral wars and a high probability of conflict (during the cold war) which ended after the collapse of the USSR. During the 1990s, though there was a substantial increase in trade, and the number of independent nations also rose (former Soviet states), but we do not see a clear fall in conflicts (see Figure 2)
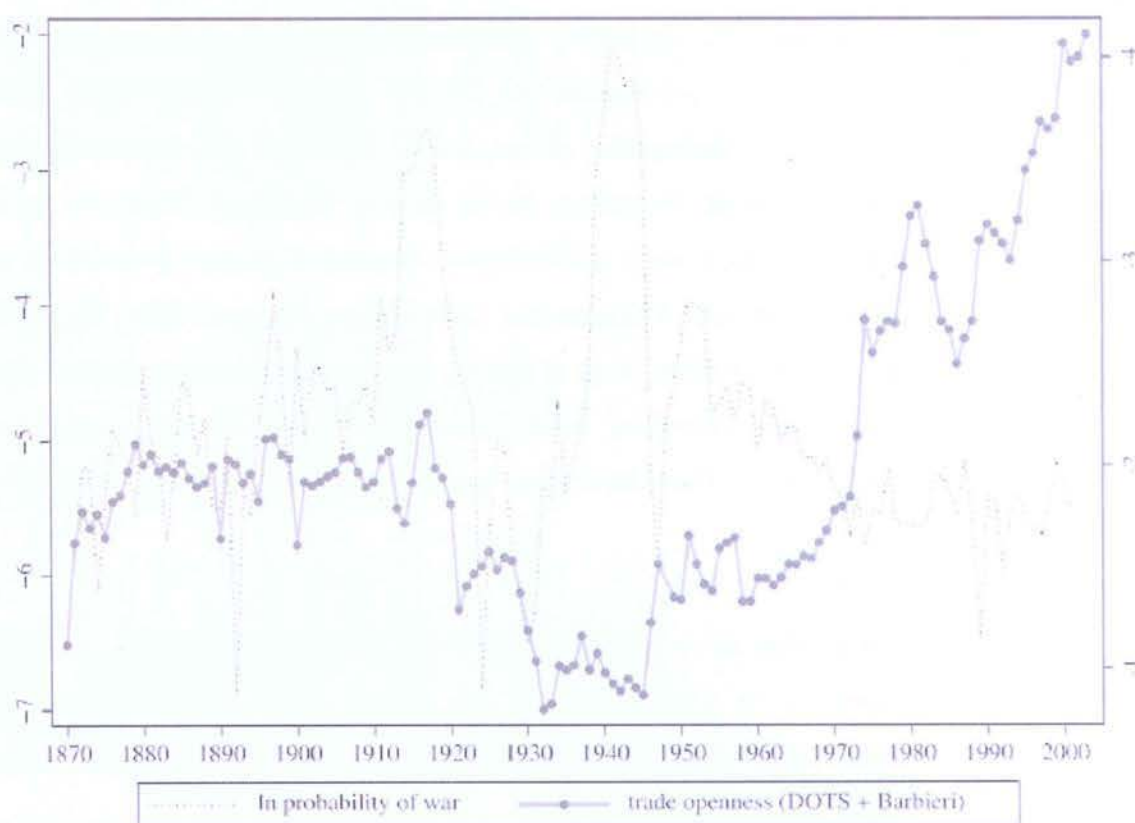
Figure 2: Militarized conflict probability and trade openness over time

2.1.1. Loopholes in the Literature

Most literature on conflict and economic interdependence looks at the relationship between trade and conflict, but as economic theory tells us that the trade (trade relative to GNP) has its own limitations, and that gains from trade would be the most appropriate indicator of economic interdependence. Since measuring gains from trade is difficult, most studies in economics and political science use the trade level as a measure of economic interdependence, which is not the most efficient way to look at it. Also, the studies measuring the relationship between trade and conflict mostly use the gravity model, the computable general equilibrium models and partial equilibrium models, Baysan *et al.* (2004) and other studies which include the revealed comparative advantage index and the trade complimentarity index, Taneja (2006). Baroncelli (2006) is the only paper to look at the relationship between trade and conflict for the two countries, albeit briefly, using a simplified gravity model, but the number of variables is lacking to give the true picture of the relationship. Apart from that, the gravity model used by Baroncelli (2006) for Pakistan and India, among other things is not a good measure because it proxies distance for trade costs. Though contiguity between Pakistan and India has not changed (they have always remained neighbors), the transaction costs of trading between the two countries has always remained substantially high. Therefore, using distance as a proxy for trade costs, would lead to biased results. This would not have been a problem if the countries in question were USA and Canada.

There is substantial paucity in economic trade-conflict literature in general, and with a South Asian perspective in particular, and this paper would act as an important contribution to South Asian economic literature, and can serve as a policy guide for the trade policies of both Pakistan and India.

3. Theory

Research done in the field of Economics and Political Science has mostly been theoretical, and the main debate is between the "more trade results in peace" liberal school (substantiated by the functioning of EU and Mercusor) and the neo-Marxist school, which argues that "asymmetric connections between two or more countries can lead to conflict, and the probability of conflict rises as asymmetry between two countries increases". The main differences between the two schools of thought arise from premise of differing possibility of gains from trade for the countries involved in the sample. Most recent studies have been using the liberal school theory.

If we look at the theory in the field of International Relations (IR), we see a different picture, as it states that trade in itself is not enough to eradicate conflict. In some cases, it can act as a catalyst in perpetuating a conflict. Specialists in the field of IR consider that the decision to go to war hinges on the potential returns from trade, and the future outlook of trade. Some IR specialists (Neo-Realist school) believe that a country's decision between conflict and trade is based upon relative gains from trade, and not absolute gains (liberal school) as given by the classical trade theory. In this school, trade is viewed as a zero-sum game leading countries to compete over the securing of scarce resources, but even if we view it as a positive-sum game, conflicts can still occur as two countries would fight over relative trade gains, Pantsios (2007). Therefore, if a country knows that the other country would benefit more than it does in relative terms, it would consider it strategically imperative not to liberalize trade (For example, Pakistan not ratifying the SAFTA, and not giving India the Most Favored Nation (MFN) status, primarily for the same reason).

Conflict can take many forms, and literature in the past has used various measures to quantify conflict. Dyadic trade variables however, are mostly measured as trade volumes in millions of current US dollars.[2]

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[2] See Appendix

4. Pakistan-India Trade-Conflict Nexus

No other dyad of countries has had as much conflict between them as have Pakistan and India.[3] These conflicts have led to an immense loss of life, and capital, and have turned the focus of both countries from development related measures to conservative security measures, thereby stagnating development in the whole region.

4.1. Chronology of Events

Political tensions between Pakistan and India have marred bilateral trade during the sixty-two year history of the two countries. In 1947 (when both Pakistan and India became independent), approximately two-third of Pakistan's gross exports were targeted towards the Indian market, whereas one-third of the imports came from India, Sangani and Schaffer (2003). After the First Kashmir war (1947-48), the situation started to change when even though India devalued its currency, Pakistan refused to devalue its currency to the sterling and the Indian rupee which led to the end of the common market with India in 1949. And later the imposition of strict import restrictions by Pakistan on Indian exports led to a further drop in the trade volume. Bilateral trade declined sharply during periods of conflict or heightened tensions, and it increased only slowly as political relations between the two countries improved, Naqvi and Schuler (2007). The bilateral trade between the two countries came to a virtual halt from 1965 – 1975, firstly due to the second Kashmir war (1965), and secondly due to the East-Pakistan war (1971). Relations further thawed during the last decade, after the Kargil war (1999), and the attack on the Indian parliament (2001) which allegedly included Pakistan-based Kashmiri terrorists. Having seen these hiccups in relations, after 2001, the trade volume between the two countries finally saw a steep, consistent and upward trend until the Mumbai attacks (2008) (See Figure 3).

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[3] Correlates of War (COW)
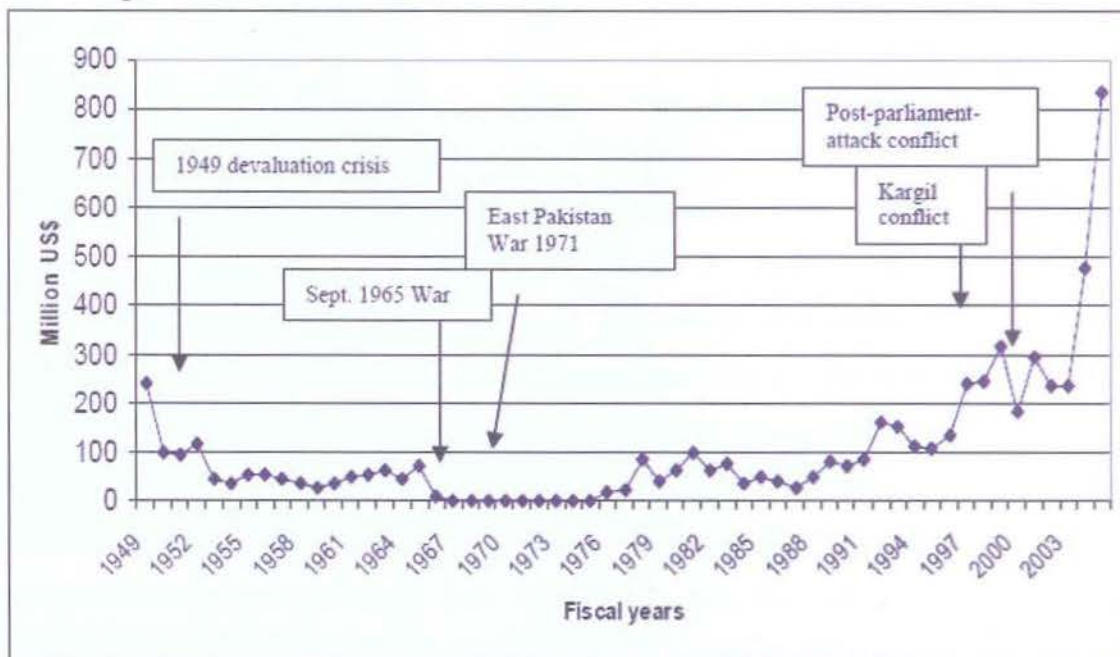
Source: 50 Years of Pakistan in Statistics, and Ministry of Commerce, Government of Pakistan.
Note: Trade is measured as the sum of exports and imports. Values have not been adjusted for inflation.

Figure 3: Pakistan-India trade-conflict nexus

4.2. What Drives Them to Fight?

There have been various factors that have led to the frequent conflicts the two countries have had in the past which include; dyadic conflicts, government structure, religious differences, economic factors, external players. These factors have often overpowered the negative relationship of trade on conflict.

4.2.1. Dyadic Conflicts

The primary driving factor behind these conflicts is the issue of Kashmir. Kashmir has been the cause of three conflicts and three crises. There are differences also over Sir Creek in Run of Kutch, and acute differences in the distribution of water from the Indus River.

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4.2.2. Government Structure

Out of the four wars the two countries have fought, two were fought when Pakistan was under military rule (1965, 1971), whereas one of them was fought when the army superseded the democratic institutions in Pakistan, and initiated a conflict with India (1999). Elected leadership in Pakistan has always stabilized the relations between the two countries through dialogue, as elected representatives from both sides of the border wanted to improve relations while representing their own people. Despite the heavy clout the Pakistan army has had, these civil governments were able to improve relations with India as much as their resources allowed them to. And whenever these elected leaders were forced out of office, the relations between the two countries thawed. India on the other hand has never suffered from a democratic deficit[4], and blames the weak democratic institutions in Pakistan as the driving force behind conflict.

4.2.3. The Religious Divide

The formation of Pakistan was on the basis of religion. The Muslim minority of British-India wanted a separate nation where they could practice their religion freely. The fact that Pakistan was formed on the basis of religion is often used as a trump card by rightist parties. On the other hand, Hindu right-wing parties in India have increasingly started to fan hatred against Indian Muslims who live as a religious minority. Therefore, religion often acts as a catalyst to initiate and exacerbate conflict against Muslim Pakistan and Hindu India.

4.2.4. External Players

Third parties always play an important role in setting the trade patterns between two countries. In the past, the relationship between conflict and bilateral trade has been tested

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[4] A democratic deficit occurs when democratic institutions in the country do not fulfill the basic principles of parliamentary democracy, and are more centrally controlled.

in a model in which third party external costs are introduced in the presence of allies and enemies, Feng (1994). Throughout the cold war, The US and China supported Pakistan militarily and politically for their own vested interests. Both US and China wanted to tackle the USSR, and were using Pakistan as a proxy. China on the other hand, had a common enemy in the form of India, and provided Pakistan with military and political support whenever it required. Therefore, today most of Pakistan's arsenal consists of hardware from US and China. India on the other hand, maintained a neutral position during the cold war, but was constantly receiving military aid from the USSR, and also political support from the USA, because the USSR and USA had China as their common enemy. Therefore, external players played a strong role in igniting conflict and starting an arms race in the region.

4.2.5. Economic Factors

With a Human Development Index (HDI) of141 and 134 respectively, both Pakistan and India have a large population that remains impoverished. One of the main factors is the allocation of a large chunk of the budget towards military expenditure, while neglecting sectors such as education and health. Even though economic growth rates have been high on the Pakistani side, inequality and poverty has risen, which has forced some individuals towards religious fundamentalism. This divide between the urban and rural class has hurt both countries, since the large wealth divide leads to unrest, and deprivation, and such a population is easy to manipulate and become frequent targets of terrorist organizations which often work across borders, and have triggered conflicts between the two countries in the past. For example, the Mumbai attacks of 2008 were blamed on Pakistani based terrorists coming from a poverty stricken background who turned to militancy, and acted beyond the government's control.

4.3. Relating Facts with Previous Findings

The effect of conflict on trade has clearly had a negative relationship for both countries in the past. We observe that the wars between the two countries led to a sudden dip in the

trade volume which showed signs of improvement very sluggishly. Recent literature tells us that military conflict has a large and persistent effect on future trade, and the effect lasts between ten and twenty years. Whereas, in the case of Pakistan and India, the negative effects of conflict seen on trade have been compounded by regular conflicts, with three of the conflicts happening approximately twenty-years within each other. Due to the high level of trust deficit, it took four decades for the trade volume to come back to the level of the 1950s. Nowadays, trade between the two countries is at a level never seen before, but any event such as the Mumbai attacks (2008) can act as a trigger for another war, which could yet again bring the trade volume back to the low levels it saw during the 1950s.

The common notion that trade promotes peace is only partially true. Recent studies show that the greater the multi-lateral trade volume of a country the more would be the probability of (bilateral) conflict. Looking at this with an Indo-Pak perspective we see that this does hold true, since India has a trade volume which is six times more than Pakistan, and has seen more conflicts in the recent past compared to Pakistan, ever since both countries became independent from British rule. India has the highest trade volume compared to any other country in the SAARC, and therefore its opportunity cost of going to war with a country is lower than Pakistan, or any other country in the region. India can afford dyadic conflicts because its trade relations with other countries are strong enough to support its economy during war-time, and therefore it believes that it can achieve its objectives through war. India has little dependence on a single country, and would not be as hesitant as Pakistan to go to war. Pakistan, on the other hand having a low trade volume, has a high opportunity cost of going to war, and has been compelled to avoid conflicts on many occasions for that reason. An analysis of the past sixty-two years of the two countries tells us that in the past India has been involved in conflicts with China over territorial boundaries which led to the Sino-Indian war (1962), conflict with Nepal over disputed land, and border conflicts with Bangladesh (2001), whereas both Pakistan and India have gone to war four times in 1948, 1965, 1971 and 1999. Pakistan on the other hand has only been to war with India and has no territorial differences with its neighbors.

Martin *et al.* (2008), ceteris paribus state that a country with more multi-lateral trade would have more of an incentive to start a war. Though this holds true globally, it contradicts

empirics for Pakistan and India, since out of the four wars fought by the two countries, two were initiated by Pakistan and two by India. This can be due to the various other contributing factors[5] that overwhelm the potential of trade to reduce the probability of conflict, or due to the democratic deficit chronically present in Pakistan's government structure.

Most trade-conflict models used by economists (see Grossman, 2003) and political scientists (see Fearon 1995 and Powell, 1999) are based on the rationalist view of war. Even if we include the democracy indexes, we cannot weigh democracy and dictatorship in the same spectrum. India is the largest functioning democracy in the world, whereas Pakistan during the course of its history, has seen thirty-five years of military rule, and two of the four wars Pakistan has had with India occurred during military rule. Military rulers act differently than elected representatives, and it would be safe to assume that these rulers brought Pakistan to war even if they knew that the cost accrued to the society would be greater than the benefit gained. Therefore, even if we assume that leaders take into account the benefits of peace, military rulers would do that to a lesser extent than elected representatives of the society because they are not directly answerable to the people of that country. The definition for rationality should be different for democratic countries and countries under dictatorship.

Looking at the neo-Marxist view and reviewing recent literature, we see that there is a positive consensus on the issue of probability of escalation of war increasing with the degree of asymmetric information. Asymmetric information with the perspective of trade and conflict would mean that the two countries do not have complete information about each other's defense capabilities. The more asymmetric information a country would have about the other country, the more it would understate the other country's defense capabilities, and initiate a war. If there is symmetric information, the country would take into account its own limitations, and might not initiate a war, thereby, trying to solve the issue with peaceful means. There exists a strong asymmetry of information between the two countries as far as military might goes. Until Pakistan tested its nuclear technology, India was not sure whether Pakistan had the capability of nuclear bombs, and

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[5] See Section 4.2. for the list of factors

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conventional[6] military power was tilted highly in favor of India. After Pakistan tested its nuclear arsenal (thereby reducing asymmetry) there has been no full-scale war between the two countries, even though the Kargil war took place one year later (which Pakistan initiated), it did not transform into an all out war, since both Pakistan and India knew that an all-out war might compel one of the two countries to use nuclear means. Therefore, one of the primary factors for not going for an all-out war would be the increase in the level of information the two countries had related to their defense capabilities.

Recent studies show us that the probability of an escalation of war is lower for countries that trade more bilaterally because of the opportunity cost associated with the loss of trade gains. We have seen countries in Europe, South America and South-East Asia to see a great increase in trade after their joining of the EC, MERCUSOR and ASEAN respectively. Intra-regional bilateral trade for these countries grew substantially, and brought down the tensions between France-Germany, Argentina-Brazil, and Indonesia-Malaysia. If the trade volume for Pakistan and India rises we would see more inter-dependence between both economies, since according to various studies the export potential from India to Pakistan is approximately USD 9.5 billion, while that from Pakistan to India is USD 2.2 billion. From a strictly economic perspective, trading for both countries can have a potentially Pareto optimal solution in terms of monetary gains through trade.

The more inelastic a country's import and export demand and supply to another country, the smaller will be the amount of conflict initiated by the actor towards the target country and vice versa, Polachek and Seiglie (2006). Looking at the two countries' case, India's (target) exports and imports to and from Pakistan (actor) are highly elastic. This is because India's dependence on Pakistan's exports to its own markets is very low. Pakistan's *official*[7] exports to India are limited to only eight commodity groups, which on average account for three-fourth of its exports (see Table 1). Whereas the composition of Indian imports is substantially broader (see Table 2). India has always enjoyed a stable trade

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[6] Conventional refers to those means of fighting used in most wars; Guns, tanks, aircrafts, ships, and submarines etc. Whereas unconventional would mean: Long-range missiles, Atomic bombs, chemical bombs etc.

[7] The reason for adding the word official is that there is large black market trade between the two countries, which has been largely unaccounted for in data.

surplus over Pakistan, which has given it economic dominance over Pakistan (see Table 3). Since India's dependence on Pakistani exports is very low, its import demand is very elastic, therefore, any movements in Pakistani exports which can potentially hurt the Indian market would not be in high demand, and India would find another exporter for the same good. For India, in terms of exports, Pakistan is yet again a very small market, and any protectionist measures on Indian exports enacted by Pakistan, would steer those exports to a third country, where it could get more revenue. Also, India's dependence on Pakistani food exports has also gone down, which again means that the inelasticity of Pakistani exports (which were to compel India to restrain from initiating conflict) has decreased, whereby further decreasing India's dependence on Pakistani exports. India also backed out of the Iran-Pakistan-India (IPI) gas pipeline talks, which should again increase the probability of India initiating a conflict, as it increases the elasticity of trade in favor of India, due to Pakistan losing out on an opportunity as acting as a transit route for natural gas going to India from Iran. Therefore, according to theory India has a higher probability of initiating conflict. But facts suggest otherwise, since the four wars the two countries have had, we see that the first two were initiated by India, whereas the last two were initiated by Pakistan.

Table 1: Composition of Pakistan's official exports to India

Commodities	2001/02	2002/03	2003/04	2004/05	2005-06
Petroleum & its products	0	0	41.6	60.2	33
Chemical elements and compounds	0	0.1	0.2	1.4	12.8
Cotton fabrics (woven)	6.7	5.2	8.4	6.5	11.6
Fruits & vegetables	67.8	30.2	20.9	9.1	9.4
Cotton yarn	4.8	2	1.4	0.9	2.7
Crude vegetable materials	8.6	5.5	2	0.8	0.9
Wool (including wool tops)	1.6	1.8	1.9	0.5	0.9
Crude vegetable materials	8.6	5.5	2	0.8	0.9
All other exports	10.5	55.2	20.7	14.7	28.7

Source: Compiled from Table A1.9, Ministry of Commerce, Government of Pakistan.

Table 2: Composition of Pakistan's official imports from India

	2001/02	2002/03	2003/04	2004/05	2005/06
Chemical elements & compounds	33.9	35.4	37.9	35.8	18.4
Chemical material & products	9.3	11.0	6.9	12.7	8.7
Concentrates of iron & steel	7.3	10.8	8.1	11.9	5.8
Feeding stuff for animals	4.1	0.6	7.3	7.1	9.1
Tires & tubes of rubber	7.2	11.0	5.0	6.0	5.0
Raw cotton	0	0	14.7	2.8	4.9
Dyeing, tanning, & coloring materials	4.9	6.3	2.8	2.5	2.6
Iron and steel manufacturers	0.5	0.3	1.8	2.4	3.9
Crude vegetable materials	3.6	3.7	1.4	1.5	1.9
Machinery & its parts	2.0	2.4	0.8	1.0	1.4
Manufactures of nonferrous metals	0.8	1.8	1.8	1.3	0.9
Tea & mate	1.2	2.8	1.8	1.1	1.3
Cotton yarn	0	0.5	2.2	0.9	1.3
Spices	2.4	1.4	0.7	1.1	0.5
Fruits & vegetables	2.7	0.5	0.1	0	0
Concentrates of nonferrous metals	1.7	1.2	0.1	0.1	0
All other imports	18.4	10.3	6.6	11.8	34.3

Source: Compiled from Table A1.10. Ministry of Commerce. Government of Pakistan.

Table 3: Pakistan trade with India (USD millions)

Year	Exports	Imports	Trade Balance	Percentage of total exports for Pakistan	Percentage of total exports for India
1996-1997	36.23	204.70	(168.47)	0.43	0.61
1997-1998	90.57	154.53	(63.98)	1.04	0.44
1998-1999	173.66	145.83	28.81	2.39	0.43
1999-2000	53.84	127.38	(73.74)	0.62	0.34
2000-2001	55.41	238.33	(182.92)	0.60	0.53
2001-2002	49.37	186.80	(137.44)	0.54	0.42
2002-2003	70.66	166.57	(95.91)	0.63	0.31
2004-2005	288.13	491.66	(205.53)	1.99	2.71
2005-2006	293.31	634.91	(341.60)	1.77	2.49

Source: Export Promotion Bureau, Pakistan; Federal Bureau of Statistics, Pakistan; Karachi Chamber of Commerce and Industry, Pakistan; Directorate General of Foreign Trade, India.

Both Pakistan and India have witnessed an increased sense of nationalism, which has risen proportionally with military spending and size. Trade between two countries grows less rapidly the more the countries invest in their military, Acemoglu and Yared (2010).[8] We see a similar pattern for both Pakistan and India, and the danger of increased nationalism and militarism is that the probability of conflict increases, even in the absence of outright

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[8] Acemoglu and Yared (2010) proxy nationalism by military spending.

conflict. Both Pakistan and India have a defense expenditure which is 3% and 2.5% of its GDP respectively. These figures are more than the percentage spent on the health sector in both countries. An increased sense of nationalism has shifted funds from social development projects to military, which has also resulted in less political flexibility which has made it difficult to solve contentious issues through peaceful means.

Martin *et al.* (2008) include the *utility of the people* variable in the function for the decision of a leader to go to war or not, and do not include any variable which would be appropriate for a country like Pakistan which has had dictatorship for almost half of its independent years. Hypothetically, one can apply the rationalist model even for a dictatorial rule by including in the function other variables that empirically match decisions made during dictatorial rule, or make different assumptions i.e., dictators (military rulers) initiate a war to gain public support, decision of a dictator to start a war depends strongly on his/her willingness to stay in power, or to establish credibility. So if we include one of the above variables in the model we can explain why Pakistan initiated war with India even when India's multilateral trading volume outnumbers that of Pakistan.

If countries in bilateral war were to suffer from large multilateral trade losses, for example through multilateral trade sanctions imposed by international organizations, then multilateral trade would become a deterrent to local wars. For the case of Pakistan and India though, this has not been the case. International sanctions were imposed on the two countries when they tested nuclear explosive devices in May 1998. The United States and a number of other trading partners of Pakistan and India imposed economic sanctions on the two countries. As of 2003, twenty Pakistani entities still remained on the list of entities for which an export license is required by the US commerce department, and four entities remained on the list for India. Therefore, we see that though sanctions were imposed on both countries, they still went to war (Kargil) in 1999, thereby ignoring the economic losses from eminent sanctions being imposed (apart from those already imposed), this time due to war. But that war has been the only war compared to the three wars fought before which was only fought on one front. The reasons for not going for an all out war are many, and one of them is the fear of further sanctions being imposed on the two countries if there was war on all fronts.

Foreign Direct Investment (FDI) has played an important role during the last two decades, which is also when India and Pakistan actively started to liberalize their economy. Theory suggests that higher level of FDI would reduce the probability of conflict as it would raise the opportunity cost of war and increase the incentives of cooperation, Thompson (2003). Empirical studies have also shown that FDI and conflict have a negative relationship, Polachek, Seigle, and Xiang (2005).[9] Though both Pakistan and India have seen a steady rise in FDI in recent years their bilateral ties have remained stagnant. Though FDI has risen for both countries, ironically Pakistan has no standing investments in India, and vice versa due to political differences. Therefore, the Pakistan-India example on FDI stands unique as not a single investment of either neighbor exists in each other's territories.

Vicard (2008) predicts that countries more subject to interstate disputes and more open to trade have a higher probability to create politically integrated regional agreements, like custom unions or common markets. If we analyze the case of Pakistan-India in that perspective we see that both countries have had the highest frequency of interstate disputes[10], and both Pakistan (see Figure 4) and India have been open to trade (to the rest of the world) in the recent past, but we do not see politically integrated regional agreements (customs unions, common markets), therefore this particular prediction does not apply to the two countries. Vicard (2008) further states that international insecurity deters the formation of shallow agreements implying a weak institutional framework, such as preferential or free trade agreements. Analyzing international security for Pakistan and India we have seen that the two countries have always been in a state of *cold-war[11]* with each other, thereby living under insecurity virtually all the time. Apart from that, Pakistan feels insecurity due to the presence of American troops in Afghanistan, and the rising religious extremism in that country which has had negative spillovers for Pakistan. India on the other hand is worrying of the rising military clout of China, which it considers a bigger threat than Pakistan. That being said, the two countries signed the SAARC Preferential Trading Arrangement (SAPTA) in 1993, but the arrangement ceased to

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[9] One unit increase in FDI results in a 0.31 unit reduction in conflict.

[10] Correlates of War (COW) data

[11] The two countries have been in a state of cold war because political tensions have always remained high between the two countries in every year, and there were many instances when the two countries came to a brink of war, but the war did not take place. Compare this case to USA and USSR prior to the fall of USSR.

function after four rounds of trade negotiations. Then the two countries signed the SAFTA in 2004, but it has been non-functional due to Pakistan not *ratifying*[12] the SAFTA.
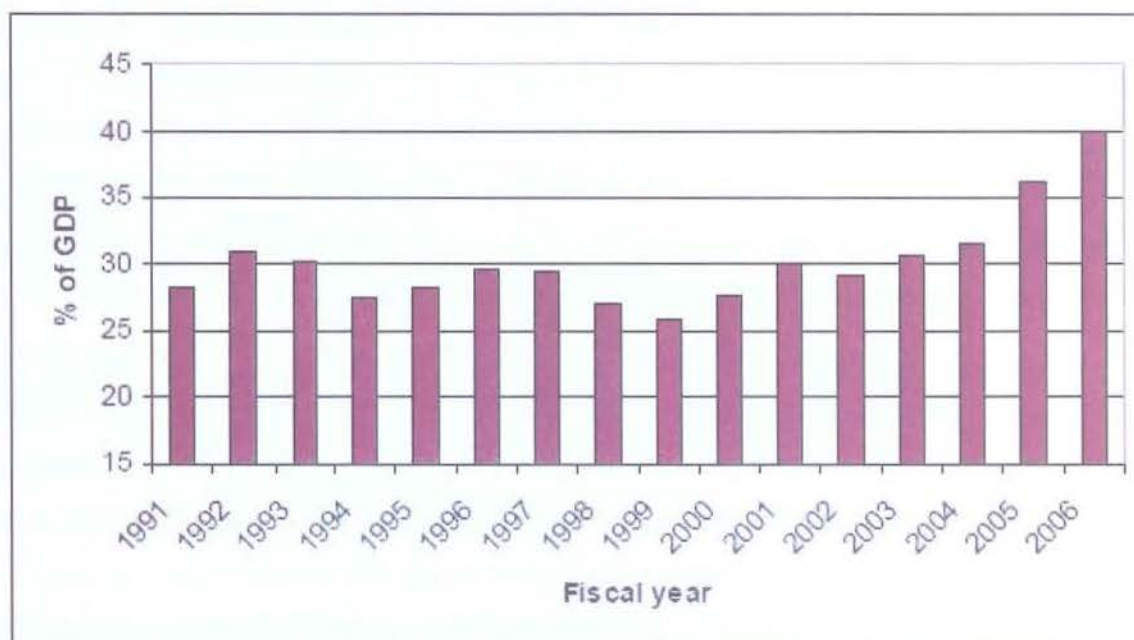
Figure 4: Pakistan's trade openness is increasing

One of the reasons for why Pakistan did not give India the MFN status is due to the fear of India's relative gains if trade in the SAARC region had been opened up. Since both countries invest large sums into their defense expenditure, Pakistan does not want to spend more on it given its already overstretched defense expenditure. The high military expenditures can be taken as a financial proxy for increased militarization between the two countries, and are stated by both countries to be for the purpose of minimum deterrence. Analyzing the high level of military expenditure, not only for a single war but increased throughout the two countries' history demonstrates the weak nature of trade initiatives (such as SAPTA and SAFTA) by subsuming them. Therefore, Pakistan has been ready to part ways with gains the signing of SAFTA might bring due to the knowledge that relative gains to India would be higher, which would lead to an acute military imbalance in favor of India and become a security threat for Pakistan.

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[12] Pakistan signed the SAFTA in 2004, but is yet to ratify it.

As aforementioned, the potential for trade between the two countries is immense. Controlling for other variables, in the absence of conflict, trade between Pakistan and India would increase by 405 percent, Baroncelli (2006). The potential gains these countries have foregone in nominal and real terms during the past have been substantially high (see Figure 5). Assuming, that these gains from trade are established due to no conflicts between the two countries, we would see all social indicators of both the countries improving, and the SAARC region would reap the benefits, other regions like ASEAN and Mercusor are reaping due to gains from trade by integrating their economies.

There is also great potential for cross border investment in different sectors of the economy which can be realized if the two don't go to war. Transport and communication links would improve, whereby the two countries would be able to make use of their close proximity. Both the countries have a large market to tap into in each other's economies as both of the nations have a growing urban middle class. Apart from that, the fundamental framework[13] to build this upon is already there.

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[13] Both countries have similar cultures, languages, and to some extent religion. Both were ruled by a common colonizer, became independent in the same year, and share a common border.
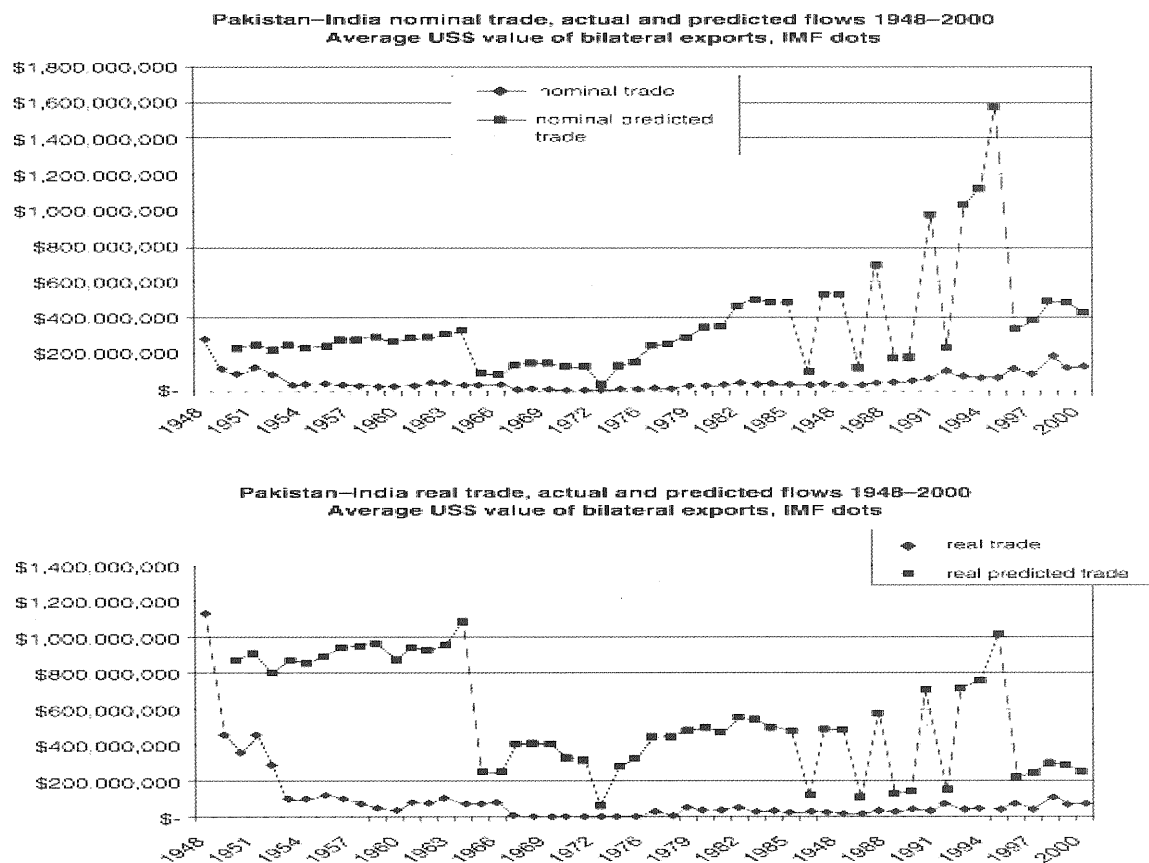
Figure 5: The peace dividend

Source: Baroncelli (2006)[14]

Countries that went to war a long time ago[15] are more likely to sign regional trade agreements (such as the EU), whereas those countries that have had recent conflicts (like Pakistan-India) are less likely to ratify Foreign Trade Agreements (FTAs).[16] The primary reason for this is because it is difficult to tie your hands when you know that there is a high probability of going to war with the other country in the coming years. The two countries have always lived together with a high probability of war, and mistrust. This lack of trust has acted as an obstacle in several agreements in the past (both economic and non-economic). Though SAPTA started to function, it ended soon, and now there have been many hindrances due to this in the ratifying of the SAFTA by Pakistan, because it knows

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[14] The dividend which has been presented in nominal and real terms, is shown by the variable in the econometric analysis. It lessens the divergence between actual and potential trade, with the converging points coinciding with periods of conflict. The dividend offsets the trade creating impact of RTAs, Baroncelli (2006).

[15] For Example, France and Germany (Franco-Prussian war, 1870)

[16] Philippe Martin, Audio interview (1 August, 2008) at Vox Talks (http://www.voxeu.org/index.php?q=node/1493)

that there can be a war at any time, and it is not willing to tie its hands for something that would not function in the long-run.

4.4. The Greco-Turkish Example

Turkey and Greece (like Pakistan and India) have been involved in chronic disputes over the Aegean Sea, Cypriot territory etc. Though the magnitude of the conflict between the two countries has been lower compared to the South Asian countries we do see a similar pattern. But Turkey and Greece have improved trade in the past, which has had a positive effect on their bilateral relations. The importance of an increase in the bilateral trade volume has been felt by both governments; *"If our trade volume with Greece reaches US$5 billion, then our bilateral political problems will vanish."* – K. Tüzmen, Turkish Minister of State, 21 May 2006.

By the late 1980s merchandise trade between Turkey and Greece was very limited: Greek exports to Turkey as a percentage of its total exports to the world were 1 percent, whereas Turkish exports to Greece as a percentage of its total exports were a minuscule 0.3 percent, Panstsios (2007). Bilateral trade has risen since, and now 4.31 percent of total Greek exports go to Turkey, while Turkish imports into Greece represent 2.24 percent of total Greek imports. For Pakistan and India however, though the trade volume between the two countries has risen, the ratio of trade as a percentage of total exports has remained the same. Turkey and Greece have increased trade in energy and food related items which due to their high inelasticity has increased their interdependence on each other.

In 2005, farm products and energy consisted of approximately half of Turkish-Greek exports to Turkey, whereas Turkish exports to Greece were more evenly distributed. Turkey's reluctance to start a new conflict has been further strengthened due to the rise in farm and energy items (which are highly inelastic) coming from Greece. As for the country-size effects, Turkey joining the EU, would make Turkey an even larger territory and would compel Greece to cooperate, trade and restrain from conflict. As of now, Greece does not object to Turkey joining the EU, because it knows that an economic integration

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with Turkey would serve both countries as it would lower tariffs, and would raise the trade volumes and therefore increase dependence on each other considerably.

In this example we see that increasing trade has had a positive effect for both Turkey and Greece, and also observe an increase in trade volume due to a decrease in the level of conflict. Pakistan and India can learn considerably from these two countries as to how trade plays an imperative role in improving bilateral relations.

5. Conclusion

Looking at the effect of trade on conflict we see a mixed relationship, not only globally[17] but for Pakistan and India as well. But there is greater probability that more trade would reduce conflict between the two countries if bilateral policies are more trade oriented, because the potential the South Asian region (especially Pakistan and India) has in terms of gains-from-trade are more than those in Africa or South America. Therefore, if the two countries start trading more, they would slowly realize the potential gains from trade, since gravity models suggest that trade between the two countries could be 5 to 10 times larger than the present \$2 billion per year, thereby raising GDP and household incomes in both countries.[18] This would help the two nations to realize that the benefits from trade have an over-riding positive effect. Therefore, the probability of conflict would decrease substantially. The effect of reduced conflict on trade however is clearly negative, even for Pakistan and India. Therefore, I conclude that *more trade would reduce the probability of conflict, and lesser conflict would generate trade.*

After a thorough analysis we conclude that the theory that a country with more multilateral trade would have more of an incentive to go to war with another country, does hold true for India and Pakistan against its neighbors but not against each other. We also learn that the reduction in asymmetric information reduces the scale and probability of conflict for the two countries. The notion that a country with higher multi-lateral trade compared to the

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[17] The cases of EU and Mercusor suggest that more trade reduces conflict, whereas the cases of SADC suggesting otherwise

[18] Based on the estimates of Batra (2004) and Kemal, Abbas and Qadir (2002).

other country would have a higher probability of initiating a war, does not hold for the two countries, since both countries have initiated war an equal number of times. The democratic deficit in Pakistan played a large role in acting as a war catalyst, since military rulers while making decisions do not take into account the direct benefits to the people; instead their decisions are tied towards their vested interests. Sanctions did not stop the two countries from going to war (as propounded by literature) in 1999, but it did play a role in confining the war to only one front. The high level of conflict between the two countries also did not lead them to form politically integrated regional agreements (customs unions, common markets), as predicted by literature. It is true though that the high levels of insecurity did not help the two countries sign *long-term functioning* free trade agreements.

The policy implications of this result are far-reaching. There is no extensive study looking at the relationship of trade and conflict for the two countries, therefore it can be used extensively by policy-makers on both sides. Looking forward, the probability of reduced conflict looks bleak for the two countries; therefore, effort should be put into improving trade, which would have a high probability in reducing conflict. Special emphasis should be put on trading food and energy related items as it would strongly increase economic interdependence and is largely possible giving the growing rapidly growing population of the two countries.

Various extensions are possible on the relationship of trade and conflict in general and with the perspective of these two countries in particular. We can see the effect of trade in a certain product on conflict, as some literature has shown different estimates for homogeneous/heterogeneous products. It would also be useful to look more extensively into the factors that lead to a mixed effect of trade on war.

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<h1 style="text-align: center">Appendix</h1>

Measuring Conflict

Richardson (1960), a renowned theorist in modern peace economics research defined conflict in a broad sense, and said that it can even include day to day criminal activities, and can take a myriad of forms. Relevant to our study is conflict between countries, especially between a dyad of countries.

War Data

There are numerous data sets that collect information on wars. Richardson (1960) was the first one to compile war data, which contained 779 conflicts (with each conflict having at least one loss of life) between 1809 and 1949. Wright (1942) also gives data on about 300 wars during 1480-1491. Singer and Small (1972) used data which contained 79 interstate wars (more than 1000 fatalities) between 1816 and 1980. That data has been regularly updated by the Correlates of War Project (University of Michigan), and contains data on variables of strong relevance. Levy (1983) also contributed through the major power war study data (Stockholm International Peace Research Institute). Gochman-Maoz (1984) used militarized dispute data containing interstate events which contained threats between states or use of military might.

Militarized Interstate Dispute (MIDs) Data is often used which record conflicts in which states threaten, display, or use force against one of more other states. There is also events data which comprises bilateral interactions which have been covered by newspapers.

Measuring Trade

Bilateral trade is mostly measured in terms of volume of trade (USD million). Bilateral (dyadic) trade is expressed as the total sum of the exports and imports between one country and another. When it is expressed as a certain percentage of a country's GDP, it shows the degree of dependence between the two countries.

Another measure commonly used is that of dyadic (bilateral) trade shares (which is bilateral trade as a proportion of the country's total trade). Empirical literature that has used this measure makes this tedious to interpret and analyze. For example one cannot tell whether a negative coefficient of a variable for a trade share variable arises due to an inverse relationship between the numerator (dyadic trade) and the dependent variable (conflict) or due to a positive relationship between the denominator (total trade) and the dependent variable. The coefficient would approach zero if both dyadic and total trade were negatively related to conflict. Therefore, it is a better approach to adjust for each country's specific variables individually, instead of using composite variables, Polachek and Sieglie (2006).

The Effect of External Trade on Environment:
An Econometric Application for Turkey

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Abstract

Nowadays, the relationship between external trade and environment is increasingly becoming one of the most prominent issues. The increase of the free trade process and the increase of environment problems which is parallel to this process, necessarily make us question this relationship. Especially from the viewpoint of Turkey, a developing Country with a developing free trade, it has caused discussions about the direction of this relationship in every area, including country policies, as a result of the development of free trade process and the environmental problem's becoming an issue.

Firstly, in our study, the relationship between external trade and environment is examined theoretically with various views and the validity of the "Pollution Haven Hypothesis" for Turkey is analyzed. For analyzing the impacts of external trade on environment, "Time Series Econometrics" is used. Results of analysis showed that Pollution Haven Hypothesis is not a permanent condition in Turkey and its impacts decrease over time.

1. Introduction

The different discussions have emerged in the world in the last 30 years with entering of world economy into free trade process. Especially after 90's, the trade-environment relationship has gained importance and it is still one of the most discussed topic nowadays.

The environment is now ranked among the scarce resources and the pollution endurance capacity is near the end. The protection of the environment, which is our source of life, should be among the basic policies of the countries as much as the development of countries with business operations. Whereas it has been observed that the developing

countries have become pollution haven by opening themselves to pollution-intensive industries of developed countries.

In our study, we have examined the relationship between trade and environment in Turkey in 5 sections. The theoretical framework between trade-environment is in section 2, the economical method we applied in the study is in section 3, the application with data that represents Turkey is in section 4, and finally in section 5 the conclusion of our study is presented.

1.1. Theory

1.1.1. The Effect of External Trade on Environment

The relation between external trade and environment has been studied from different angles in the literature and the results of the study have shown that this relation does not conform to certain patterns (Taylor, 2003: 2). When examined in line with the impact of external trade on environment, the results have bred differences according to structures of the countries and the policies they practiced.

It is possible to study the impact of external trade on environment by adapting the classification in the study of Grossman and Alan Krueger (1993) and examining it in terms of scale impact, structural impact and technological impact.[1]

1. Scale impact: As a result of liberalization of trade, an increase in economical activities is observed as a result of increase in scale of production of the companies that enter world market. Increasing the scale of production will cause the increasing need for resources with more use of natural resources and will cause more waste to be produced as a result of production.

2. Structural impact: With the liberalization of trade, phenomenon such as the change of income level and the change of consumption tendency in the structurally affected countries are the changes that will affect the environment the most. External expansion of the

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[1] For detail surveying, Taylor (2003), Grossman and Krueger (1993), OECD (1994) should be looked.

country and revival of trade may cause an increase in income level and lead to over-consumption. Demand growth will cause an increase in scale impact and negative effect to environment, thereby increasing pollution. On the other hand, members of a society whose economic level has developed are expected to become conscious and tend to use clean and less environmentally harmful products by acting sensitive to the environment. People who have high awareness level will consent to pay more money for the use of these products. This condition will push the companies to produce environmental friendly and clean products.

3. Technology impact: Although still one-sided, when examined from different angles, technology will have positive and negative impact on environment. When we examine the perspective of the companies entering into competition with free trade, they will prefer cheap and dirty technologies (which give out intensive waste) to reduce their costs. The positive impact of technology on environment can be realized by the arrival of clean technologies to the country by external investors.

1.1.2. Pollution Haven Hypothesis

Pollution haven hypothesis is one of the important topics that became a current issue after the increase of the environmental problems with the spreading of free trade to the whole world. Pollution haven hypothesis argues that during the process of free trade, dirty industries gather in the developing countries and pollution increases in these countries, while it decreases in the developed countries.

While demand of the developed countries to the developing countries is resulting from having advantages like worker wages and labor force of the developing countries, this demand has further increased in recent periods due to cheapness of energy use price, material use and natural resource use (Mani & Wheeler, 1997).

Because there is law difference between countries, the developed countries use these advantages in the developing countries easily. For example, the law in OECD countries obliges companies to pay much more money to prevent pollution and use clean production

technologies; that's what causes them to move their dirty industries to the developing countries whose laws are more flexible. This situation forms the pollution haven hypothesis.

There are many studies explaining the relation between liberation of trade and environment within the framework of pollution haven hypothesis. On one of those studies, Gallagher and Ackerman (2000), touch upon the fact that pollution intensive industries are concentrated in areas where there are deficiencies in law. The cause of this concentration is that environmental laws of the developing countries are less strict than those of the developed countries.

Low and Yeats (1992), Lucas *et al.* (1992), Birdsall and Wheeler (1993) said that industries causing intensive pollution increase in the developing countries and decrease in the developed countries.

Xing and Kolstad (1992) confirmed again that pollution intensive industries in the countries with deficient laws increased but it decreased in the countries having strict laws. Mani and Wheeler (1997) noted that pollution haven hypothesis is temporary. As a result of their study was made in China, they came to the conclusion that the changes in laws of the developing countries will occur in an environmentally-friendly way, that the environmental awareness will rise with the increase of welfare level and environmental quality will increase.

Another positive opinion, Letchumanan and Kodama (2000) argued that trade liberalization in developing countries is likely to increase technological process, demands of environmentally friendly products and transfer of clean production methods; and as a result environmental quality would increase.

When examining some study about Turkey, Yılmazer and Ersoy (2009) tested "pollution haven hypothesis" for developing countries which are 5 Asia country and Turkey in the same vein Merican *et al.* (2007). But Yılmazer and Ersoy did not find co integration relationship between determine the environmental pollution the dependant variable that is

CO2 and independent variables that are GNP (Gross National Product), manufacturing industry investments and real value added in their study although Merican et.al (2007). Found cointegration. But they defend by their model signals, pollution intensive industries increase in the countries with deficient laws but it decrease in the countries having strict laws.

Akbostancı *et al.* (2004) argued that it is possible some evidence the effect of trade on environment link on pollution haven hypothesis. Results of their study showed that Turkish manufacturing export increases for between the 1994-1997 years.

The study of Gökalp and Yıldırım (2004) has positive opinion for Turkey, and with little data constraint, they said that pollution haven hypothesis is inacceptable approach for Turkey. Quality of environment does not decrease in Turkey, on the contrary increase in free trade process.

1.1.3. Dirty Industries

The definition of dirty industries was discussed in the studies about this issue again and examined in different angles. In his study in which he examined 23 areas, Tobey (1990) described the dirty industries as industry whose costs for preventing pollution constitutes 1.85% or more of the total costs. According to this, in his study he approached to paper mills, iron steel industry, mining, nonferrous metal industry and chemical industry as dirty industries.

Low and Yeats (1992) studied 109 countries, took to costs of pollution prevention into consideration like Tobey and identified iron steel, nonferrous metals, oil refineries, metal production facilities, paper-wood pulp industry as dirty industries. Mani and Wheeler (1997) studied businesses in terms of wastes they had produced, and Rock (1996) classified them as industries that produce the most hazardous material in total production of the country.

In this study, Tobey (1990), Mani (1996) and Robinson (1988) compared the cleaning up-disposal costs of waste which dirty industries gave out and they regarded iron steel industry, non-ferrous metals industry, paper pulp mill industry, chemical industry and metal are industry as dirty industries.

2. Model

2.1. Econometric Method

In our studies, the testing of pollution haven hypothesis is reviewed in econometric in terms of the impact of external trade on Turkey's environmental pollution. Accordingly, the impacts of the external trade are addressed with independent variables such as structural impact, GNP (Gross National Product), scale impact, manufacturing industry investments and index of openness and liberalization, while the dependent variables that determine the environmental pollution is used as $SO_{2(mg/m^3)}$ and pollution rate (pollution intensive industry export/import) (Gökalp and Yıldırım, 2004).

In our model, it has been taken into consideration that macroeconomic time series Charemza and Deadman (1997) mentioned in their study included trends (they are non-stationary) and this situation lead to false results in the classical regression methods. Analysis of co-integration, which was put forward by Engle and Granger (1987), has been performed in order to avoid of the false regression results and invalid test statics. The cointegration analysis checks whether the series with trend (non-stationary in level) act together in the long term or not, and if there is a cointegration, it removes false regression problem (Utkulu, 1997, 39). Therefore, first the integration degrees of our time series variables must be identified. In other words, it must be determined at what degree each variable is stationary.

2.1.1. Unit Root Test, Dickey-Fuller Test

The first condition to be a long-term cointegration relationship between variables is that their first differences must be stationary (both variables are the first-degree stationary). The

second condition is that the estimated error term should be stationary at the level in the regression equation created with these variables. In this case, what will test both of the conditions is Dickey-Fuller and the Augmented Dickey-Fuller test (Dickey and Fuller, 1979, 1981; Fuller, 1976). The Augmented Dickey-Fuller test has been adopted to eliminate the autocorrelation problem.

$$\Delta y_t = \beta + \delta \cdot y_{t-1} + \sum_{i=1}^{p} \phi \cdot \Delta y_{t-1} + e_t \tag{1}$$

Δ: the difference term, β the constant term, e_t classical linear regression method error term.

The negativity of δ is tested here (equation 1). It means that y_t is stationary if H_0 hypothesis (δ: the existence of unit root) is rejected. If not stable, the tables presented by Fuller (1976), MacKinnon (1991) and Charemza and Deadman (1997) should be referred to for the critical values corresponding to t statistic of δ knowing that it is impossible to use distribution of t and f and it will lead to false results for this equation.

2.1.2. Two-Stage Engle-Granger Method, Regression Estimate

Engle-Granger (1987) Method tests in two stages the causality relationship between variables non-stationary at the level but also stationary at the same level. The first stage is the regression estimate of the long-term relationship between variables with least squares (EG-TSSM) method.

$$y_t = \alpha_0 + \alpha_1 \cdot x_t + u_t \tag{2}$$

y: dependent variable, x: independent variable[2], α_0: the constant term, α_1: regression estimate coefficient, u_t: it is regression error term (residual)[3] (equation 2).

After the long-run model, the second stage which is "the short-run" estimation is moved on to. The short-run model is a difference model and the causality link is tested here. Lagged

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[2] Two variables must also be stable from the same degree to be co-integration relationship.
[3] To be stable at the level of yt to be co-integration relationship

error term of the first regression is placed in the equation as the "error correction term" at the second stage and is estimated with EG-TSSM again.

The error correction term is a mechanism preventing the difference between two variables from widening. According to Granger Representation Theorem, if there is cointegration, error correction mechanism works (Engle-Granger, 1987).

$$\Delta y_t = \beta_0 + \beta_1 \Delta x_t + \beta_2 (y - \alpha_1 \cdot x_{t-1}) + e_t \qquad\qquad (3)$$

According to the Granger Representation Theorem in the sort-run equation, β_2 coefficient must be statistically significant and $-1 < \beta_2 < 0$ (equation 3). This situation shows that error correction mechanism works and demonstrates the accuracy of results of the long-run cointegration test at the first stage. In other words, there is the least one-way causality between them and the results of regression can be estimated (Utkulu, 1997).

2.2. Applications and Findings

The impacts on environment in the liberalization process of external trade in Turkey have been addressed as the scale effect (manufacturing industry investments), the process of international expansion (liberalization index), and the structural impact (gross national product, GNP). Sulfur dioxide emission as a geometric average of provinces measured in Turkey and total export/import of 5 dirty industries we used in our study (pollution limits) have been deal with to define environmental pollution. In this way, the impact of external trade on environment and the relationship between them have been examined with unit root and cointegration analysis.

The logarithmic transformation was used for all data. Reasons for the use of the logarithmic transformation are the variance can be stabilized and effect of outlier observation can be less (Franses and McAleer, 1998).

The data used in our study were taken from the Turkish Statistical Institute and they are annual data between 1992- 2008 years. The fact that we have little data constitutes the constraint in our study. This situation has prevented us from using the Gregor Hansen

Method (1996) which performs a regression analysis by taking into account any break between 1992-2008 years in the process of modeling variables.

The reason why this constraint was created is that the air quality measurement values in Turkey have been reached as of 1992.

In this way our study deals with 4 models:

- y_1: SO$_2$ (mg/m^3), 1st dependent variable,

- y_2: Pollution limits (dirty industry export/import), 2nd dependent variable,

- x_1: GNP (1987 with constant prices, 1000TL), 1st independent variable,

- x_2: Liberalization index, (export + import) /GNP, 2nd independent variable,

- x_3: Manufacturing industry investments (1987 with constant prices,1000TL), 3rd independent variable.

- Model 1: $y_1 = \alpha_0 + \alpha_1 * x_2 + \alpha_2 * x_3 + u_t$

$$SO_{2(mg/m^3)} = f \text{ (Liberalization index, Manufacturing industry investments)} \qquad (4)$$

- Model 2: $y_2 = \alpha_0 + \alpha_1 * x_2 + \alpha_2 * x_3 + u_t$

$$\text{Pollution limits} = f \text{ (Liberalization index, Manufacturing industry investments)} \qquad (5)$$

- Model 3: $y_1 = \alpha_0 + \alpha_1 * x_1 + u_t$

$$SO_{2(mg/m^3)} = f \text{ (GNP)} \qquad (6)$$

- Model 4: $y_2 = \alpha_0 + \alpha_1 * x_1 + u_t$

$$\text{Pollution limits} = f \text{ (GNP)} \qquad (7)$$

2.2.1. Results of Unit Root Test

In order for us to analyze cointegration of our 5 variables used in our models, all of them must be stationary at the same level. ADF test which does not take the structural breaks into account has been used so as to identify this. The results of Augmented Dickey-Fuller test, which is classical unit root test we applied in our study, have been given in Table 1.

Table 1: Augmented Dickey-Fuller (ADF) Test Results

Variables	Test statistic		Critical Value %5 significance*	Stationarity Degree
$SO_{2(mg/m^3)}$, Y_1 1st dependent variable	Level	0.044236	-3.065585	1st difference stationary, $Y_1 \sim I(1)$
	1st difference	-4.348451	-3.081002	
Pollution limits, Y_2 2nd dependent variable	Level	-3.017493	-3.065585	1st difference stationary, $Y_2 \sim I(1)$
	1st difference	-6.468540	-3.081002	
GNP, X_1 1st independent variable	Level	-0.185956	-3.065585	1st difference stationary, $X_1 \sim I(1)$
	1st difference	-4.421575	-3.081002	
Liberalization index, investments, X_2 2nd independent variable	Level	-1.843617	-3.065585	1st difference stationary, $X_2 \sim I(1)$
	1st difference	-3.491737	-3.081002	
Manufacturing industry, X_3 3rd independent variable	Level	0.023949	-3.065585	1st difference stationary, $X_3 \sim I(1)$
	1st difference	-3.597775	-3.081002	

*MacKinnon (1996) one-sided p-values.

As seen in Table 1, first difference is stationary in our 5 variables. In this case, we can move onto regression estimation with the Engle - Granger Method.

2.2.2. The Results of Engle-Granger Regression Analysis

The results of our 4 models are given in Table 2. The DW test statistics remaining under 0.5 in this analysis indicates that the relationship is generally spurious (Charemza and Deadman, 1997). DW test statistics being close to +/-1 shows the strong cointegration relationship. Besides, the state of DW>R^2 also supports the strong relationship. The closer it is to one R^2, the less deviations there are. But it should be noted that no matter how close R^2 to one is, if the value of DW is under 0.5, it is highly probable that the regression relationship is spurious (Utkulu, 2001, Charemza and Deadman,1997).

The stability of the long-run error term is given in Table 3 and the results of the short-run equation are given in Table 4. When we look table 3, we can say long-run equations' error terms of first, second and third model are non-stationary. But this situation do not say us, there is not co integration between the variables. It based on weakness of ADF test. We must look error correction mechanism or we must test KPSS analysis. Although long-run equations' error terms of first, second and third model are non-stationary (table 3), when we look at the results in table 4, as it is seen that the coefficient of the error correction term is between -1 and 0 β_2, so the error correction term is working. Therefore we can conclude that it can be interpreted that the long-run regression models work in our 4 models. Because of working the error correction term, KPSS analyses was not tested.

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Table 2: Engle-Granger Regression Analysis Test Results (Long-Run)

MODEL 1 LOGY1 = C(1)*LOGX2 + C(2)*LOGX3 + C(3)	Coefficient	DW	R²	Substituted Coefficients
LOGX2	-0.434168	1.389088	0.789462	LOGY1 = -0.4341678 *LOGX2 - 0.552059 *LOGX3 + 11.71556
LOGX3	-0.552059			
C(Constant term)	11.71556			
MODEL 2 LOGY2 = C(1)*LOGX2 + C(2)*LOGX3 + C(3)				
LOGX2	0.227530	1.829318	0.052084	LOGY2 = 0.227530*LOGX2 - 0.056128 *LOGX3 + 0.071555
LOGX3	-0.056128			
C	0.071555			
MODEL 3 LOGY1 = C(1)*LOGX1 + C(2)				
LOGX1	-1.951111	1.280529	0.826778	LOGY1 = -1.95111 *LOGX1 + 26.69783
C	26.69783			
MODEL 4 LOGY2 = C(1)*LOGX1 + C(2)				
LOGX1	-0.081783	2.016727	0.011168	LOGY2 = 0.08178321*LOGX1 - 1.955694
C	-1.955694			

Table 3: Residual of Long-run Equation

Variables	Test statistic		Critical Value % 5 significance	Stationarity Degree
MODEL 1 Residual (res1)	level	-3.645865	-4,3173	Non - stationary, res1
MODEL 2 Residual (res2)	level	-3.573549	-4,3173	Non - stationary, res2
MODEL 3 Residual (res3)	level	-3.585603	-3.7455	Non - stationary res3
MODEL 4 Residual (res4)	level	-3.886823	-3.7455	Level stationary res4~I(0)

Table 4: Engle-Granger Regression Analysis Test Results (Short-Run)

MODEL 1 D(LOGY1) = C(1)*D(LOGX2) + C(2)*D(LOGX3) + C(3) + C(4)*RES1(-1)	Coefficient	DW	R²	Substituted Coefficients
D(LOGX2)	-0.144185	1.827273	0.472062	-1 ≤res1(-1)≤0
D(LOGX3)	-0.024767			
C	-0.066354			
RES1(-1)	-0.720502			
MODEL 2 D(LOGY2) = C(1)*D(LOGX2) + C(2)*D(LOGX3) + C(3) + C(4)*RES2(-1)				
D(LOGX2)	0.582217	1.430338	0.698091	-1 ≤res2(-1)≤0
D(LOGX3)	-0.348855			
C	0.009133			
RES2(-1)	-0.860741			
MODEL 3 D(LOGY1) = C(1)*D(LOGX1) + C(2) + C(3)*RES3(-1)				
D(LOGX1)	-1.354602	1.811638	0.323976	-1 ≤res3(-1)≤0
C	-0.021524			
RES3(-1)	-0.605697			
MODEL 4 D(LOGY2) = C(1)*D(LOGX1) + C(2) + C(3)*RES4(-1)				
D(LOGX1)	0.733499	1.866206	0.553024	-1 ≤res4(-1)≤0
C	-0.031238			
RES4(-1)	-0.933766			

3. Conclusion

As a result of our examining environmental impacts of external trade for Turkey with Pollution Haven Hypothesis in our study, it has been seen that the general idea of hypothesis was invalid. In the process of free trade, when we look at the coefficients of the variables which will have an impact on environmental pollution, we see that free trade has affected the environment in different areas between 1992- 2008 years.

When we look at the results of our 1st and 2nd models, we see that the increase (%1) in manufacturing industry investments decreases (%0.55) sulfur dioxide and (%0.06) pollution limits values. We see that the increase (%1) in liberalization index expressing external openness decreases (%0.43) $SO_{2(mg/m^3)}$ but increases (%0.23) pollution limits.

This situation leads us to a complicated conclusion. In the process of international expansion, although dirty industries increase in the country, the decrease in the SO2(mg/m3) indicates that these industries in our country work in a more environment-friendly manner, that between the 1992-2008 years environmental policies in Turkey have changed and that environmental inspections may have increased. Thus, as in the study of Mani Wheeler (1992), we can say that the Pollution Haven Hypothesis has affected our country temporarily. The increase in manufacturing industry investments decreasing $SO_{2(mg/m^3)}$ and the pollution limits values shows us that the scale increase in our country takes place with increase of investments using clean technologies.

When we look at the 3rd and 4th models, increase in the national income of the country between 1992-2008 years shows us the decrease pollution limits and $SO_{2(mg/m^3)}$ values. In this case, it can be interpreted that the income growth in the country increases the conscious level of people and these people prefer the environmentally-sensitive clean products. Results of this study correspond to Gökalp and Yıldırım (2004)'s study that is for Turkey.

When we generally look at our findings, the pollution Haven Hypothesis is a temporary approach for Turkey, which is a developing country. Although at first it seems that the increasing investments of dirty intensive industries increase environmental pollution, later seems that decrease environmental pollution.

Because of this finding can be said so:
- Clean technologies are transferred by foreign investors to the country
- External trade increases the income level of country and increases conscious people pay more money for the use of clean products

- And it should not be forgotten that Turkey is not only developing country but also it is developing country in the European Union process. In the European Union process, the increasing of changes in the country environmental policies are important points which should be never overlooked. So developing of environmental policy prevents Turkey being pollution haven.

Finally, it is not a realistic approach to obstruct external trade and the liberalization process for protecting the environment.

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The Impact of Compliance with Environmental Standards on Market Access and Export Competitiveness: A Case Study of Syrian Olive Oil Industry

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Abstract

This study aims at investigating the impact of compliance with environmental standards on market access and export competitiveness in developing and transition economies. To fulfill this aim, a number of questions and concerns about this impact have been addressed qualitatively and quantitatively for the Syrian olive oil industry. Results indicate that compliance with environmental standards in developing and transition economies has negative impacts on their production and exports. In addition, a strong support emerges to the strategic environmental policy hypothesis. Ultimately, a number of policy implications generate from this study for Syria as well as other developing and transition economies.

1. Introduction

The idea that compliance with environmental standards can be used to achieve competitive advantage in the international markets has important implications for the way we conceive market access and export competitiveness. Indeed, the potential use of environmental standards as the best way to market access and achieve export competitiveness in international markets is a topic of growing policy concern, particularly for developing and transition economies. The environmental characteristics of products and production processes are increasingly becoming an influential factor in determining the quality of products and export competitiveness at the local and international levels. Producers in

developing and transition economies must strive, and to the maximum extent possible to meet compliance with environmental standards adopted in foreign export markets, especially for the principal export sectors important to them, so they are able to compete successfully in the international markets. Where achieving compliance with environmental standards has become an integral part of the quality of products and export competitiveness, producers in developing and transition economies need to be able to meet such standards to achieve customary market prices, meeting such standards leads both to price premiums and to higher market shares for them. Thus, environmental standards are increasingly appearing as one of the main tools in the race to market access and achieve international competitiveness.

Three main motivations explain the importance of quantifying such a topic. First, while the impact of compliance with environmental standards on market access and international competitiveness is widely discussed in the economic literature, there has been little empirical analysis of how compliance with environmental standards might affect market access and international competitiveness of key economic industrial sectors in the future, particularly in developing and transition economies. Meanwhile, the economic literature regarding the impact of compliance with environmental standards on market access and export competitiveness has attracted a lot of attention over the last decades. The main focus of this literature is to assess whether the adoption of compliance with environmental standards has a negative impact on market access and export competitiveness. Theoretically, although these concerns are well confirmed, unfortunately, there is no conclusive answer on this issue so far. Consequently, there is a need to understand whether the enforcement of compliance with environmental standards and efforts to ensure the environmental quality ultimately increase or decrease market access and international competitiveness.

Second, the concerns are growing in developing and transition economies about the possible misuse of environmental standards as tools of discrimination against the entry of their products to the developed economies markets. These concerns coincide with the growing domestic and international pressures on developing and transition economies to develop and enforce environmental standards that are necessary for the protection and

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preservation of the environment, which, if successful, could lead to an increase in production costs and a decrease in exports, particularly of products where they have significant competitive advantages. In addition, these concerns are also based on the following three assumptions (UN-ESCWA, 2005, p.4): (a) the enforcement of compliance with environmental standards increases production costs; (b) producers in developing and transition economies are ill-informed and ill-equipped to come into compliance with environmental standards adopted in the developed economies markets, which can further increase such costs; and (c) exporters in developing and transition economies are price-takers and do not have the ability to translate increased production costs into equivalent sales at higher output market prices. These conditions could therefore result in smaller profits, less income and lower market access and export competitiveness for developing and transition economies. Thus, there is an important trade-environment dimension at stake, which warrants an urgent need for further analysis to the question of assessing the impact of compliance with environmental standards on market access and international competitiveness of the production and exports in developing and transition economies.

Third, for Syria, as an open-transition economy diversifying its industrial base certainly shares similar concerns and faces similar effects like other developing and transition economies embarking the road of sustainable development, particularly in the framework of the negotiations for accession to the World Trade Organization (WTO) and the signing of both the Association Agreement with the European Union (EU) and the International Trade and Environmental Agreements. This requires Syria to apply compliance with environmental standards adopted by the EU, the WTO and the International Trade and Environmental Agreements as a precondition for its admission, especially those involving wastewater effluent standards. Whether environmental standards will affect international competitiveness and whether they can be used as non-tariff barriers to market access is the issue that is likely to become more and more important for Syria. With reference to that the Barcelona Declaration set 2010 for the completion of bilateral agreements between EU and Mediterranean countries, and it is expected that by the year 2010 there will be an international commitment by the entire EU and WTO members to comply with international environmental standards. Compliance with these environmental standards could adversely affect market access and international competitiveness of Syrian olive oil

production and exports. Moreover, Syria will most likely be adversely affected by the implementation of measures that include trade sanctions or countervailing measures on the exports of countries that do not comply with environmental standards agreed to within the framework of the Euro-Mediterranean Association Agreements, the WTO Agreements and the International Trade and Environmental Agreements.

The purpose of this study is (i) to shed light on the impact of compliance with environmental standards on the production and exports for the Syrian olive oil industry; (ii) to assist developing and transition economies in examining how compliance with environmental standards can help to improve economic efficiency and export competitiveness; and (iii) to explore the need for supporting the use of environmental standards as the best way to market access and avoid environmental dumping in the region, especially before the environmental damage occurs. In a real sense, the basic objective has to be: "prevention is better than cure with respect to compliance with environmental standards in developing and transition economies".

To fulfill this purpose, we examine the relationship between environmental standards, market access and international competitiveness by assessing the scope and scale of market access and export competitiveness impacts of compliance with environmental standards. This relationship can be assessed by applying a simple, empirical and tractable economic policy model. This model calculates the percentage change in the production and exports from compliance with environmental standards, particularly when effective mechanisms are put into place to encourage innovation, improve information dissemination and promote technology transfer in a free market system based on the following three main pillars (UN-ESCWA, 2005, p.5): (I) while the enforcement of compliance with environmental standards can increase production costs, the size of the cost change attributable to environmental compliance can be small relative to total production costs, thereby limiting the adverse implication for production, exports, market access and international competitiveness; (II) given the business instincts of entrepreneurs, higher compliance costs caused by enforcing environmental standards can be offset by implementing efficiency gains and productivity improvements in order to maintain, or even reduce, the cost of production in a free market system; and (III) while competition in the

international marketplace is rife, producers in developing and transition economies with strategic vision can enforce compliance with environmental standards and still reap a profit by attracting consumers, particularly in niche markets, who are willing to pay more for environmentally friendly products or specialized goods. These conditions could therefore result in larger profits, more income and higher market access and export competitiveness for developing and transition economies.

Thus, there are three levels of analysis arising from the application of this model. The first level called "simple case" scenario, which is calculating the impact of compliance with environmental standards on production and exports in the absence of secondary responses. The second level is based on the concept of "efficiency improvements", which is based on the principle that the amended environmental standards regimes could provide industries with incentives to encourage them to search for innovative ways to reduce costs and improve profitability. The third level is based on the concept of "international price adjustments", which is based on the principle that industries by complying with environmental standards could transfer some of the additional production costs to consumers by raising the prices of their products.

To sum up, achieving compliance with international environmental standards in foreign export markets, especially those that are water effluent standards based can have a negative impact on the Syrian olive oil production and exports. This study is a first step toward delineating possibilities that exist now and are likely to grow in the future, particularly after Syria becomes a member of the WTO and signs the Association Agreements with the EU and the International Trade and Environmental Agreements. As well, the importance of this study lies in the fact that it is a "first" in the case of the olive oil industry in developing and transition economies. It points to areas where the introduction of efficiency improvements in the production process and output market price adjustments can be made to render the industry less susceptible to the concerns of compliance with environmental standards, such as the possibility of lowering the costs of compliance with these standards and controlling production to operate at capacity. Also, I hope that the publication of this study will create greater awareness of the trade-environment issue in the world and that it

will serve as an example for other studies covering other industrial sectors in developing and transition economies.

The remainder of this study is organized as follows. The second section introduces the economic model as a methodology used in the empirical part and analyzes the results of this study. The third section presents the conclusions and policy implications of this study. The econometric estimation of the elasticities is relegated to Appendix.

2. Model and Analysis, the Results of the Study

This study follows a partial equilibrium approach. The objective of this approach is to examine the impact of compliance with environmental standards on the production and exports of Syrian olive oil products. To fulfill this objective, we adopt a modified version of the Larsen model (For more details about this model, see Larson, 2000; Harvard Institute of International Development, 2000; Larson, Nicolaides, Al-Zu'bi, Sukkar, Laraki, Matoussi, Zaim, and Chouchani, 2002). The model in essence is a simple profit maximizing framework used in the analysis. The basic set-up of the model assumes decreasing returns to scale production technology, as well as competition in both domestic and international markets. In this context, one type of environmental standards has been taken into account, standards on wastewater effluent or the "end of the pipe", such as wastewater treatment and disposal standards (Integrated Waste Management for the Olive Oil Pressing Industries).

Regarding the market structure facing the Syrian olive oil industry; given that there are a large number of olive oil producers and the presence of an increase in the quantity of olive oil production, the market situation revealed the presence of intense competition between producers in the domestic market, and thereby, the ability of olive oil producers to pass a part of the costs of compliance with environmental standards to the domestic consumers is somewhat limited. In addition, the introduction of efficiency improvements in the production processes is possible due to the enforcement of compliance with the policy of Integrated Waste Management for the Olive Oil Pressing Industries as will be explained later. At the international level, the available quantities of olive oil products for export are

large enough; as the share of Syrian olive oil exports has a significant proportion in the quantum of world olive oil exports, and thus a modification of the national olive oil production and consequently of the exported quantities can affect the output market prices of these products. Moreover, there is a differentiation of these products in the export markets based on country of origin; since the Syrian olive oil products are regarded as higher quality products in comparison to products of other countries (the Syrian olive oil won the world's third place in terms of taste), and this sufficient to give a price determination power on the Syrian olive oil exporters in the international market.

Additionally, based on the market structure situation described above, we consider three situations or possibilities in this case study: first, the basic partial equilibrium approach; second, an extension that allows for industry-level efficiency improvements to be induced by compliance with environmental standards; and third, an extension that allows for the inclusion of output market price adjustments due to domestic and export supply shifts (a large country or products differentiation based on country of origin in export markets) .i.e., where producers can pass some of the costs of compliance with environmental standards to consumers in the domestic and export markets in the form of higher output market prices. Thus, the task at hand is how to estimate or calculate the percentage change in the production and exports of Syrian olive oil products from compliance with environmental standards and a given set of market data.

In order to estimate or calculate the likely impacts on olive oil production and exports due to compliance with environmental standards, two pieces of information are needed: (1) the increase in the production costs for the producer due to compliance with environmental standards; and (2) the impact on production and exports from the production costs increase.

Regarding the first piece of required information, note that in the case of the "end of the pipe", compliance with environmental standards acts to increase the average production costs for the producer by some constant amount, e.g., m per unit of output .i.e., m represents cost estimation of olive oil processing modifications and wastewater treatment process due to compliance with the policy of Integrated Waste Management for the Olive Oil Pressing Industries. Regarding the second piece of information, a simple partial

equilibrium model of production and exports can be used as a starting point. In this case the compliance cost falls on the average production costs, i.e., the cost function for the producer can be written as:

$$C^m(w,r,y) = C(w,r,y) + my \qquad (1)$$

Where: w and r are inputs prices, and y is the level of output. Consequently the profit function for the producer can be written as:

$$\pi(p,m,w,r) = Max_{x,k} \left[pf(x,k) - wx - rk - my \right] \qquad (2)$$

Where: p is the output market price of the product, x and k are inputs used, and then the form of the profit-maximizing supply function for output Y would be:

$$Y = Y(p - m, r, r) \qquad (3)$$

The percentage change in production can be computed along with the old supply function by using the price elasticity of supply as follows:

$$\eta_{Y_p} = \frac{\Delta Y}{\Delta p} \frac{p}{y} = -\frac{\Delta Y}{m} \frac{p}{y} \Rightarrow \Delta Y / Y = -\frac{m}{p} \eta_{Y_p} \qquad (4)$$

Then, to translate the above production change into export change, the percentage change in export is given by:

$$\Delta E / E = \Delta Y / Y \frac{1}{(E/Y)} \qquad (5)$$

where E/Y represents the exports share of total production.

One should also consider the possibility of efficiency improvements in the production processes leading to reduce the overall cost of compliance, i.e., compliance with environmental standards that effectively increases the average production costs for the producer could also alter the compliance-induced efficiency improvements in the production processes. Should if this likely possibility occurs, the adverse impact on olive oil production and exports of compliance with environmental standards would be diminished considerably (see, e.g., Porter, 1990). To calculate this effect, the profit function for the producer becomes:

$$\Pi(p, m/t, w, r) = Max_{x,k} \left[pf(x,k) - wx - rk - (m/t)y \right] \qquad (6)$$

Where: t represents the efficiency parameter. Then, by applying the Hotelling's Lemma and the Quotient rule, the percentage change in production and exports are given by:

$$\Delta Y / Y = -\frac{m}{p} \eta_{Y_p} (1 - \eta_{tm}) \tag{7}$$

$$\Delta E / E = \Delta Y / Y \frac{1}{(E/Y)} \tag{8}$$

Where: η_{tm} represents the efficiency elasticity, i.e., the percentage reduction in the compliance costs due to efficiency improvements induced by compliance with environmental standards. If $\eta_{tm} > 1$, the percentage change in t is greater than the percentage change in m, that the "effective" amount of the compliance costs m/t actually falls and the output price for the producer p rises. As a result, this lower effective amount of the compliance costs due to efficiency improvements induced by compliance with environmental causes an increase in the production and exports.

In addition, depending upon the size of the industry and its dominance of the world market, some of the compliance costs may be passed along to the consumers in domestic and export markets in the form of higher output market prices. For notation, let $E = E(p)$ represent foreign demand as a function of price, and let $B = B(p)$ represent domestic demand as a function of price. The starting point is the assumption that the export price (p) clears the exports market where export demand equals export supply, and where $E(p) = Y(p - m, w, r) - B(p)$ at the equilibrium price $p = p(m, w, r)$. After taking the total differential of this equilibrium condition with respect to p and m, the impact of the increase in the average production costs for the producer by m per unit of output due to compliance with environmental standards on the output market price p can be written as:

$$\partial p / \partial M = \eta_{Yp} / \left(\eta_{Yp} - \eta_{Bp} \frac{B}{Y} - \eta_{Ep} \frac{E}{Y} \right) \tag{9}$$

Where: η_{Ep} is the elasticity of foreign demand with respect to the output price, and η_{B_p} is the elasticity of domestic consumption with respect to the output price, and B/Y is the share of domestic consumption in total production. In fact, the relationship in equation (9) shows how much of the increase in the average production costs for the producer due to compliance with environmental standards is passed along to the consumers in both the domestic and export markets in the form of higher output market prices.

Then, given that the output market price change, with the form of the domestic supply function $Y = Y(p(m,w,r),w,r)$ the form of the export supply function $E = Y(p(m,w,r),w,r) - B(p)$ and the domestic consumption elasticity formulae, the percentage change in domestic production, domestic consumption and exports can be computed as follows:

$$\Delta Y / Y = -\frac{m}{p}\eta_{Yp}(1 - \partial p / \partial M) \tag{10}$$

$$\Delta B / B = \eta_{Bp}\frac{m}{p}(\partial p / \partial M) \tag{11}$$

$$\Delta E / E = \Delta Y / Y \frac{1}{(E/Y)} - \Delta B / B \frac{(B/Y)}{(E/Y)} \tag{12}$$

Using essentially the same process as above, the basic result of the final impact with efficiency improvements and output market price adjustments is that:

$$\Delta Y / Y = -\frac{m}{p}\eta_{Yp}(1 - \eta_{tm})A$$

$$\Delta B / B = \eta_{Bp}\frac{m}{p}(1 - \eta_{tm})(\partial p / \partial M)$$

$$\Delta E / E = \Delta Y / Y \frac{1}{(E/Y)} - \Delta B / B \frac{(B/Y)}{(E/Y)} \tag{13}$$

Where: $0 \le A \le 1$ is the price adjustment factor showing how much of the initial change in supply from either equation (4) or (7) is mitigated through output market price adjustments, and given by:

$$A = 1 + \left[\frac{\eta_{Yp}}{\eta_{Bp}\frac{B}{Y} - \eta_{Yp} + \eta_{Ep}\frac{E}{Y}} \right] \tag{14}$$

Since $\partial_p / \partial M$ and A are both positive, and thus the impact on the production and exports in equations (10), (12) and (13) is smaller (absolute value) than that in equations (4) and (5) or equations (7) and (8).

Thus, the model outlined above provides three possible ways to calculate the likely impacts on olive oil production and exports due to compliance with environmental standards. In other words, the first way gives us the calculation of the direct impact of the average

production costs increase on the production and export levels of the olive oil products, assuming exogenous output market prices and no efficiency improvements modification. The second way gives us the calculation of the indirect impact of the average production costs increase on choosing more efficient production techniques. This indirect impact will be combined with the direct one to define an efficient impact of the average production costs increase on the production and export levels of the olive oil products. The third way gives us the calculation of the indirect impact of the average production costs increase on the output market price. This indirect impact will be combined with the direct and indirect ones to define the final impact of the average production costs increase on the production and export levels of the olive oil products that integrates efficiency improvements modification and output market price adjustments due to compliance with environmental standards.

2.1. The International Market for the Syrian Olive Oil Industry

Syria is considered as the homeland of olive tree before its spread to the rest of the world, where the views of researchers and relevant literature indicate that olive tree was first a native of the greater Syria nearly six thousand years ago (Mohammad, 2006, p.1). The olive oil sector in Syria is one of the most important sectors of agro-industrial production and is considered as a major contributor to the national economy of the country. Moreover, Syria is ranked the fourth largest producer of olive oil production in the world after Spain, Italy and Greece in 2006 (International Olive Oil Council, 2006). Production for 2006-2007 is estimated at about 1.2 million tons of olives and a quarter million tons of olive oil, which constitute 9% of world production. This in turn has led to the increase in the number of olive mills, which number about 860 mills at the country level (see Table 1), and this is what created the problem of pollution produced by the olive mills, which needs for concerted all efforts to solve it.

Table 1: Key statistics of the olive oil industry in Syria (Authors' elaborated based on data from the International Olive Oil Council & Syrian Statistical Abstract 1990-2007)

Years	No. of olive mills (per unit)	Olives for oil (ton) (X)	Production of olive oil (ton) (Y)	Domestic consumption (ton) (B)	Exports (ton) (E)	Price (Euro/ton) (P)
1990	614	369590	85893	62000	0	1403
1991	645	160083	39032	66000	0	1403
1992	627	405602	102955	67000	0	1612
1993	655	234561	60139	69000	140	1746
1994	686	401400	99895	78000	450	1881
1995	709	331860	84852	78000	5364	1851
1996	704	537535	126613	85000	6116	2507
1997	707	290022	78141	95000	2072	2478
1998	675	615295	144820	88000	451	2493
1999	711	322758	80104	90000	3497	2090
2000	741	731211	165354	110000	1737	2060
2001	755	370500	95384	86000	2245	2090
2002	752	784926	194599	128500	4739	1806
2003	759	435800	103947	150000	30445	1806
2004	779	875342	201964	135000	22161	2045
2005	827	500840	123143	94000	44671	2701
2006	857	897248	252353	100000	56526	3545

Table 1 presents the key statistics of the olive oil industry in Syria for the years 1990-2006. The Table also shows an upward long run trend among production, domestic consumption and exports of olive oil from year to year, and this is mainly because of (a) the fluctuated production in this period as a result of the alternative bearing phenomena; (b) the existence of olive oil imports as a result of the regional and international free trade agreements; and (c) the possibility of storage of olive oil from year to year without any negative impact on the quality in order to be used during the following year. The table also reveals that the industry consists mainly of a large number of olive mills, which have increased significantly, a rate of about 30% between 1990 and 2006. On the other hand, we note that there is a doubling in the production and domestic consumption of olive oil during the same period. Furthermore, it is also worth noting that Syria has started to export olive oil and in large quantities since 1993, and this is mainly due to the large increase in the production of olives during the same period. Meanwhile, the main feature to note is the large jump in the volume of exports after 2002 due to the increase in the amount of olive oil production and the existence of a large surplus for export. As well, the growing importance of the EU markets as mainly outlets for the Syrian olive oil exports, where large quantities of olive oil are exported to some European countries such as Spain and

Italy. This is because the production in these countries in some years isn't adequate to cover the contracts with the importing countries (Mohammad, 2006, p.8). The European Union, the United States of America, Eastern Asia, Australia and the Arab Gulf states are considered the most promising markets for export.

Given the growing importance of the relationship between environmental standards, market access and export competitiveness, it is important to analyze this relationship with a specific reference to the issues related to the olive oil industry in Syria through the following regulatory scenario.

2.2. The Potential Regulatory Scenario: Achieving Compliance with the Policy of Integrated Waste Management for the Olive Oil Pressing Industries

The policy of Integrated Waste Management for the Olive Oil Pressing Industries in Syria is a national project with the purpose of setting an integrated management system for olive oil wastes. The project is funded by the EU, managed by the United Nations Development Programme (UNDP) and implemented by the Ministry of Environment in Syria (Dimashki, Al-Nahar, and Nassar, 2007, p.5). The project will be achieved through the following phases:

1. Introducing the concepts of cleaner production options, as well as the prevention, control and treatment measures to the olive oil industry in the project area.
2. Training and technical assistance for concerned stakeholders in order to maintain principles of "green" production of olive oil.
3. Setting standards and limits relating to the olive oil industry pollutions in Syria.
4. Undertake awareness activities with regard to mitigating the environmental effects of waste resulting from the olive oil milling industries.

In general, the treatment and disposal of olive mills wastewater is currently one of the most serious environmental problems in the Mediterranean countries, such as Spain, Italy, Greece, and Syria, where the olive oil products are produced mainly. As a source of pollution, olive mill wastewater has existed for thousands of years, but their impacts on the

environment are currently more noticeable due to the following reasons. First, the production of olive oil has increased remarkably over the past 10 years. Second, in the past, the olive mills were small and scattered throughout the country and discharged their wastewaters directly on the ground or under the land (particularly in coastal areas), but they are now much greater, and some of them are connected to sewerage. Third, the public awareness of the environmental problems is now much higher than it was in the past.

More specifically, the process of uncontrolled dumping of untreated olive mills wastewater into the watercourses in the Syrian territories constitutes a major threat to the environmental quality. The olive mills wastewater generated by the olive oil extraction industry is a great pollutant to the environment. This is mainly due to its high organic load, its high content of phytotoxic and antibacterial phenolic substances and its high content of the Biological and Chemical Oxygen Demand, which resist biological degradation. The characteristics and contents of olive mill wastewater in terms of both its quantity and quality are heavily dependent on the extraction process used (Shaheen & Abdel Karim, 2007, pp.64-66). In Syria, the olive oil product is extracted mainly according to three methods. The first method is the traditional method of extraction based on press. This method constitutes 47.8% of the total olive mills. The second method is the continuous three phase decanting processes. This method generates a stream of olive oil and two waste streams, an aqueous waste (olive mill wastewater) and a wet solid waste (Zibar). This method constitutes 51% of the total olive mills. The third method is the tow-phase decanting method, which constitutes 1.2% of the olive mills (Syrian Statistical Abstract, 2007; Dimashki, Al-Nahar, and Nassar, 2007, p.11). To compare the wastewater amounts resulting from olive oil mills, Table 2 presents the comparative data for the three different olive oil extraction processes.

Table 2: Comparative data for the three different olive oil extraction processes (Roig, Cayuela, and Sanchez-Monedero, 2006, p.961; Shaheen & Abdel Karim, 2007, p.72)

Production process	Input	Amount of input	Output	Amount of output
Traditional pressing process	- Olives -Washing water - Energy	1000 kg 0.1-0.12 m^3 40-63 kWh	- Oil - Solid waste (c. 25% water + 6% oil) - Wastewater (c. 88% water)	c. 200 kg c. 400 kg c. 600 kg
Tow-phase decanter	- Olives -Washing water - Energy	1000 kg 0.1-0.12 m^3 90-117 kWh	- Oil - Solid waste (c. 60% water + 3% oil)	200 kg 800- 950 kg
Three-phase decanter	- Olives -Washing water - Fresh water for decanter - Water to polish the impure oil - Energy	1000 kg 0.1-0.12 m^3 0.5-1 m^3 c. 10 kg 90-117 kWh	- Oil - Solid waste (c. 60% water + 3% oil) - Wastewater (c. 94% water + 1% oil)	c. 210 kg c. 500-600 kg c. 1000-1200 kg

As can be seen in Table 2, the wastewater amounts resulting from olive mills differ depending on the method of extracting oil used. In traditional mills, it is about 600 kg per ton of olives, and in full-automatic and semi-automatic mills, it is between 800-1200 kg per ton of olives. It should also be noted that the maximum amount of wastewater is not depending on the harvest, but on the maximum olive processing capacity of the installed extraction equipment, and on average, a surplus amount of wastewater of around 50% can be considered for the full-automatic oil extraction if compared to the traditional and semi-automatic processes (Shaheen & Abdel Karim, 2007, p.70). The amount of olive mill wastewater in Syria is estimated at about 800-944 thousand tons annually (Ministry of Agriculture and Agrarian Reform, 2007; Dimashki, Al-Nahar, and Nassar, 2007, p.12). In general, the weight composition of olive mill wastewater is 80-96% water, 3.5-15% organics, and 0.5-2% mineral salts (Shaheen & Abdel Karim, 2007, p.66). The olive mills wastewater is a great pollutant for the environment as we mentioned earlier, and this will require further efforts to address and benefit of olive mills wastewater.

From all the above it can be concluded regarding the pollution problems caused by olive oil production, a solution based on the principles of the clean technology concept could be both the reduction and the detoxification of olive mills wastewaters (Vlyssides, Loizides,

and Karlis, 2004, p.607). This could be achieved with the enforcement of compliance with the policy of Integrated Waste Management for the Olive Oil Pressing Industries, through the introduction of the principles of the clean technology concept in the production process and the establishment of the central treatment plants. According to this policy, in the conventional 3-phase olive oil production process there is the addition of an olive stones removal stage before the malaxing stage. This leads to a 50% reduction of the added water and a consequent 50% reduction of the generated wastewaters with all the advantages of a 3-phase process and in part of a 2-phase process. This process proved to be effective for the reduction of wastewater pollution load and its detoxification (Vlyssides, Loizides, and Karlis, 2004, p.608). In Figure 1, cost estimations of the proposed olive oil process modification and wastewater treatment method are presented.
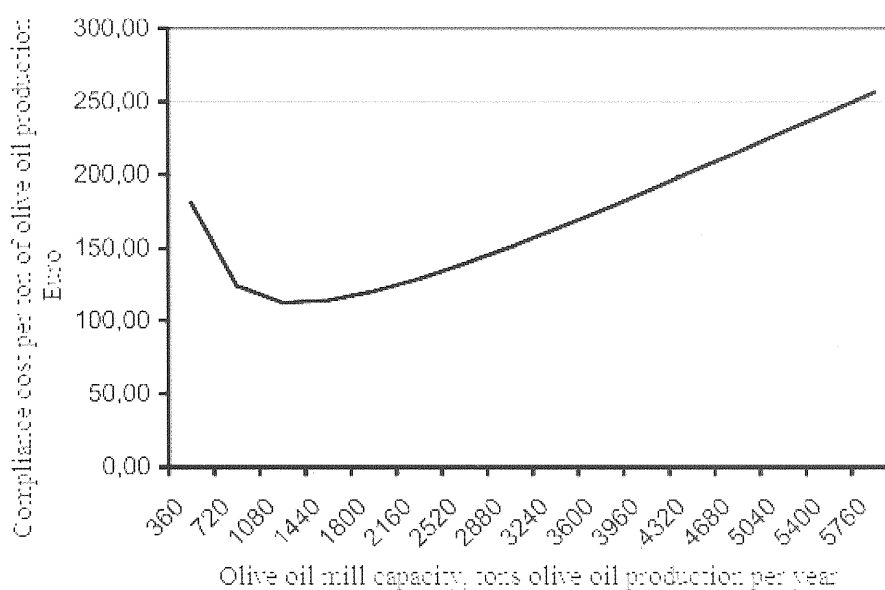
Figure 1: Cost estimation of olive oil processing modifications and wastewater treatment process
(Vlyssides, Loizides, and Karlis, 2004, p.608)

Based on the olive oil price of 2381€ per ton (the average price between 2002-2006) and the available figures reported above, the lowest cost of compliance with the policy of Integrated Waste Management for the Olive Oil Pressing Industries is 120€ per ton of olive oil, and the highest cost is 250€ per ton. If these costs are passed along in the olive oil prices, the implied price increases range from about 5% (120 / 2381 = 0.05) with the low cost compliance option, and about 10% (250 / 2381 = 0.10) with the high cost option. Both the low and high costs are taken to demonstrate the possible range of impacts.

Given the preceding discussion, this scenario involves evaluating or calculating the impact of the increase in the average cost of olive oil production for the producer due to compliance with the policy of Integrated Waste Management for the Olive Oil Pressing Industries on the production and exports of olive oil products. In view of the available data, cost estimation of olive oil processing modifications and wastewater treatment process will lead to 5-10% increase in the average cost per ton of olive oil production.

2.3. Analysis of Some Exploratory Results

The results in this section are exploratory aimed at demonstrating the usefulness of the framework developed above in this section. In other words, our task is to calculate the underlying relationships outlined in the model described above, i.e., the calculation of the impact of the increase in the average cost of olive oil production for the producer due to compliance with the policy of Integrated Waste Management for the Olive Oil Pressing Industries on the production and exports of Syrian olive oil products.

Since estimates of the elasticities for the Syrian olive oil market are not currently available, we begin our analysis by performing an econometric test, by using a double log-linear regression equation through the use of an Error Correction Model (see, e.g., Asteriou & Hall, 2007, pp.161, 310), which enables us to directly estimate the elasticities based on the key statistics of the olive oil industry in Syria for the years 1990-2006 presented in Table 1 (see Appendix for more details).

$$Log(Y) = \beta_0 + \beta_1 Log(P) + \beta_2 Log(X) + \beta_3 Log(Y(-1)) + \beta_4 Log(P(-1)) + \beta_5 Log(X(-1))$$

$$Log(B) = \beta_0 + \beta_1 Log(P) + \beta_2 Log(Y) + \beta_3 Log(B(-1)) + \beta_4 Log(P(-1)) + \beta_5 Log(Y(-1))$$

$$Log(E) = \beta_0 + \beta_1 Log(P) + \beta_2 Log(Y) + \beta_3 Log(E(-1)) + \beta_4 Log(P(-1)) + \beta_5 Log(Y(-1))$$

Where:

Y, P, X, B, E : Notation explained in the previous section;

$Y(-1)$: Lagged value of the level of output (output in past year);

$P(-1)$: Lagged value of the output market price;

$X(-1)$: Lagged value of the quantity of the input used;

$B(-1)$: Lagged value of the level of domestic demand;

$E(-1)$: Lagged value of the level of export (foreign) demand;

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$: Parameters (regression coefficients) to be estimated.

Through the application of (running) the econometric estimation of the elasticities, and dropping the regression coefficients that are not statistically significant. The testing results indicate that the regression equations are statistically significant with respect to the following elasticities:

$$Log(Y) = -1.77 + 0.16 Log(P) + 0.93 Log(X) \Rightarrow \eta_{Yp} = 0.16$$

$$Log(B) = 5.93 - 0.64 Log(P) + 0.51 Log(Y) + 0.39 Log(Y(-1)) \Rightarrow \eta_{Bp} = -0.64$$

Based on these equations, a price elasticity of supply η_{Y_p} for the Syrian olive oil market was estimated to be 0.16. In addition, the elasticity of domestic demand with respect to output price η_{B_p} was estimated to be -0.64. On the other hand, the estimation of the elasticity of export demand with respect to output price η_{E_p} was statistically insignificant, but this elasticity was currently available in the related literature; we take it from Ayadi and Matoussi (2007, p.4) where it was estimated to be around -3.05 in the case study for Tunisia.

Moreover, based on the key statistics of the olive oil industry in Syria for the years 1990-2006 presented in Table 1 and experts expectations, we obtain a compute of amounts to 40% for the initial share of exports to total production E/Y, as well as we obtain a compute of amounts to 60% for the initial share of domestic consumption to total production (Dimashki & Al Rawas, 2006, p.12; Asfari, 2007, p.5).

Additionally, the average compliance cost per ton of olive oil production due to olive oil processing modifications and wastewater treatment process m, was computed to be between 120-250 €, and the percentage increase in the average cost per ton of olive oil production for the producer m/p, was computed to be between 5-10% based on the available data reported above in Figure 1. The calculation of the impact of our potential regulatory scenario on the production and exports of olive oil products are reported below.

Table 3: The impact of the increase in the average cost of olive oil production for the producer on the production and exports of Syrian olive oil products (Equations 4 and 5)

	Small impact	Large impact
The average compliance cost per ton of olive oil m	120 €	250 €
The percentage increase in the average cost per ton of olive oil for the producer m/p	0.05	0.10
Price elasticity of supply (estimated) η_{Yp}	0.16	0.16
The percentage change in production $\Delta Y/Y$	-0.0082	-0.0163
Exports share of total production E/Y	0.40	0.40
The percentage change in exports $\Delta E/E$	-0.0204	-0.0408

Table 3 indicates that a 5% increase in the average cost per ton of olive oil production would lead to a 0.82% reduction in olive oil production, and a 2.04% reduction in olive oil exports. On the other hand, a 10% increase in the average cost per ton of olive oil production would lead to a 1.63% reduction in olive oil production, and a 4.08% reduction in olive oil exports. Therefore, given that the Syrian olive oil exports reached 202 million Euros in 2006, a best case option (a 5% increase in the average cost per ton of olive oil production) would cause a drop in export revenues of 4.12 m €, and a worst case option (a 10% increase in the average cost per ton of olive oil production) would lead to 8.24 m € drop in export revenues. In either case, the loss is significant.

Table 4: Efficiency improvements due to the increase in the average cost of olive oil production (Equations 7 and 8)

	Small impact	Large impact
The average compliance cost per ton of olive oil m	120 €	250 €
The percentage increase in the average cost per ton of olive oil for the producer m/p	0.05	0.10
Price elasticity of supply (estimated) η_{Yp}	0.16	0.16
Efficiency elasticity η_{tm}	0.30	0.30
The percentage change in production $\Delta Y/Y$	-0.0057	-0.0114
Exports share of total production E/Y	0.40	0.40
The percentage change in exports $\Delta E/E$	-0.0143	-0.0286

Based on the available figures contained in the regulatory scenario above, compliance with the policy of Integrated Waste Management for the Olive Oil Pressing Industries would lead to a 50% reduction of the generated wastewaters with all the advantages of a 3-phase process and in part of a 2-phase process (noting that there are about 60% of the olive mills

with a 3-phase process and a 2-phase process, as we mentioned previously). This can be translated into efficiency improvements of amounts to 0.30 resulting from compliance with this policy.

Table 4 offers the above findings based on an efficiency elasticity of 0.30%. Under the best case option of 5% increase in the average cost per ton of olive oil production, the reduction in olive oil production would be 0.57%, and the reduction in olive oil exports would be 1.43%. On the other hand, under the worst case option of 10% increase in the average cost per ton of olive oil production, the reduction in olive oil production would be 1.14%, and the reduction in olive oil exports would be 2.86%. This is less than the calculated impact on the production and exports that we obtained in the basic model above (Table 3). In other words, the higher the efficiency improvement, the lower the result of the percentage change in production and exports of equations 7 and 8 will be (i.e., an increase in the production and exports of olive oil products will be).

Table 5: Production and exports of Syrian olive oil products in the presence of output market price adjustments (Equations 9, 10, 11, 12, 13 and 14)

	Small impact	Large impact
The average compliance cost per ton of olive oil m	120 €	250 €
The percentage increase in the average cost per ton of olive oil for the producer m/p	0.05	0.10
Price elasticity of supply (estimated) η_{Yp}	0.16	0.16
Domestic demand elasticity wrt output price (estimated) η_{Bp}	-0.64	-0.64
Export demand elasticity wrt output price (estimated) η_{Ep}	-3.05	-3.05
Efficiency elasticity η_{tm}	0.30	0.30
Change in output price wrt the average cost $\partial p/\partial M$	0.09	0.09
Price adjustment factor A	0.91	0.91
The percentage change in production $\Delta Y/Y$	-0.0052	-0.0104
The percentage change in domestic demand $\Delta B/B$	-0.0021	-0.0042
Exports share of total production E/Y	0.40	0.40
Domestic consumption share of total production B/Y	0.60	0.60
The percentage change in exports $\Delta E/E$	-0.0099	-0.0197

Table 5 shows the above findings based on an output market price adjustment of 0.09%. As indicated in Table 5 above, a 5% increase in the average cost per ton of olive oil production would lead to a decrease of 0.52% in olive oil production and a decrease of

0.99% in olive oil exports. On the other hand, a 10% increase in the average cost per ton of olive oil production would lead to a decrease of 1.04% in olive oil production and a decrease of 1.97% in olive oil exports based on output market price adjustments. This is far less than the calculated impact on the production and exports that we previously obtained because part of the increase in average cost per ton of olive oil production for the producer is passed on to consumers in the domestic and export markets in the form of higher output market prices of olive oil. In other words, an increase in the market price of olive oil in the domestic and export markets will lead to offset a part of the increase in the average cost of olive oil production for the producer due to compliance with the policy of Integrated Waste Management for the Olive Oil Pressing Industries.

Therefore, given a computed efficiency improvements of 0.30%, the output market price adjustments case reflect a range of downward adjustment in production of olive oil from 0.52% to 1.04%, and in exports of olive oil from 0.99% to 1.97%, which is significantly smaller than the range demonstrated in the basic model case in Table 3 (a decrease from 0.82% to 1.63% in production of olive oil and a decrease from 2.04% to 4.08% in exports of olive oil). Thus, the burden of the compliance costs on the industry will be reduced significantly when efficiency improvements are induced by compliance with the policy and a part of the compliance costs is passed on to the domestic and international consumers as an output market price increase. Given that the Syrian olive oil exports reached 202 million Euros in 2006, the range of reduction in export revenues in the efficiency improvements with output market price adjustments case is 2.00 m € to 3.98 m €, and the yearly loss would thus be lower than in the Basic model case by 2.12 m € to 4.26 m €. In either case, the lower loss is significant.

Hence, our best calculation of the impacts on the production and exports in the olive oil industry resulting from the compliance and enforcement of the policy of Integrated Waste Management for the Olive Oil Pressing Industries is within the range of between 0.52-1.04% and 0.99-1.97% decrease in production and exports respectively. Nonetheless, in percentage terms, the range of impacts on the production and exports of olive oil products certainly indicates more future concerns and strategic thinking with regard to market access and export competitiveness for the Syrian olive oil industry.
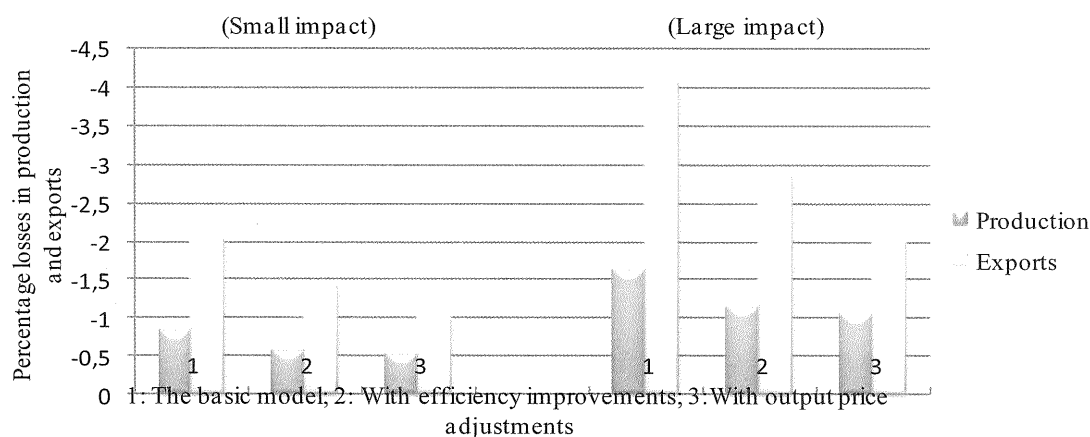
Figure 2: The impact of compliance with the policy of Integrated Waste Management for the Olive Oil Pressing Industries on the Syrian olive oil production and exports

3. Conclusions and Policy Implications

The solution of the environmental problems caused by olive oil production is essential for the future of the olive oil industry in developing and transition economies. Accordingly, this study raises a number of questions and concerns about the impact of compliance with environmental standards on market access and export competitiveness. Are environmental standards being misused to discriminate against the entry of developing and transition economies products into developed countries markets? Will the implementation of compliance with environmental standards in developing and transition economies lead to an increase in production costs and a reduction in exports, particularly of products where they have significant competitive advantages? To examine these issues, some of these questions and concerns have been addressed qualitatively and some quantitatively for the Syrian olive oil industry. Results indicate that compliance with environmental standards in developing and transition economies has negative impacts on their production and exports. In addition, a strong support emerges to the strategic environmental policy hypothesis, especially when it is used strategically in the international export markets and there is the possibility for the introduction of efficiency improvements in the production process and output market price adjustments in both the domestic and export markets. Furthermore, it turns out that there is a need for more serious research by the developing and transition

economies' governments to determine the most efficient methods for meeting compliance with the domestic environmental standards in order to be consistent with the presented and anticipated environmental standards in the international markets.

In light of this, the relevant policy question is then how to minimize the costs of compliance with environmental standards and improve the market access and international competitiveness for the Syrian olive oil industry. To help answering this question, the following policy implications are offered:

- Create an effective communication mechanism between all stakeholders and decision makers involved in this field to examine the impact of compliance with environmental standards on market access and exports competitiveness.

- Provide financial support to research and development (R & D) institutions for research in the necessary environmentally sound technologies to enhance the efficiency and effectiveness of the extraction process in the olive mills.

- Offer incentives to the olive mills for investments in cleaner technologies that increase efficiency at various stages of production. This would reduce the "end of the pipe" compliance costs before the environmental damage occurs.

- Activate the domestic environmental legislation and standards governing the work of the olive mills and factories as well as implement controls on product quality.

- Provide technical support and advanced training systems on environmental standards, as well as establish a public network with regard to the information and issues on the international environmental standards. This would help producers and exporters to know what environmental standards are and how to comply with them.

Additionally, the Syrian government should continue to pay close attention and remain actively involved in international negotiations on the development of international environmental standards, particularly with other developing and developed countries' governments. The first step to achieve this objective is to promote communication and coordination among those responsible for trade and the environment, and calling for a strategic, proactive and cooperative approach, involving exporters and importers as well as standard-setters from both developing and developed countries. This would help the Syrian government to identify a coherent policy that is viable in both areas of trade and the environment.

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Appendix

1. Estimates of a price elasticity of supply η_{Y_p}

$$Log(Y) = -1.77 + 0.16 Log(P) + 0.93 Log(X)$$

Dependent Variable: LOG(Y)
Method: Least Squares
Date: 02/07/10   Time: 17:00
Sample: 1990 2006
Included observations: 17
LOG(Y)=C(1)+C(2)*LOG(P)+C(3)*LOG(X)

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-1.771891	0.412666	-4.293770	0.0007
C(2)	0.163299	0.060237	2.710915	0.0169
C(3)	0.933055	0.030369	30.72434	0.0000

R-squared	0.990588	Mean dependent var	11.59511
Adjusted R-squared	0.989244	S.D. dependent var	0.466158
S.E. of regression	0.048346	Akaike info criterion	-3.062082
Sum squared resid	0.032723	Schwarz criterion	-2.915044
Log likelihood	29.02769	Hannan-Quinn criter.	-3.047466
F-statistic	736.7657	Durbin-Watson stat	2.094649
Prob(F-statistic)	0.000000		

The regression equation is statistically significant with respect to the relationship between Y and P because the multiple correlation coefficient is 0.99 and the multiple coefficient of determination is 0.99 (the relationship is significant), and the probability of significance (0.02) is smaller than the level of significance (0.05).

2. Estimates of the elasticity of domestic demand with respect to output price η_{B_p}

$$Log(B) = 5.93 - 0.64 Log(P) + 0.51 Log(Y) + 0.39 Log(Y(-1))$$

Dependent Variable: LOG(B)
Method: Least Squares
Date: 02/07/10   Time: 17:03
Sample (adjusted): 1991 2006
Included observations: 16 after adjustments
LOG(B)=C(1)+C(2)*LOG(P)+C(3)*LOG(Y)+C(4)*LOG(Y(-1))

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	5.932922	1.211244	4.898206	0.0004
C(2)	-0.644083	0.193997	-3.320071	0.0061

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C(3)	0.509202	0.085519	5.954259	0.0001
C(4)	0.390586	0.082358	4.742512	0.0005

R-squared	0.803998	Mean dependent var	11.43217
Adjusted R-squared	0.754997	S.D. dependent var	0.244860
S.E. of regression	0.121200	Akaike info criterion	-1.170430
Sum squared resid	0.176274	Schwarz criterion	-0.977283
Log likelihood	13.36344	Hannan-Quinn criter.	-1.160539
F-statistic	16.40791	Durbin-Watson stat	1.780478
Prob(F-statistic)	0.000152		

The regression equation is statistically significant with respect to the relationship between B and P because the multiple correlation coefficient is 0.89 and the probability of significance (0.01) is smaller than the level of significance (0.05).

3. Estimates of the elasticity of export demand with respect to output price η_{E_p}

$$Log(E) = -32.13 + 2.05 Log(P) + 1.75 Log(Y) + 0.11 Log(E(-1)) - 4.24 Log(P(-1) + 3.09 Log(Y(-1))$$

Dependent Variable: LOG(E)
Method: Least Squares
Date: 02/07/10   Time: 17:06
Sample (adjusted): 1994 2006
Included observations: 13 after adjustments
LOG(E)=C(1)+C(2)*LOG(P)+C(3)*LOG(Y)+C(4)*LOG(E(-1))+C(5)
 *LOG(P(-1))+C(6)*LOG(Y(-1))

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-32.13010	28.22085	-1.138523	0.2924
C(2)	2.046175	2.503898	0.817196	0.4407
C(3)	1.751334	1.243019	1.408936	0.2017
C(4)	0.106893	0.365194	0.292702	0.7782
C(5)	-4.243771	2.604124	-1.629635	0.1472
C(6)	3.089639	1.129684	2.734959	0.0291

R-squared	0.803004	Mean dependent var	8.534003
Adjusted R-squared	0.662293	S.D. dependent var	1.592980
S.E. of regression	0.925721	Akaike info criterion	2.987550
Sum squared resid	5.998717	Schwarz criterion	3.248296
Log likelihood	-13.41908	Hannan-Quinn criter.	2.933955
F-statistic	5.706755	Durbin-Watson stat	2.190080
Prob(F-statistic)	0.020532		

The regression equation is statistically insignificant with respect to the relationship between E and P because the probability of significance (0.44) is greater than the level of significance (0.05).

Consumer Attitudes towards Foreign Retailers' Products

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Abstract

Turkey has attracted foreign retailers for many years because of its high population, growing economy, growing market potential, young population and also, its high labour force. Although conditions are attractive, foreign retailers face some problems related to different demographic characteristics, different values, attitudes and different cultures of consumers in Turkey and also, in the other countries. One of the most important factors that affects consumers' attitudes towards foreign retailers' products and their willingness to purchase these brands is consumer ethnocentrism (According to ethnocentrism; people evaluate their race more superior than the other races). The aim of this research is generally to examine Turkish consumers' attitudes towards foreign retailers' products. In this respect, consumer ethnocentrism is explored among Turkish consumers. Besides, it is explored how this consumer ethnocentrism affect product judgment of foreign products and willingness to buy these products. The effect of age and education on attitudes is also investigated. Data was collected through a questionnaire. And this questionnaire was applied to 50 people in October 2009.

1. Introduction

International competitiveness has become a necessity for the survival of many firms because of the globalized business. In this sense, Turkey is a very attractive country for foreign retailers in terms of growing market potential. This growing market potential includes young population, growing economy and advantageous stores rents. Since the late 1980s, foreign retailers have entered into Turkey with the developments in international retailing throughout the world (Tokatlı and Boyacı, 1998). Because Turkish customers were interested in multinational brands and were prepared to spend money on products that

enabled them to have a Western type of life, international companies began to enter Turkey (Euromonitor, 2009). When foreign retailers decide to extend their market shares through different countries, they evaluate the countries that they intend to enter, in terms of many different characteristics such as demographics, culture and consumer behavior that derives from different attitudes, values and perceptions. Also these attributes may differ from one country to another. The foreign countries intended to enter to new countries rearrange their marketing mix that includes product, price, promotion and place by evaluating different attributes which has been explained above.

Some researchers were done to evaluate consumer attitudes towards foreign retailers' products. For example, according to Burton (2002) and Quellet (2007), consumers are concerned with their cultural, national and ethnic identities increasingly in more interconnected world. Some consumer researches determined that people make their purchasing decisions on information cues. Information cues can be intrinsic (e.g., product design) and extrinsic (e.g., brand name, price)(Olson, 1977; Jacoby,1972). But extrinsic cues are likely to be used in the absence of intrinsic cues or when their assessment is not possible (Jacoby, Olson and Haddock, 1971; Olson, 1977; Jacoby, 1972; Jacoby, Szybillo and Busato-Schach, 1977; Gerstner, 1985).

Also, according to some researches, it was thought that there is a relationship between attitudes toward foreign retailers' products and some demographics characteristics such as gender, education, income and age.

When doing this research, it was aimed at determining consumer attitudes towards foreign retailers' products. The research starts with a literature review which includes international retailing in Turkey, attitudes towards purchasing foreign retailers' products (general review), effects of age and education level on attitudes, influence of consumer ethnocentrism on attitudes towards foreign retailers' products respectively. Secondly, methodology part that has explanations about how this research was conducted was presented. Then, findings which derived from questionnaire results and its SPSS analyses are presented. At the last stage of the research, discussion, limitations and future researches are discussed.

2. Literature Review

2.1. International Retailing in Turkey

Since the beginning of the 1980s, global retail community has seen an expansion of international retail activities (Vida and Fairhurst, 1998). And since 1980, there has been a growing and sizable consumer market promising a large, steady and consistent demand for products at least in the large cities, which has made Turkish retailing prone to increasing pressure from large domestic and international corporations (Tokatlı and Boyacı, 1998). With the changes in the world and changes in Turkish consumer market, foreign retailers have entered into Turkey by associating with Turkish firms through licensing agreements and joint ventures (Tokatlı and Boyacı, 1998). Foodstuff retailers such as Metro International , Carrefour and Promodes , Booker , Fast-food retailers such as McDonalds, Kentucky Fried Chicken , Pizza Hut Subway and Burger King, Clothing retailers such as Benetton, Sisley, Levi's, Mothercare, Burberry's, Austin Reed, Premaman, Stefanel, Versace, Ermenegildo Zegna, Naf Naf and Channel entered Turkish market (Tokatlı and Boyacı, 1998). And it is important to indicate that; Turkey witnessed many changes and developments in retailing in 1990s and foreign retailers have generated a significant part of modern retailers. Foreign capital flow into retailing sector has been increasing since 1990 and French, British, and US became the leading investors (Tek and Demirci Orel, 2006). Market opportunities and attraction for foreign retailers were offered by big cities because of having the largest population in Turkey (Kompil and Çelik, 2006).

2.2. Attitudes towards Purchasing Foreign Retailers' Products (General Review)

De Mooji and Hofstede (2002) indicated that foreign retailers may face serious problems if they expand their operations to countries that have different cultural values. Countries may have different characteristics which should be thought by international retailers planning to enter into different countries (White and Absher, 2007).

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An attitude is a predisposition to evaluate an object or product positively or negatively. We form attitudes towards products or services that often determine whether we will purchase them or not (Solomon, 2009).

Consumer express preference or lack of preference for stores, brands, advertisements and other marketing stimuli by reflecting a favorable or unfavorable attitude. In this sense, consumers with a favorable attitude toward a store will most likely select the store and buy its products, but consumers with unfavorable attitudes will not select the store and not purchase the products there (Moye and Kincade, 1999). In this case, attitudes of consumers towards international retailers are an important factor for international retailers which are planning to enter to different countries.

There are many studies regarding the attitudes towards domestic and foreign products. For example, the results of analysis of variance tests and scheffe post-hoc comparisons revealed that rural consumers were more likely than non-rural consumers to have negative attitudes towards imported products and positive attitudes towards US made-products (Morganosky and Douglas, 1989). On the other hand, Beaudoin *et al*. (1998) studied on the fashion leaders and followers attitude toward imported and domestic apparel and found that fashion leaders had overall more positive attitude toward imported apparel than domestic apparel.

Fishbein (1967) presented an attitude model to understand the relations between attitude, intention and behavior. According to Fishbein's (1967) multi-attribute model, there are two components which determine the attitude toward performing a behavior. And this theory says that, a person's attitude is a function of 'his beliefs and the implicit evaluative responses associated with those beliefs'.

Attributes such as age, education level and consumer ethnocentrism that become an effective factor when buying from a foreign retailers' products, should be studied well.
Q1) What are the attitudes towards foreign retailers' products in terms of usage frequency of them?

2.3. Effects of Age and Education on Attitudes

Different consumers have different responses to the same shopping atmosphere and/or to the same product (Yalch and Spangenberg, 1993; as cited in Scarpi, 2006). Younger consumers seemed most favorably tend to buy foreign made or foreign brand apparel because they were more affected by fashion and likely to try new products and famous brand names, considered symbolism important, and they were less sensitive to higher prices. (Anderson and He, 1998; Ariga *et al.*, 1997; Landry, 1998; Schmitt, 1997; Zhang *et al.*, 2002; as cited in Dickson *et al.*, 2004).

Also some researchers determined that age is one of the indicators of consumer ethnocentrism. Age was considered as a relevant factor which drives consumer ethnocentrism in previous investigations (Bilkey and Nes, 1982; Han, 1988; Vida and Fairhurst, 1998). In more recent study investigating consumer ethnocentrism and willingness to buy in Bosnia and Herzegovina, Cutura (2006) concluded that age, education, region as well as the size of the respondents' place of residence were important.

Also, one of the study found neither gender nor education affected ethnocentricity levels of urban sample of Croatian consumers (Kesic *et al.*, 2002).

Q2) What will be the relationship between age and attitudes towards foreign retailers' products in terms of usage frequency?

Q3) What will be the relationship between education level and attitudes towards foreign retailers' products in terms of usage frequency?

Q4) What will be the relationship between age and consumer ethnocentrism?

Q5) What will be the relationship between education level and consumer ethnocentrism?

2.4. Influence of Consumer Ethnocentrism on Attitudes towards Foreign Retailers' Products

Consumer ethnocentrism (Shimp and Sharma, 1987) is one of the factors that can influence the willingness of the consumer to purchase foreign made products and product judgment of foreign products.

Consumer ethnocentrism derives from the more general construct of ethnocentrism, which in turn is rooted in a belief that one's own group (the in-group) is superior to other groups (out –groups) (Adorno *et al.*, 1950). Shimp and Sharma (1987) explained consumer ethnocentrism as beliefs held by consumers about the appropriateness or morality of purchasing foreign products. The study on consumer ideologies such as ethnocentrism, nationalism, and patriotism posits that precisely because of the 'shrinking globe' and the more and more interconnected world; consumers are increasingly concerned with their cultural, national and ethnic identities which subsequently affect their consumption motivation (Burton, 2002; Quellet, 2007). Shimp and Sharma (1987) applied this social phenomenon of ethnocentrism to the study of consumer behavior and described an economic form of ethnocentrism 'consumer ethnocentrism' and used a measurement instrument, the CETSCALE, to evaluate this attitude. Previous studies of Shimp and Sharma (1987) indicated that high ethnocentrism scores are related to reluctance to purchase foreign products and tendencies to evaluate them negatively.

Q6) Is there a consumer ethnocentrism between respondents? If so, what is the relationship between consumer ethnocentrism and attitudes towards foreign retailers' products in terms of usage of them? And how are the effects of age and education levels on consumer ethnocentrism?

3. Research Methodology

A questionnaire that includes 18 different questions was applied to 50 people in three different cities in Turkey (Denizli, İzmir and Fethiye), in October 2009. Consumers were randomly selected and it was aimed to apply the questionnaire to different age groups. The questionnaire was filled in by the respondents in the presence of an interviewer. This took approximately 5 minutes. There are 5 open-ended questions about products that aim to determine which brands are used by the consumers. And also, there are 13 different closed-ended questions in the research questionnaire.

The questionnaire consists of three parts. In one part, it was aimed to determine the demographic characteristics by asking gender, education level, age and how much the respondents spend in a month.

To determine the education level, four options that include primary education, high school education, university education and post graduate education were presented to respondents.

And there are four options that include 0-200 YTL, 201-500 YTL, 501-1000 YTL and 1001-above YTL to determine how much they spend in a month.

In another part, it was aimed to determine usage of foreign products in real life. For this, at first, it was asked to respondents which brands they use for their cola, jeans, white goods, and pasta and chocolate preferences. Again in this respect, the frequency of foreign products usage was asked to respondents.

In the last part of the questionnaire, it was aimed to determine the thoughts about the foreign products. In this respect, these questions were asked ; Whether they think guilty when they buy a foreign product, whether they like having a foreign product, whether they prefer domestic products rather than foreign ones when they meet with the same situation in the matter of quality and price, whether they encourage to their near surroundings about buying domestic products, whether they think that the foreign products are more qualified

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than domestic ones, whether they think that the foreign products are more expensive than domestic ones, whether they think that foreign products have better after-sale service than domestic ones, whether they think that they contribute Turkish economics when they purchase domestic products.

With these questions, ordinal scale was used. And participants were instructed to rate these questions a 5 point Likert scale (1=absolutely disagree and 5= absolutely agree). When asking these questions, the main aim was to determine whether there is a consumer ethnocentrism among the respondents.

After applying the questionnaire to 50 people, the data was entered to SPSS program and evaluated with some statistical analyses which will be explained in the findings part of the research paper.

4. Findings

4.1. Profile of the Participants

Table 1 demonstrates the demographic profile of the sample. Gender, age, education level and how much the respondents spend in a month generate the sample's characteristics. The research included 17 men (%=34) and 33 women (%=66). The minimum age was 17 and the maximum age was 68 while the mean age was 28.34. Most of the sample was between 20 and 25 age range (n=33, %=66). Most of the participants had university degree (n=35, %=70). And also, most of the participants spent 201-500 YTL in a month (n=23, %=46).

Table 1: Demographic Profile of the Respondents

	Demographics	N	%
Gender	Men	17	34
	Women	33	66
	Total	50	100
Age	19 and younger	3	6
	20-25	33	66
	26-40	5	10
	41-71	9	18
	Total	50	100
Education	Primary education	8	16

	High school	5	10
	University	35	70
	Post graduate	2	4
	Total	50	100
How much they spend in a month	0-200	11	22
	201-500	23	46
	501-1000	9	18
	1001-above	7	14
	Total	50	100

4.2. Attitudes towards Foreign Retailers' Products

To determine foreign products usage in real life, the participants were asked which brands they use in their cola, jeans, white goods, and pasta and chocolate preferences. By looking at the results, for each person it was computed how many products they use are foreign. Table 2 demonstrates the frequency and percentage of how many products they use are foreign. Also the results were referred to usage of foreign products in real life.

Table 2: Usage of Foreign Products in Real Life

	N	%
0	5	10
1	13	26
2	15	30
3	12	24
4	5	10
Total	50	100

0: No usage of foreign products / 1: One of the products is foreign / 2: Two of the products are foreign

3: Three of the products are foreign / 4: Four of the products are foreign

According to this table, 90% of the participants prefer foreign products for at least one product group (The product group includes cola, jeans, white goods, pasta and chocolate). And it is possible to say that foreign products usage is very common among respondents. In this respect, as Table 3 demonstrates, the respondents were also asked how often they purchase foreign products.

Table 3: Purchase Frequency of Foreign Products

	N	%
Never	3	6
Rarely	6	12
Sometimes	14	28
Often	26	52
Always	1	2
Total	50	100

As it is seen from the table, the purchase frequency of foreign products is generally very common in respondents' real life. By looking at both Table 2 and Table 3 results together, it is possible to say that there is a high tendency to purchase and use foreign products among respondents.

Again in this respect, a correlation analysis was performed to determine the relationship between age and purchase frequency of foreign products. As a result, there is a negative correlation between them at 0.01 significance level. In other words; when the respondents' ages increase, purchase frequency of foreign products decrease. Table 4 demonstrates this.

Table 4: relationship between age and purchase frequency of foreign products

		Age	Purchase frequency of foreign products
Age	Pearson correlation	1	*,596**
	Sig (2-tailed)		,000
	N	50	50
Purchase frequency of foreign products	Pearson correlation	-,596**	1
	Sig (2-tailed)	,000	
	N	50	50

**p<0.01 (2-tailed)

Also as Table 5 demonstrates, education level created a difference in terms of purchase frequency of foreign products at 0.05 significance level. The analysis was performed

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through independent t-test and because most of participants have primary education degree and university degree, they were grouped in the analysis.

Table 5: Differences on Purchase Frequency of Foreign Products Created By Education Level

	Primary Education		University	
	N	Mean	N	Mean
Purchase frequency of foreign products	8	2,1250	35	3,6286

p<0.05

As a result, the participants who have primary education degree have a lower tendency to purchase foreign products with respect to participants who have university degree.

To determine consumer ethnocentrism, the participants were given 8 opinions which are presented Table 6. And the participants were instructed to rate these options a 5 point Likert scale. Table 6 demonstrates descriptive-of-agreement to these opinions.

Table 6: Agreement to Opinions Which Aim At Determining Consumer Ethnocentrism

Opinions	N	Mean	Std. Dev.
I prefer domestic products rather than foreign ones when the quality and price are the same	50	4,32	0,91333
I think foreign products are higher quality than domestic ones	50	2,76	1,02140
I think foreign products are more expensive than domestic ones	50	3,78	0,99571
I think foreign products have better after-sale service than domestic ones	50	2,82	0,98333
I do not like the idea about having foreign products	50	2,72	1,12558
When I buy a foreign product, I feel guilty	50	2,50	1,24949
I encourage my near surroundings in the matter of buying domestic products	50	3,46	1,03431
I contribute something to Turkish economics by buying domestic products	50	4,20	0,75593

And index was generated by computing all the opinions. The index was subjected to one sample t-test where test value is 3. As Table 7 demonstrates, it is possible to say there is a consumer ethnocentrism among the respondents at 0.05 significance level.

Table 7- ethnocentric opinions (index) statistics

	N	Mean	Std. Deviation
Index	50	3,4250	0,52245

$p<0.05$

Ethnocentric opinions (index) were compared with foreign product usage in real life through correlation analysis. As a result, there is a negative correlation between them at 0.01 significance level. In other words, as it is seen from Table 8, while ethnocentric opinions increase, the usage of foreign products decreases.

Table 8: Relationship between Ethnocentric Opinions and Usage of Foreign Products

		Usage of foreign products	Index
Usage of foreign products	Pearson Correlation	1	-,410**
	Sig (2-tailed)		,003
	N	50	50
Index	Pearson Correlation	-,410**	1
	Sig (2-tailed)	,003	
	N	50	50

**$p<0.01$ (2-tailed)

As Table 9 indicates, education level creates a difference in terms of ethnocentric opinions at 0.05 significance level. Because the research mostly included participants who have primary education degree (n=8) and participants who have university degree (n=35), these were subjected to independent t-test. As a result, the respondents who have primary education degree have more ethnocentric opinions.

Table 9: Differences on Ethnocentric Opinions Created By Education Level

	Primary education		University	
	N	Mean	N	Mean
Ethnocentric opinion	8	3.75	35	3,3179

p<0.05

To determine the relationship between age and ethnocentric opinions, correlation analysis was conducted. As Table 10 indicates, there is a positive correlation between age and ethnocentric opinions at 0.05 significance level. In other words, while the respondents' ages increase, ethnocentric opinions increase.

Table 10: Relationship between Age and Ethnocentric Opinions

		Age	Ethnocentric opinion
Age	Pearson Correlation	1	0.360*
	Sig (2-tailed)		0.010
	N	50	50
Ethnocentric opinion	Pearson Correlation	0.360*	1
	Sig (2-tailed)	0.010	
	N	50	50

*p<0.05 (2-tailed)

The research paper also tried to determine foreign product judgments in terms of quality, price and after-sale service. For this, a correlation analysis was conducted at 0.05 significance level. According to the results, a positive correlation was found between foreign products' after-sale service and foreign product purchase frequency in real life. As Table 11 demonstrates, because the participants perceive foreign products as having better after-sale service rather than domestic ones, they prefer to buy foreign ones.

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Table 11- Relationship between Foreign Products After-Sale Service

And Purchase Frequency of Foreign Products

		Purchase frequency of foreign products	Thinking that foreign products have better after-sale service
Purchase frequency of foreign products	Pearson Correlation	1	,352*
	Sig (2-tailed)		,012
	N	50	50
Thinking that foreign products have better after-sale service	Pearson Correlation	,352*	1
	Sig (2-tailed)	,012	
	N	50	50

*p<0.05

5. Conclusion and Discussion

Turkey has been a very attractive country for many foreign retailers. In this respect, it is important for foreign retailers to understand the behaviors of Turkish consumers in terms of attitudes towards foreign products. To have a better understanding of attitudes towards foreign products, this research was conducted among Turkish consumers. 50 respondents were counted in the research. In the first part of the research, it was aimed to determine demographic characteristics of consumers in terms of gender, education level, age and how much they spend in a month. Most of the sample was between 20 and 25 age range. And also most of the participants indicated that their spending in a month is between 201-500 YTL. Lastly, the research generally included participants who have university degree. In the second part of the research, it was aimed to determine foreign products usage and purchase frequency in real life. As a result, the participants have a high tendency to buy and use foreign products. In the third part of the research, it was aimed to determine whether there is a consumer ethnocentrism among the respondents by asking them evaluate 8 opinions related to ethnocentrism. As a result, it was determined that there is a consumer

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ethnocentrism among the respondents. Additionally, some analyses were conducted to determine the relationships. Correlation analysis was done to determine the relationship between consumer ethnocentrism and usage of foreign products in real life. As a result, while ethnocentric opinions increase, usage of foreign products decreases because of the negative correlation in the analysis. According to independent t-test conducted between education level and ethnocentric opinions, the respondents who have primary education degree have more ethnocentric opinions with respect to participants who have university degree. According to another correlation analysis which aimed at determining the relationship between age and ethnocentric opinions, while the respondents' ages increase, ethnocentric opinions increase. Lastly, to determine the relationship between purchase frequency of foreign products and foreign product judgments in terms of quality, expensiveness and after-sale service, a set of correlation analyses were performed. According to the results, there is positive correlation between purchase frequency of foreign products and their after-sale service. In other words, because participants think that foreign products have better after-sale service, they have tendency to buy foreign products.

When the research paper is examined entirely from managerial perspective, it may be helpful for the international retailers which will select Turkish consumers as their target group. Because negative evaluations and perceptions, which are related to country of origin stereotyping, create considerable market barrier (Schooler, Wildt and Jones, 1987).

According to the results, there is a consumer ethnocentrism among Turkish respondents, and this depends on age and education level. And also, these different age groups, different education level create differences on usage of foreign products. So that, international retailers consider these results thoughtfully. These research results can be helpful for international retailers when doing demographical segmentation in terms of age, income level and education level. In this respect, these retailers should rearrange their marketing mix that includes product, price, promotion and place to adapt Turkish consumers who they select as a target group, to their products. Also when rearranging marketing mix, the retailers should mostly attach importance to communication strategies. Because most of marketing experts think communication strategies as a key element to attract different customer groups. Additionally, for these communication strategies international retailers

should attach importance to provide local products to consumers. At the same it can be useful to employ local workers and managers to understand consumers and communicate with them better.

As a result, the firms may evaluate the marketing researches like this one and they may do market researches on their own to determine characteristics of the market and to determine their marketing mix and communication strategies once more.

6. Limitations and Future Research

This study has limited capacity in terms of some reasons. These reasons may be put in order like this; the research was applied only 50 respondents so more respondents should be counted in future researches. It was applied only in Aegean region so future researches should evaluate the respondents from the other regions in Turkey. And also, different age groups, different participants who have different income level, different education levels should be counted in future researches. They will be useful for international retailers to evaluate Turkey entirely and understand consumer behavior clearly.

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Adoption of Customers of M-Banking Services : Iranian Perspective

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Abstract

Risk identification is the first stage of risk management. It develops the basis for the next steps: analysis and control of risk management. Correct risk identification ensures risk management effectiveness. If risk managers do not succeed in identifying all possible losses or gains that challenge the organization, than these non-identified risks will become non manageable and will faces the system with critical hazards. In recent years mobile banking becomes one of the most challengeable and risky field in mobile commerce. Mobile banking (also known as M-banking) is the term used for performing balance checks, account transaction, payment etc. via a mobile device such as cell phone. It is now spreading fast across the world, in developed and developing countries and is relatively new. As a consequence, the knowledge of the risks and the risk experience of providers are still limited and there is vital need to investigate these risks. In this paper, we attend to identify the aspect of mobile banking in Iran as a step towards the risk management in this issue. A questionnaire will be applied to certain statistical society of Iranian customers in order to analysis on some attributes such as convenience of usage, accessibility, features availability, speed and security.

1. Introduction

In the contemporary world, the risk management has gained attention and extensive study in most of countries. Risk identification is the first stage of risk management which follows by risk analysis and control. If risk managers do not succeed in identifying all possible

losses and gains that challenges the organization, then these not-identified risks will become non manageable and may cause the organization face critical hazard. Especially in the case of professional banking, risk managements are such valuable that most of these systems monitor and study their applied approach in risk managing fields regularly and precisely. Lack of adoption of offered new services in mobile banking by customers is one of the important risks in banking fields. Lack of attention to this risk may lead to serious financial harms and damages.

In most of developed countries, the modern styles of banking have been substituted by traditional ones. for instances most of banking services provided through ATM machines or internet services which is called electronic banking, are being used by people widely and these services could reduce the customer attendance in banks, Nowadays the Electronic banking has crucial role in banking industries and these role has been considered broadly in banking literature. The challenges of this industry in one hand and the entrance of business in integrated markets which has capabilities of mobile and wireless communication in the other hand, lead the customers to use mobile banking services on their cell phones. Mobile banking is a sort of service which is based on Short Message Services (SMS) use the wireless communication services which is also applicable by special software on the cell-phones. The mobile banking environments are getting more and more implicated gradually, New and innovative ideas in mobile banking can lead to useful and effective approaches and models in business transactions, especially in requirements elicitation, service provider's recognition, negotiation and agreements. In this paper Iranian banking test bed has been investigated, current Iranian social and economical troubles highlight the vital role of mobile banking in Iranian banking industries and for these reasons the Iranian banks are attempting to detect their daily customer needs for providing more effective and updated services. These problems include low rates of economizing, shortages of energy sources, Heavy traffic, high cost of production and services, broker existence , expensive room for work-offices, relying on domestic markets excessively, lack of accessibilities to international markets, foreigner rivals entrance into domestic market and finally lack of efficient administrative system.

In spite of the significant impacts of mobile banking on customer's behavior, there are limited researches in customer relationship management of mobile banking. in order to achieve high degree of customer adoption of specific banking services, a bank should consider and satisfy chief customer needs. Consequently the customer satisfaction can be mentioned as an expressive criterion for evaluating of the bank success. This paper attempts to facilitate improvement of mobile banking services through investigating the customer adoption. In addition, it will discover the relationship between functional parameters consist of usage, accessibility, speed, security and personal features including age, education, gender, income, internet usage , attention to advertisements and finally the risk taking. It's important to mention the respondents under study are limited to Iranian customer of Iranian banks.

The paper begins with an introduction to mobile banking and the necessity of investigating the customer adoption for it followed by a brief literature review. In the next section our definition for customer resistance and adoption are clarified. Then applied data and method are explained the result reported and discussed. Finally conclusion and suggestions for future research are presented and possible limitations of the study considered.

2. Literature Review

Customer adoption has been used widely by researchers as a criterion for evaluating the function of an information system. For instance in (Doll, W.J. and Torkzadeh , G. 1991), the customers satisfactory of presented information in web sites has been studied. Furthermore (Doll, W.J. and Torkzadeh, G.1988) has investigated the key factors affecting the customer adoption such as transaction costs, quality of services and ease of access.

In 2006, some more studies were done to explore consumer value in mobile banking and in mobile bill paying. Especially by using a well-known clustering algorithm called K-means (Tommi Laukkanen and Teuvo Kantanen 2006). It was measured in the context with five items namely privacy, accuracy, convenience, control and efficiency. The relationship between some consumers attributes such as ages, gender and their incomes and their usage of these electronics services has been investigated. Although the K-means algorithm was

used for automatic clustering of consumers, but analyzing of the users features was done manually, the consumers under study include the users of Scandinavian Bank.

Another study In 2007, attends to explore bank customers' varying reasons for resisting mobile banking services which was measured with five barriers namely usage barrier, value barrier, risk barrier, tradition barrier and image barrier and used k-means algorithm for customer clustering in order to efficient analyzing of their resistance reasons (Tommi Laukkanen, Suvi Sinkkonen, Marke Kivijärvi, Pekka Laukkanen, 2007).

Although lots of researches have been done on mobile banking field, to our best knowledge, automatic analyzing of customer personal features impacts on adoption of mobile banking services has been rarely investigated. Therefore in this paper we concentrate on this narrow field. We applied data mining techniques to achieve this aim. The scope of this research includes adoption of all Iranian banks' services.

3. Customer Resistance and Adoption of Innovations

One of the major causes for market failure of innovations is the resistance they meet among consumers (Doll, W.J. and Torkzadeh, G. (1991).While a majority of studies have focused on the success of innovations and reasons to adopt, the theory of innovation resistance aims to explain why customers resist innovations. We introduce adoption in terms of usage, accessibility, speed and security. In our point of view these functional parameters depend on some individual characteristics include gender, age, income, educational degree, internet usage and attention to advertisements. The definition of mentioned parameters follows in the next paragraph:

- **Usage**

In this research, for analyzing this parameter, we presented a list of all provided mobile banking services to the users and studied the degree of usage for these services separately in order to obtain precise results.

- **Accessibility**

This factor was studied widely, in one hand the time and location aspects of accessibility were considered and on the other hand the corresponding tools which

contains cell-phone hardware capability and availability of needed software installation for using services. The last aspect for this parameter is the rate of network disconnecting and system failures.

- **Speed**

for measuring user adoption of this factor, responders have been asked for their insight about the speed of both software tools and network infrastructures.

- **Security**

we investigate the probability to which customers estimate unauthorized access to their personal information during the service usage and the influence of system failures to information security and privacy from the users' point of view.

4. Material and Methods

In this section we first explain the implemented approach to collect the data used for research and describe features of it. Then methods applied for analyzing the data will be presented.

4.1. Data

The required data for the current research have been provided through a specific questionnaire that some of its sample questions are mentioned in table 1. These questions are designed according to definition of five parameters mentioned before. The responses to each question include five options which demonstrate the degree of agreement with it.

Table 1. Sample questions for measuring customer adoption

Sample Questions	Degree of Agreement				
How much do you use this service?(usage)	1	2	3	4	5
How much do you access to this service in anywhere and anytime of the day?(Accessibility)	1	2	3	4	5
How much are you satisfied with the speed of this service?(speed)	1	2	3	4	5
In your opinion how much people could access to your personal information while using this service?(Security)	1	2	3	4	5

The distributions of customers among different personal features were shown in Table2 which reflects the status of statistical society under study. As it's clear in this table, 64.61% of responders are men and the remaining 35.38% is dedicated to women, it is important to make the point that since most of these questionnaires were distributed among the students of universities 75.38% of this community are graduated people. The same reason causes the percentage of customers who are between 20 and 30 exceeds from 75%. The income level of most people was less than 2000000 Rials.[1] Risk taking and internet usage are not concentrated on specific range but distribute nearly uniform over the allowed range. Finally attention to advertisement was found to be average for 50.76% of responders.

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[1] The Rial is the currency of Iran

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Table 2. Demographic profile

Variable	Frequency	Percent
Gender		
Male	42	64.61
Female	23	35.38
Age		
Below 20	1	1.53
Between 20-30	49	75.38
Between 30-40	15	23.07
Income level (monthly)		
Less than Rials , 2000000	36	55.38
Between 2000000- 5000000	15	23.07
Between 5000000 – 10000000	5	7.69
Above 10000000	9	13.84
Education level		
Diploma	7	10.76
Under graduate	9	13.84
Graduated	49	75.38
Risk taking		
Less than 1.5	3	4.61
Between 1.5-3	16	24.61
Between 3-4.5	26	40
Between 4.5-6	20	30.76
Internet usage (daily)		
Less than 1 hour	18	27.69
Less than 2 hours	19	29.23
Between 2 - 4 hours	23	35.38
Above 4 hours	5	7.69
Attention to advertisement		
always	2	3.07
Usually	12	18.46
Sometimes	33	50.76
Rarely		
Hardly	15	23.07
	3	4.61

4.2. Methods

Data mining is the process of extracting patterns from data. Due to the capabilities of data mining in discovering hidden patterns and relations of data, we employ this modern technique in order to finding out the relation between customer adoption in terms of usage, security, speed and accessibility and personal features on the other hand.

Data mining is a general term for wide range of algorithms such as decision tree learning, Bayesian learning and neural networks (Ayahiko niimi and eiichirp tazaki ,1999). Among these algorithms, decision tree learning in addition to extracting the implicit patterns of

data, can provide a clear description of these patterns and relations. In our experiments, the decision trees are generated using classification and regression tree. we have selected it for its ease of use and intuitive output, its wide accessibility, and its robustness in predication.

4.2.1. Decision Tree Construction Algorithm

Decision trees consider static branch prediction as a classification problem Branches are classified into 'taken' and 'not-taken' classes based on a number of Static branch features. A decision tree consists of a number of internal nodes in which each node discriminates on a given branch feature, and in which the leafs Represent the branch classes 'taken' and 'not-taken'. A decision tree can thus beViewed as a hierarchical step-wise decision procedure (Veerle Desmet, Lieven Eeckhout, and Koen De Bosschere, 2005). In our experiments, the decision trees are generated using classification and regression tree. We have selected it for its ease of use and intuitive output, its wide accessibility, and its robustness in predication.

4.2.2. Classification and Regression Tree

Generally, the CART methodology grows a decision tree by recursively partitioning the data into increasingly homogenous subsets until each subset contains a certain number of cases. And based on this constructed tree, the algorithm will prune the decision branches of the tree until a stopping criterion is reached, or a desired level of complexity is satisfied (ling jing kao, chih chou chiu, 2001).

In the other words, CART will find out how every case shows differences from the rest first. And then the prune algorithm will be conducted to find the similarities in the difference. In this research, we used tests with one has a set of independent variables and a single dependent variable. And classification trees will be applied to where the response consists of a discrete member of a finite set, class or category. In this set of analyses we used the Gina index of diversity to define subset impurity and the splitting rule. Besides,

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we limited the depth of the final trees to 100 or less layers. For the purposes of this study, the accuracy of classification tree results was defined as the percentage of correct classification for a particular category.

5. Results

The statistic results of questionnaires can demonstrate the degree of customer adoption in each of parameters generally.

As it is illustrated in table 3, the accessibility factor has the most average of adoption compared to others, after that, the speed and the security of the system have higher means on customers adoption sequentially. The usage parameter, in contrast, devotes a low average of adoption degree to itself. By more detailed study, it can be confessed that majority of customers just use this system for paying the bills. But because of considering adoption of all possible services in questionnaire, the overall usage of services becomes low.

Table 3. Descriptive statistics of the data

ITEM	MEAN	STD DEVIATION
Usage	1.646	0.482
Accessibility	3.646	0.672
Speed	2.215	0.450
Security	1.877	1.256

The decision tree learning was applied on collected data for each functional parameter (i.e. usage, accessibility, speed and security) and one decision tree was gained for each parameter separately which classifies customers to five classes representing the degree of customer agreement to corresponding parameter. It's important to issue that these decision trees have also the capability to predict the degree of customer agreement in the case of new or unseen customers. in order to obtain generalized decision trees, , as it is popular in data mining tasks, we partitioned data to two sets, 70% for train set and 30% for the test

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set. The train set was used for constructing decision trees, and the test set was used for validating it. The achieved average accuracy of decision trees on test set was around 80% which is satisfactory result for a classifier. Figure 1 demonstrates the constructed decision tree for the first parameter, usage. Due to space restriction the decision trees of other parameters were eliminated.
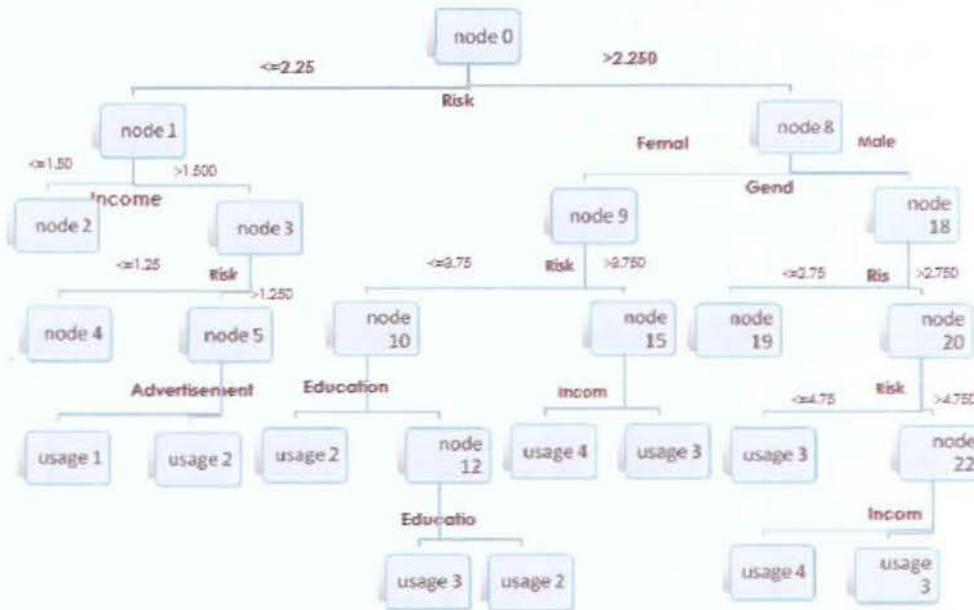
Figure 1. Decision tree of usage

- **Usage**

According to figure 1 it can be mentioned that the men who has high degree of risk taking and has high monthly income, used this service more than other customers, on the other hand the people who has low degree of risk taking and low amount of monthly income, used this system hardly. It's really important to make a point that in our under study scope the banking related tasks is the men's responsibility. Hence, it could be understood that the gender parameter has a high impressive in using of this modern banking services. Also education level and attention to the advertisement had lower impacts rather than risk taking, income and gender on using of mobile banking services.

- **Accessibility**

The customers who are graduated and have high income stated that have more accessibility to mobile banking services on the other hand, it can be mentioned that the customers who didn't have enough education and low income had low accessibility to these services.

- **Speed**

In speed decision tree, the males who had more income in comparison with females who has low amount of income had more satisfaction from the speed of services. This difference could be in consequence of different viewpoints of male and female in definition of speed parameter.

- **Security**

generally, customers who had high degree of risk taking and graduated education, were more satisfied with security of the services. it seems that other personal features are not important and effective enough to be considered in customer adoption of security.

According to decision tree learning algorithm, the more effective and distinctive features appears in higher levels of the tree. As a result form the four decision tree discussed above, the most important features are risk taking, gender and levels of education orderly, as you can see in figure1 for usage. Hence these features have the highest effect on customer adoption which defined in terms of usage, security, speed and accessibility. In contrast, some parameters such as internet usage and attention to the advertisement which were on lower levels of trees are not significant and effective factor for customer adoption.

6. Conclusion

The main objective of this paper was investigating the customer adoption of mobile banking services in Iran. More precisely, why and how customers differ in their mobile banking services adoption according to differences in their personal features.

The research begins with distributing some questionnaire between the customers of mobile banking services, in this questionnaire, people were asked to state their degree of

agreement to four functional parameters of mobile banking services consist of usage, accessibility, speed and security. The questions were considered from previous research in the literature. For discovery of relations and dominant patterns in collected data, we applied data mining techniques and specifically decision tree learning algorithms (i.e. CART). Rather than the statistic approaches, this method have more reliability, accuracy and capability of automatic analyzing of data. In spite of recent researches, the scope of this study is not restricted to special bank or service. The experimental results show that customer adoption of mobile banking services is strongly dependent on the degree of risk taking. In other words people who are more risk taken and innovative prefer to use the new and innovative mobile banking services more than others.

It is important to mention however we attempts to establish a statistic community which can consist of different layers of people and association, the under study community was mostly contain of young college students.

We offer banks to pay attention to potential customers of their innovative services, characterized in this research, and customize the services for better adoption of this group of users. Furthermore they can improve the bank advertisement to enhanced satisfaction of potential customers' requirements.

For future research we plan to concentrate customers' person.al features more near to effective factors gained in the research such as risk taking rather than some irrelevant features like internet usage and attention to advertisement.

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Segmentation of Student Market: A CHAID-based Analysis

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Abstract

In this paper the concept and the importance of market segmentation and target marketing in higher education sector is discussed. The CHAID approach to market segmentation, which visualizes the market segments and also their demographic and behavioral characteristics with the help of decision trees, was outlined.

The CHAID approach to segmentation is then applied to a dataset sourced from the computer science program of a large-scale university. Through the analysis it is attempted to segment the student market of this institution and describe the characteristics of potential high performers.

Given the objective of identifying and targeting students that will most likely succeed in higher education; the results derived may be used to assist in the design of marketing campaigns and admission procedures.

1. Introduction

Wesley Shumar, a professor of anthropology in Drexel University, tried to explain the historical development of higher education sector in his book *College for Sale*. He claimed that the imagination of higher education after World War II and the expansion of baby-boom period produced together an economic boom in higher education. The result was a shift from traditional education approach which created a model beyond previous generations' imagination: The higher education business is a business like any other business, an industry supplying a specific type of service.

When the boost phase showed up in 1970s, enrollments declined and state support started to decrease. Educational institutions dealt with the crisis with the help of recently appeared education approach. While students were defined as customers, enrollment management and marketing became popular practices in universities (1967, p. 61-78).

Slaughter and Rhoades (2004) mentioned another milestone in the history of higher education: Knowledge Revolution. It caused changes in relationship between society and higher education institutions which is labeled "academic capitalism". Academic capitalism

suggested a broader view to the student that is beyond being only a customer. It was offered not only an education service but also a lifestyle.

Today we are discussing about pillars of learning enterprises which are applicable regardless of the type of institution, such as Marketing, Communication with Society, Fundraising, Administration, Facilities and Enrollment Management.

Enrollment Management can be identified as a good example for the purposes of our work. It includes all efforts to recruit the students that will benefit from an institution's educational programs and to retain them until their educational goals are achieved.

According to *Maringe and Gibbs*, "Enrolment is a broad concept that lies at the heart of the marketing effort and orientation of the university. Students are the raison d'être of universities, the most important reason for their existence (2009, p. 148-160)." They distinguished four broad activities under enrollment management. It is needless to say that the first step is seeking the students who enable the university to reach its ultimate goals.

In marketing context, enrollment management includes segmentation, targeting and positioning. "Segmentation involves dividing the market of potential customers into homogeneous subgroups. These sub-groups may be distinguished in terms of their behavior patterns, attitudes, demographic characteristics, psychographic profile, and the like (Sternthal and Tybout, 2001, p. 3-31)." Targeting is choosing the segment(s) that fits best with the organization's objectives and positioning means developing a marketing strategy that appeals to the selected target market(s).

In other words, educational institutions which want to survive in the new age, should divide the market of potential students mostly high school graduates into subgroups. Not only demographic information but also previous performance of students can be relevant determinants of segmentation. The next step is selecting the segment which has a high potential of success. The measure of performance in a higher education institution is principally GPA. The last step is initiating a marketing strategy to attract the students in targeted segment.

With the help of advanced machine learning, it is also possible to analyze the current customer and predict the behavior of the potential customers. It can also be applied to higher education sector. For example a university can specify the potential high performers by mining data in hand.

In this project it is attempted to segment the student market of a higher education institution and describe the characteristics of potential high performers. This knowledge can be used for marketing activities and admission processes.

The structure of the article is as follows: Second part of the article provides information about the dataset used for this study. In the third part, the method applied to analyze data is briefly explained. The next part includes not only the basic findings derived from dataset, but also the results of statistical analysis. In the last part of the article final remarks and limitations of analysis are added.

2. Dataset

Dataset used for this research was prepared by a large university which was interested in understanding why a large proportion of their first year students failed to graduate as computer science majors.

The variables collected included the grade point average after three semesters and a range of variables that would be accessible as students entered their program. These included scores on standardized tests such as the SAT and high school grades in various subjects. The researchers who conducted the study were also interested in investigating differences between men and women in this program. Therefore, gender was included as a variable.

Data on 234 students who began study as computer science majors in a particular year were analyzed. There are eight variables for each student. OBS is a variable used to identify the student. The grade point average after three semesters, which enables us to measure the student's performance, is the variable GPA. This university uses a four-point scale. Because of the difficulty raised from using quantitative dependent variable, the GPAs in the dataset were transformed to letter grades based on following criteria:

Table 1: Letter Grade Transformation Criteria

GPA	GRADE
0-1	F
1-1.7	D
1.7-2.7	C
2.7-3.7	B
3.7-4	A

The high school grades included in the data set are the variables HSM, HSS, and HSE. These correspond to average high school grades in mathematics, science, and English. High school grades were recorded on a scale from 1 to 10, with 10 corresponding to A, 9 to A-, 8 to B+, etc.

The SAT scores are SATM and SATV, corresponding to the mathematics and verbal parts of the SAT. Each section receives a score on the scale of 200–800. The average scores on SAT are reported 515 in mathematics and 501 in verbal part.

Results of the study are also reported in an article written by *P.F. Campbell and G. P. McCabe* (1984). Their work introduced the positive correlation between successful completion of first year and persistence in the major.

3. Methodology Approach To Problem

The dataset introduced in previous part was analyzed to detect the interaction between dependent variable (GPA) and independent variables (HSM, HSS, HSE, SATV, SATM and Gender). After identification of the relatively more important independent variables, the current customers (enrolled students) were classified into subgroups. It was also converted into form of a decision tree. Consequently the characteristics of potential high performers were anticipated by means of classification produced in previous phase.

The method used for whole analysis is Chi-Squared Automatic Interaction Detector (CHAID). According to its developer, *G.V. Kass*, "the technique partitions the data into mutually exclusive, exhaustive, subsets that best describe the dependent variable. The subsets are constructed by using small groups of predictors. The selected predictors may

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then be used in further analysis, prediction of the dependent variable, or in place of the total set in subsequent data collection (1980)."

In other words, CHAID analysis divides the population of interest into sub-groups based on the best predictor of the dependent variable. The analysis then splits each of these groups into smaller sub-groups based on other predictor variables. This splitting process continues until no more statistically significant predictors can be found.

It is an advanced version of AID (Automatic Interaction Detection) designed for a categorized dependent variable. The end product of the analysis is always in the form of a tree diagram.

"In database marketing today, CHAID primarily serves as a market segmentation technique. The use of CHAID in the proposed application for interpreting a logistic regression model is possible because of CHAID's salient data mining features. CHAID is eminently good in uncovering structure, in this application, within the conditional and unconditional relationships among response and predictor variables. Moreover, CHAID is excellent in graphically displaying multivariable relationships; its tree output is very easy to read and interpret (Ratner, 2003, p. 124-141)."

Before proceeding to decision trees, it would be also worthwhile to mention the strengths and weaknesses of CHAID (Government Social Research, 2010):

Table 1: The strengts and weaknesses of CHAID

STRENGTS	WEAKNESSES
• Identifies those characteristics that are key to explaining the variation in responses to the target variable • A tree diagram is produced showing the order and magnitude of effect • Related to regression but where the independent variables are categories • Has visual impact	• Does not work well with small sample sizes as sub-groups can quickly become too small for reliable analysis • May be difficult to determine whether CHAID analysis is most appropriate statistical technique to use

The most important feature of CHAID is its visual impact gained through tree diagram which is a specific type of graph. There are two basic types of tree diagrams in statistical context: Regression and Classification Trees (Hastie, Tibshirani and Friedman, 2001, p. 266-279). Decision trees are combination of regression and classification trees and perform multi-level splits.

"There are many different learning algorithms that have been developed for supervised classification and regression. These can be grouped according to the formalism they employ for representing the learned classifier or predictor: decision trees, decision rules, neural networks, linear discriminant functions, Bayesian networks, support vector machines, and nearest-neighbor methods. A learning decision tree is one of the most versatile, most efficient, and most popular machine learning algorithms. ... A decision tree is a branching structure. The tree consists of nodes and leaves. The root node is at the top of the diagram, and the leaves at the bottom. Each node tests the value of some feature of an example, and each leaf assigns a class label to the example (Dietterich, 2010)."

There are various open source and commercial software which is conducting CHAID analysis and preparing decision trees. In this work, XLSTAT that is data analysis and statistical solution add-in for Microsoft Excel was utilized.

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After organizing the dataset, the dependent variable (GPA) and independent variables (HSM, HSE, HSS, SATV, SATM and Gender) were selected. With the help of classification and regression trees toolbox, the demanded method (CHAID) and measure (Pearson Chi-square) were specified. Maximum tree depth was restricted as "4". Minimum parent size and minimum son size were entered "1". Significance level was set at "0.05". The value of the merge and split significance threshold was also 5 %. The maximum number of intervals generated during the discretization of the quantitative explanatory variables using univariate partitioning by the Fisher's method was at its minimum level (2).

While configuring the output of CHAID Analysis, both bar and pie charts are available in XLSTAT. However, bar chart was preferred because of its visual clarity. On the other hand, XLSTAT gives user the opportunity to reach descriptive statistics, correlations between variables, node frequencies, results by object and confusion matrix in table format.

4. Results

This study investigated which independent variables are more correlated with higher education performance to be able to determine the market segments that should be focused on.

Firstly, it will be carried out a basic analysis on the dataset used in order to give reader an overview of data.

Approximately half of the students reported B grade, while students with grade C are 32 % of all subjects. It means a density of students placed in the level of upper-middle performers. The following chart shows the exact distribution of student's GPAs:
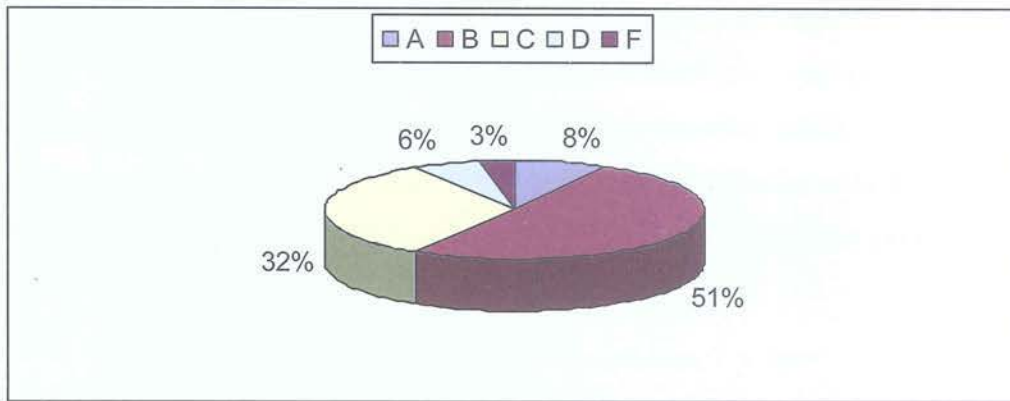
Figure 1: GPA Distribution in Dataset

If we study the distribution of high school notes, we will detect that majority of university students had above average grades in high school. This can be interpreted as the result of selective admission procedures.

Table 2: Distribution of High School Notes

	HSM	HSS	HSE
Insufficient	5	7	9
Sufficient	4	9	5
Good	44	57	49
Very Good	98	92	108
Excellent	83	69	61

It is also informative to mention the minimum-maximum level, the mean and the standard deviation of each quantitative independent variable. It can be observed that they slightly differ from actual minimum and maximum levels of variables.

Table 3: Independent Variables

Variable	Minimum	Maximum	Mean	Std.
HSM	2.000	10.000	8.538	1.559
HSS	3.000	10.000	8.244	1.690
HSE	3.000	10.000	8.235	1.597
SATM	300.000	770.000	598.979	78.944
SATV	285.000	760.000	511.496	93.291

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The only qualitative independent variable in dataset is gender. The male and female students were equally distributed in dataset. The size of each gender is 117 subjects. Even though the relationship between gender and university performance will be analyzed on the basis of CHAID in subsequent part, simple statistical results concerning above mentioned relationship are presented here:

Table 4: University performance of male and female subjects

	Male	Female
A	11	7
B	51	68
C	42	34
D	8	6
F	5	2

The intensity of male subjects is higher for each grade level except for B. The number of female students who obtained at least B is higher than male counterparts. However, the same presumption is not true for A. Therefore; female students can be classified as upper-medium level performers, while the dispersion of male subjects is much more complex.

After examining the structure of dataset, the results of CHAID Analysis can be expressed. XLSTAT created a tree structure which can be summarized in the table 6. Because of the size of the original tree derived from analysis, a compressed version is placed here. Besides a comprehensive table of node frequencies are attached to the end of paper.

Based on tree structure developed by CHAID Analysis, the market was divided in three segments:

- **Segment 1** includes the students who perform well and obtain at least a GPA of B. Surely this segment will be the target segment of university because of its high performance level. Not only in the short run but also in the long run, the university will derive benefit from their success.
- **Segment 2** takes in average performers whose GPAs are C. This segment will not be considered as the target group; however average students are also admissible.

- Low performers with D and F grades will form the **third segment** of the market. An institution which aims to educate successful graduates, should avoid accepting an applicant in this segment.

The decision tree is visualizing the classification and concretizing the features of each market segment with the help of independent variables:

- If a student's high school notes in mathematics, science and English is above 7.5, this potential university student's GPA will be most probably A or B. In other words, the segment 1 will enclose the students who were above 7.5 in most subjects in high school. (Nodes 26 & 27)
- Students whose high school mathematics and science performance were above 7.5 but English performance was below 7.5 make up the first sub-group of second segment. (Nodes 24 & 25) Mathematics grade above 7.5 and science grade below 7.5 will lead a student into the second sub-group of second segment. (Nodes 18 & 19 & 20 and 21) The third group will include the students with mathematics grade below 7.5 but SAT Mathematics score above 605. (Nodes 12 & 13)
- The last and untargeted segment is formed by students whose high school mathematics performance is below 7.5 but also SAT Mathematics performance is under 605. (Nodes 8 & 9 & 10 and 11)
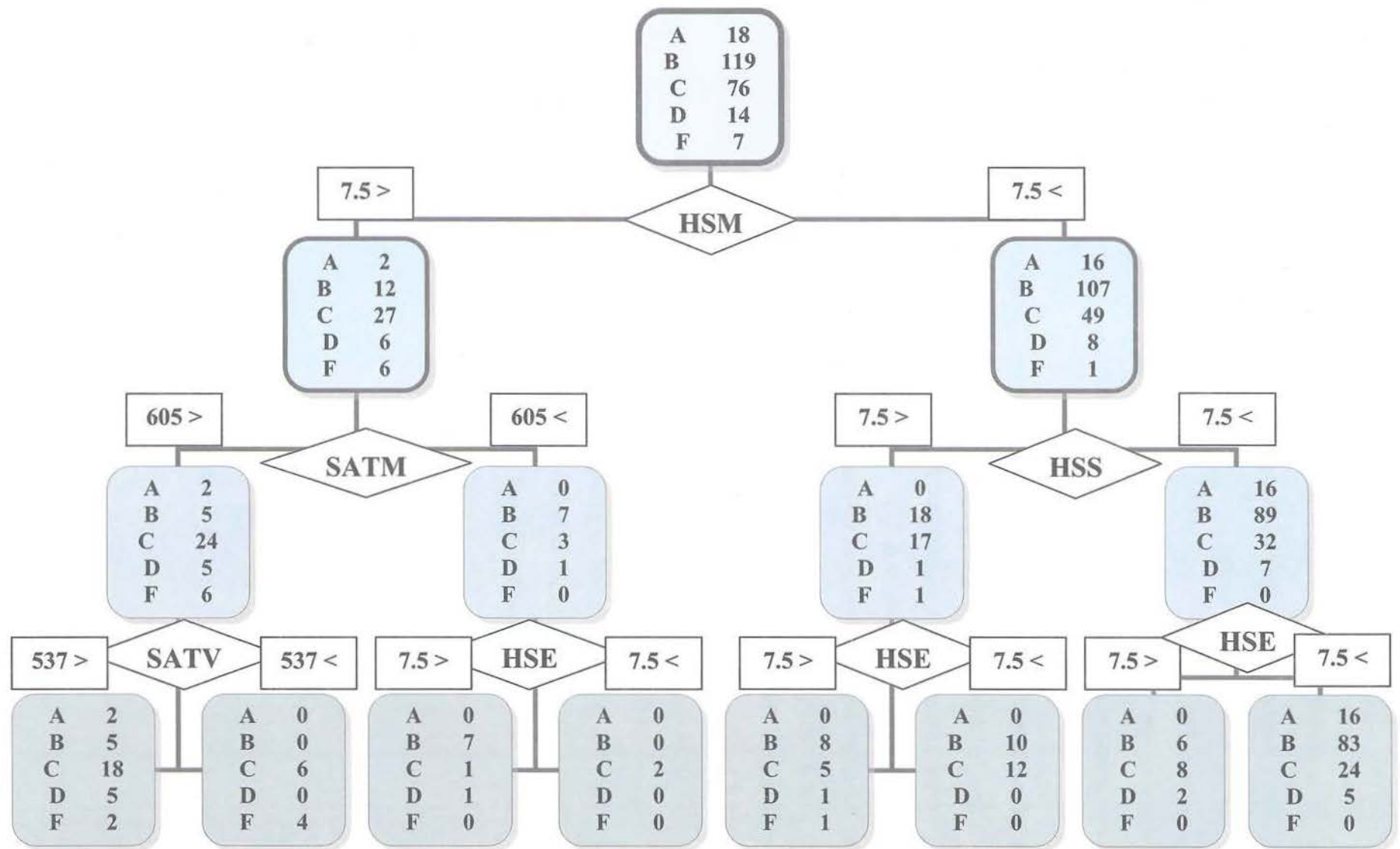
Figure 2: A brief version of decision tree

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Table 5: Tree Structure

Node	p-value	Objects	%	Parent	Sons	Split	Values	Purity
1	0.287	234	100.00%		2, 3			50.85%
2	0.363	53	22.65%	1	4, 5	HSM	[2, 7.5[	50.94%
3	0.206	181	77.35%	1	14, 15	HSM	[7.5, 10[	59.12%
4	0.342	42	17.95%	2	6, 7	SATM	[300, 605[	57.14%
5	0.647	11	4.70%	2	12, 13	SATM	[605, 710[	63.64%
6	0.358	32	13.68%	4	8, 9	SATV	[285,	56.25%
7	0.408	10	4.27%	4	10, 11	SATV	[537.5,	60.00%
8	0.000	22	9.40%	6		HSS	[4, 7.5[	63.64%
9	0.000	10	4.27%	6		HSS	[7.5, 9[	40.00%
10	0.000	5	2.14%	7		HSE	[5, 7.5[	60.00%
11	0.000	5	2.14%	7		HSE	[7.5, 10[	80.00%
12	0.841	9	3.85%	5		HSE	[4, 7.5[	77.78%
13	0.000	2	0.85%	5		HSE	[7.5, 10[	100.00%
14	0.247	37	15.81%	3	16, 17	HSS	[4, 7.5[	48.65%
15	0.221	144	61.54%	3	22, 23	HSS	[7.5, 10[	61.81%
16	0.358	15	6.41%	14	18, 19	HSE	[3, 7.5[	53.33%
17	0.467	22	9.40%	14	20, 21	HSE	[7.5, 10[	54.55%
18	0.000	6	2.56%	16		SATM	[540, 595[	66.67%
19	0.000	9	3.85%	16		SATM	[595, 770[	44.44%
20	0.000	10	4.27%	17		SATM	[450, 605[	80.00%
21	0.000	12	5.13%	17		SATM	[605, 690[	66.67%
22	0.410	16	6.84%	15	24, 25	HSE	[6, 7.5[	50.00%
23	0.151	128	54.70%	15	26, 27	HSE	[7.5, 10[	64.84%
24	0.000	14	5.98%	22		SEX	Male	57.14%
25	0.000	2	0.85%	22		SEX	Female	100.00%
26	0.000	43	18.38%	23		SEX	Male	55.81%
27	0.000	85	36.32%	23		SEX	Female	69.41%

Other valuable results of the analysis are as follows:

- The predictive powers of college entrance tests especially SAT scores in relation to college performance appeared to be limited.

- Among sections of SAT, mathematics seems to have more predictive power.

- Overall high school achievement and especially mathematics course grades were identified as effective performance predictors.

- No significant gender differences were found for university performance. Even though one of the last-level splitting (in node 23) was carried out based on gender, this splitting is not creating different segments.

In following table created by XLSTAT, the consistency of segmentation is attempted to be appraised. The amount of true estimations made based on the results of CHAID Analysis is approximately 65 %. Grades A and D is displaying a zero-level reliability, because of the limited size of sample in each group. It should be also reminded that B and C are offsetting the existence of A and D in most sub-groups, respectively.

Table 6: Confusion Matrix for the Estimation Sample

From \ to	A	B	C	D	F	Total	% correct
A	0	16	2	0	0	18	0.00%
B	0	108	11	0	0	119	90.76%
C	0	34	40	0	2	76	52.63%
D	0	7	7	0	0	14	0.00%
F	0	1	3	0	3	7	42.86%
Total	0	166	63	0	5	234	64.53%

5. Conclusion

"Student market segmentation divides prospective students into subgroups with similar characteristics. Recruitment efforts can then focus on student segments similar to the present student body or on other students that might be attracted" (Spiro, 1978). However, the crucial point is determining the powerful segmentation variables.

During the past decades, researchers from different universities tried to identify variables that can be used to distinguish student market segments. Some researchers suggested the effectiveness of using scores from college entrance tests such as SAT. Others reported that mathematics background is more significantly related to student performance in university. Still others indicated that high school performance was a good predictor for student academic achievement in higher education.

In this study, it is found out the relative importance of high school performance especially mathematics grades for university success. Instead of pushing high school graduates to

take SAT which is also time- and money consuming, universities should restructure their admission standards.

A university should channel all its energies into attracting prospective students whose average is above 7.5 in various subjects in high school. Besides, students with below 7.5 math average can prove their success potential through a SAT-M score above 605. Applications submitted by students who reported an average below 7.5 in mathematics and obtained a SAT-M score below 605 should be examined in detail to avoid possible problems in the future.

The present study had several limitations.

- The dataset used for analysis is including only past performance data of students. The existence of demographical data (the age, the nationality, the socio-economic background of students) could have enriched the study presented.

- The dataset consists of students from only computer science major. Analyzing the performance level of students from different programs could have given more realistic results.

- CHAID Analysis is applicable especially for large datasets. The larger the data set, the higher the reliability level of results. Dataset used is not enough large to split into homogenous sub-groups. Through getting access of larger data, the segmentation of student market could have been more trustable.

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Appendix: Node Frequencies

Table 7: Node Frequencies

Node	A	B	C	D	F	A	B	C	D	F
Node1	18	119	76	14	7	7.69%	50.85%	32.48%	5.98%	2.99%
Node2	2	12	27	6	6	3.77%	22.64%	50.94%	11.32%	11.32%
Node3	16	107	49	8	1	8.84%	59.12%	27.07%	4.42%	0.55%
Node4	2	5	24	5	6	4.76%	11.90%	57.14%	11.90%	14.29%
Node5	0	7	3	1	0	0.00%	63.64%	27.27%	9.09%	0.00%
Node6	2	5	18	5	2	6.25%	15.63%	56.25%	15.63%	6.25%
Node7	0	0	6	0	4	0.00%	0.00%	60.00%	0.00%	40.00%
Node8	0	2	14	4	2	0.00%	9.09%	63.64%	18.18%	9.09%
Node9	2	3	4	1	0	20.00%	30.00%	40.00%	10.00%	0.00%
Node10	0	0	2	0	3	0.00%	0.00%	40.00%	0.00%	60.00%
Node11	0	0	4	0	1	0.00%	0.00%	80.00%	0.00%	20.00%
Node12	0	7	1	1	0	0.00%	77.78%	11.11%	11.11%	0.00%
Node13	0	0	2	0	0	0.00%	0.00%	100.00%	0.00%	0.00%
Node14	0	18	17	1	1	0.00%	48.65%	45.95%	2.70%	2.70%
Node15	16	89	32	7	0	11.11%	61.81%	22.22%	4.86%	0.00%
Node16	0	8	5	1	1	0.00%	53.33%	33.33%	6.67%	6.67%
Node17	0	10	12	0	0	0.00%	45.45%	54.55%	0.00%	0.00%
Node18	0	4	1	1	0	0.00%	66.67%	16.67%	16.67%	0.00%
Node19	0	4	4	0	1	0.00%	44.44%	44.44%	0.00%	11.11%
Node20	0	2	8	0	0	0.00%	20.00%	80.00%	0.00%	0.00%
Node21	0	8	4	0	0	0.00%	66.67%	33.33%	0.00%	0.00%
Node22	0	6	8	2	0	0.00%	37.50%	50.00%	12.50%	0.00%
Node23	16	83	24	5	0	12.50%	64.84%	18.75%	3.91%	0.00%
Node24	0	4	8	2	0	0.00%	28.57%	57.14%	14.29%	0.00%
Node25	0	2	0	0	0	0.00%	100.00%	0.00%	0.00%	0.00%
Node26	9	24	9	1	0	20.93%	55.81%	20.93%	2.33%	0.00%
Node27	7	59	15	4	0	8.24%	69.41%	17.65%	4.71%	0.00%

Epidemiologic Modelling and Logistics: A Review

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Abstract
The lethal power of micro agents such as viruses, bacteria has been known since the beginning of civilization. Epidemics caused by these agents have huge impact on populations both socially and economically. In order to foresee the threat and lessen the potential impact of an epidemic, mathematical modelling techniques and epidemiology have become more important day by day. Research works published in mathematical epidemiology provide valuable insights for understanding the potential hazards before they occurs and also have great importance for the mitigation of possible disasters. We finalize our research by highlighting literature gaps and future research directions.

1. Introduction

Infectious diseases have been causing causalities for many thousands of years. Despite the developments in science and medicine, virus based diseases in particular are still posing a threat in some parts of the world. An unusual occurrence of a disease among a population, during a given period is known as 'epidemic'. Epidemics are considered as disasters. More specifically epidemics can be an example for natural (Rutherford and Boer, 1983) or man-made, sudden onset disasters, (Wassenhove, 2006). Like all disasters, an epidemic should be managed in order to lessen the impact among the population. Typical disaster management stages are defined below. These stages were first introduced in National Governors Association in 1978.

Mitigation: before the occurrence of a disaster, namely, an epidemic, activities to reduce impact of or –if possible- to prevent the incidence are included in this stage.

Preparedness: the only difference between this stage and mitigation stage is that, the expectation of a disaster at some future time. In other words, disaster is predicted before its occurrence and related activities performed for minimizing the impact.

Response: this stage includes activities to preserve the life remaining.

Recovery: Includes activities planned for longer time horizon and based on continuous improvements in systems.

Epidemics are caused by an agent which may be a virus, a bacterium, a prion or a fungus. Introduction to a population can be into two ways, either naturally, or intentionally, in other words as a bioterrorist attack. In both cases, it is both unpredictable and usually unavoidable. The joint efforts of those who work in various fields especially, in epidemiology and mathematics, can provide valuable insights for managing such disasters. Some of the studies consider the disease dispersion among population via mathematical modeling; in others effectiveness of control policies are discussed. Others address the economical impact of epidemics. There are also many studies that include economical analysis in order to choose the best policy. Most of the decisions need close coordination involvement between suppliers, governmental and nongovernmental organizations which are authorized in managing the disasters. Thus, a logistical approach on disaster management is needed and as reported by Kovacks and Spen, (2007), logistics is responsible for 80% of the success of a relief operation. This study provides a close overview of epidemiological modeling, and discusses why models are needed. The next section includes modeling steps and an assessment of epidemics from logistics point of view.

2. Epidemiologic Modeling and Logistics

Two important questions related to epidemiological modeling serve 'What if smallpox is reintroduced in to a mostly susceptible population?, and What if another influenza strain dispersed among population which is more lethal than previous? The answer to these questions may not be very comforting. There will be many people suffering and many will be infected. Potential hazard prediction is a way to minimize the impact. Many governments prepare surveillance plans as a preparation for possible disaster(s), including epidemics. These plans provide a starting point for disaster reaction with minimum time loss. These plans enable decision makers, for instance a health minister, to make faster and more efficient decisions. For example, which policy should be implemented, which policy is most likely to stop the epidemic in the shortest time, the levels of additional resources required to implement the policy.

The level of extra resources needed depends on the size of infected population. Infection transmission can be modelled in order to find out the number of infected people. These transmission models are generally supported with epidemiological models. Further details of modeling explained in next paragraphs. In order to build a model, we should develop it step by step. A good example of this is the diagram suggested by Wonham and Lewis is shown in Figure 1, which shows the different stages involved in modeling.
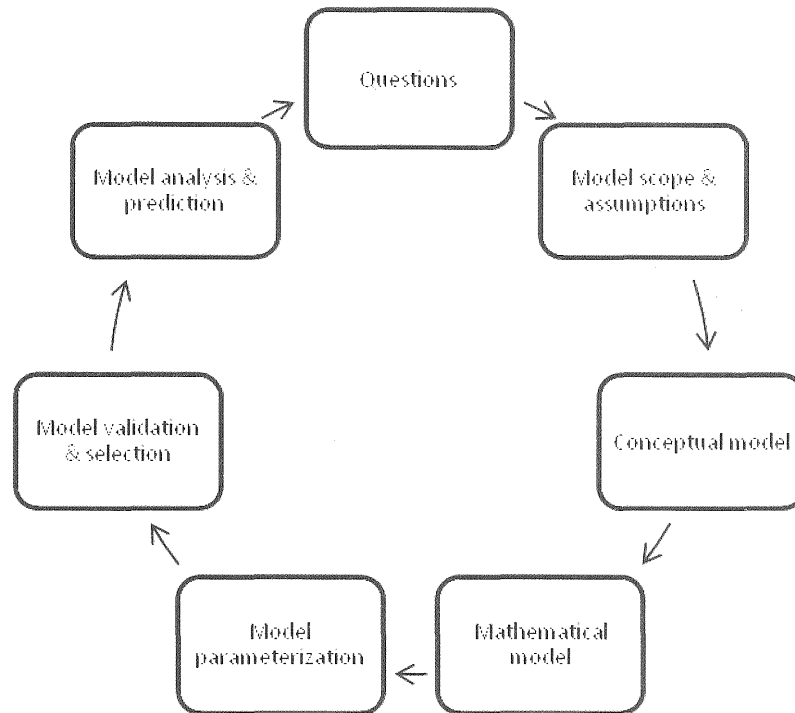
Figure 1 shows Wonham and Lewis's model building steps

In the first stage, we should define the problem(s). After the definition of problem, appropriate research question(s) should be asked, such as what is the dispersion rapidity of a disease? Second, an appropriate framework for model should be drawn. The main considerations here are how population, landscape, time, environment should be represented in this framework. Since not all real life variables and probabilities can be included in the model, we should make some assumptions, which should be clearly defined. For instance, if we assume that contact number is constant, then we also make an assumption of population characteristics, which is homogenous population. Then we begin to visualize our model by using Kermack McKendric's model, shown in Figure 2. This is a basic epidemiological model, which contains three compartments: S for susceptible, I for infected and R for recovered/removed. A susceptible individual is a healthy individual who has the potential for infection. When this individual exposed to agent, he/she becomes infected, and when individuals are infected, they either die, or recover.

More compartments can be added. For instance, adding quarantine and isolation compartments make a model more complex but also more realistic.
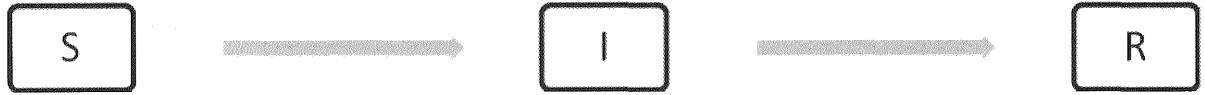
Figure 2: the basic epidemiological model

After designing our model visually, mathematical representation of the model can be constructed. In compartmental modeling, arc represents flows and nodes represent stages. There are some rates assigned on flows represent the transitions from one compartment to another. These rates are represented by Greek letters. Each corresponds to exponentially distributed waiting times in the compartments (Hethcote, 1989). Also these rates are expected to vary from disease to disease. For example, in Figure 2, individuals become infected at a contact rate of β, at time t. Then this individual recovers at a rate of α, thus, stays in I stage with an exponentially distributed mean duration of 1/α. (Brauer, 1984)

Let u(t) denotes the number of individuals that are still invectives' time units after having been infected.

α: is the rate of those who leave I stage in units time;

$$u = u(0)e^{-\alpha t}$$

Length of inf. Period exponentially distributed;

$$\int f(s) = \int e^{-as} \qquad \int_0^\infty e^{-as} ds = \frac{1}{a}$$

After building the mathematical model, parameters should be integrated, in order to run the model. These parameters can be obtained by estimation or can be derived from observed data. If the models output reflects the observed data, the model is validated. Otherwise, rework on the mathematical model is required. Model results include the basic reproduction number, R0 and final size of the epidemic. R0 is an important and wide ranging concept. Thus we (only) make a summary on this concept. R0 defined as the expected number of secondary cases that are generated by one infected individual, in a fully susceptible population. (Halloran *et al*, 2010)

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R0 also acts as an interface between epidemiologic modeling and logistics. In order to undertake capacity planning and take decisions for managing disaster, the need (which replaces demand in this case) should be determined. For instance, without knowing the final size of the infected individuals, capacity planning would not be meaningful. The concept of the epidemiological modeling and decision making process might not seem close to each other. However, Figure 3 shows the connection of three different fields; biology, mathematics and public health, (Chubb and Jacobsen, 2009).
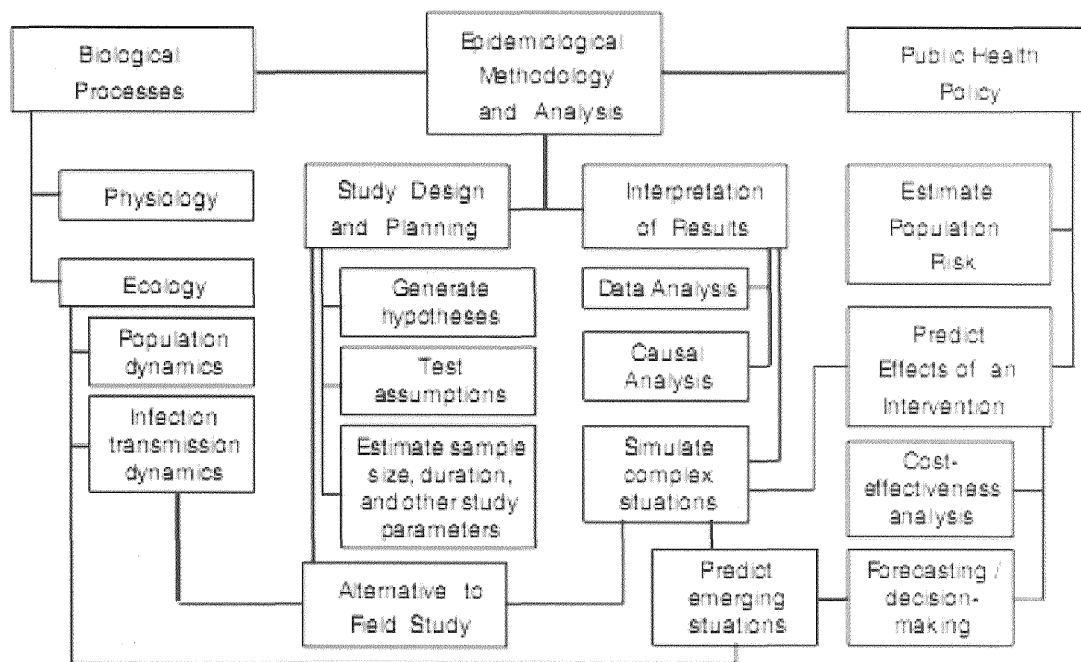
Figure 3

3. Conclusion

All activities performed in forecasting and the decision making stages are considerations of the field of logistics. There is a dynamic flow which begins with determining the final infected and susceptible population sizes. Thus, we also determine needs, in this case, rather than demand. If needs exceeds supply, then we should consider 'make or buy' options to obtain the required supplies. Another challenge is the storage of medical supplies. Distribution of these supplies to the population based on priorities is another topic for decision making science. During the administration of these medical supplies we

should also consider the size of the workforce. For instance, during a mass vaccination, the number of medical staff required should be determined. Also, the numbers of infected people per medical staff should be calculated for an effective intervention. In order to avoid an inadequate response, all of these issues should be planned as far as possible. Turkey constitutes a bridge between west and east and is also located at a crossroads of many international routes, therefore is at risk from many lethal infectious diseases. Therefore, an important question arises; what if instead of dying out, an epidemic creates a disaster? Epidemic modeling is a wide ranging area and Turkey will be a good subject for this science. Unfortunately at present there is very small amount of research that has been conducted. (For future reading, see Koyuncu and Erol, 2010)

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Do Investment Incentives Attract More FDI?

A Regression-Discontinuity Approach

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Abstract

The system of foreign direct investment (FDI) promotion in the Czech Republic provides foreign investors with investment incentives and is characterized by different amount of subsidy according to the individual district unemployment rate. This design is motivated by governmental efforts to stimulate economic growth in more distressed regions. However, critics of such expenditures claim that the impact of incentives is negligible and foreign firms would arrive even in the absence of investment subsidies. The present paper examines the role of the investment incentives scheme in FDI attraction between 2001 and 2007 using Czech district-level data. The identification strategy is based on a regression-discontinuity approach as the scheme design introduces three unemployment thresholds differentiating the amount of the subsidy. The results indicate a positive effect and both economically and statistically significant effect for the first threshold. A shift from ineligibility to eligibility for the incentive scheme presents an increase of future FDI inflow per capita in a district by 8,000 CZK. However, the impact of more generous subsidies for remaining two thresholds is negligible. Among other FDI location factors, a connection to highway network and a common border with EU-15 are the most important.

1. Introduction

Foreign direct investment (FDI) is often regarded as a crucial part of economic development and job creation. This view is supported by empirical studies identifying FDI as an important source of economic growth, unemployment decrease and poverty alleviation (Campos and Kinoshita, 2002; Tondl and Vuksic, 2003). Since the

unemployment rate is looked upon as the main indicator of overall labor market performance, policies to attract FDI rank among important tools of today's policymaking.

In order to promote FDI, governments introduce various public incentives schemes. In the Czech Republic, a systematic approach in FDI promotion was adopted in 2001, providing foreign investors with a possibility to receive a financial subsidy per created vacancy or a retraining subsidy. A fundamental feature of the incentive system is that the exact amount of the subsidy is different across districts, offering higher investment incentives in districts with higher unemployment rate and, thus, motivating investors to locate in more distressed regions.

This paper attempts to assess the impact of an investment incentive scheme on FDI inflow and to estimate its magnitude and economic and statistical significance. Specifically, using aggregate district-level data, we inspect the size of an increase in average FDI per capita inflow caused by the incentive program. The identification strategy is based on a discontinuity represented by an unemployment level threshold which divides districts into several eligibility groups. Districts with the unemployment rate sufficiently close to a cut-off point can be considered as randomly assigned into treatment and control group. Thus, regression-discontinuity (RD) estimation is employed for estimating the jump in per-capita FDI at each threshold. The importance of other factors affecting FDI distribution is analyzed, too. This study, therefore, contributes to a discussion on FDI determinants and helps to discover the appropriateness of fiscal measures for FDI attraction based on the experience of the Czech Republic.

The motivation for this study is threefold. First, the evaluation of the investment incentives impact proposes far-reaching practical implications. Understanding mechanisms behind foreign investors` decision process may improve policymakers` ability to direct FDI inflows into more distressed regions. The topic is highly policy-relevant not only for the case of the Czech Republic but it can be generally applied to any open developed economy. Second, from a social stance it is necessary to assess the efficiency of an incentive system as it absorbs a lot of public money from the state budget. On one hand, FDI inflow contributes to regional development and income growth (Wen, 2007), thereby

improving local labor market conditions, which, in turn, decreases public spending on unemployment benefits and social assistance.[1] On the other hand, huge amounts of state subsidies require substantial budget spending. Thus, a rigorous evaluation of the true impact of the incentive scheme on local labor market is needed in order to compare its costs and benefits. Third, there is a lack of rigorous evaluation literature on investment incentives in case of the Czech Republic, but also in the whole Central European region. This paper presents a highly relevant contribution into a discussion on the role of public policies in attracting FDI by combining a rigorous identification strategy and a policy importance.

2. Literature Survey

There exists a vast empirical literature focusing on FDI determinants yet the research analyzing specifically the role of investment incentives is not numerous.[2] In the case of Central European countries, this is partly given by the initial absence of clear and stable rules for investment incentive schemes and partly by a time delay needed for the analysis of incentives impact.

Empirical studies differ by a focus of their analysis - some concentrate on macroeconomic variables (gross domestic product, inflation, unemployment, price level) while others emphasize institutional (political climate, law enforcement) or location factors (quality of infrastructure, human capital endowment, proximity of target markets). Another segmentation of the research regards a time dimension - studies use either a cross-section of countries or panel data. An advantage of panel datasets is that they allow the identification of important location determinants such as a policy change or agglomeration economies by exploiting a variation over time. Lastly, empirical literature concerning FDI determinants can be divided into between-country and within-country studies depending on

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[1] Knowledge spillovers are an important positive externality of FDI. They occur when domestic firms improve their know-how by technology imitation or knowledge diffusion or when domestic workers increase their skills through training programs in foreign companies (Crozet, Mayer, and Mucchielli, 2004; Javorcik, 2004).
[2] See Bloningen (2005) for a comprehensive survey of literature on FDI determinants.

whether it focuses on an international comparison or a regional analysis within a particular country.

Considering within-country studies, seminal papers on FDI inflow determinants come from the U.S., analyzing localization factors on state and county levels (Carlton, 1983; Coughlin, Terza, and Arromdee, 1991). Analogical studies emerged in other countries such as Brazil (Hansen, 1987) or China (OECD, 2000). These studies focused on the relation between the characteristics of a region and FDI inflow. In the case of the U.S., states with a higher per capita income and higher manufacturing activity attracted FDI while higher wages and higher taxes deterred it (Coughlin, Terza, and Arromdee, 1991). Specific to automotive-related industries, Smith and Florida (1994) find that agglomeration economies matter for Japanese manufacturing plants. New establishments preferred locations in close proximity to Japanese assemblers and higher overall manufacturing density. Surprisingly, contrary to the prevailing literature, higher wages and higher concentration of minorities are recognized as positive and significant determinants of FDI inflow.

Empirical evidence from Portugal (Guimaraes, Figueirendo, and Woodward, 2000) suggests that the strongest FDI location factor is service agglomeration and other significant influences include industry-level localization economies, urbanization economies and the distance from principal cities. On the other hand, local labor costs do not matter in foreign firms' decision process. Basile (2004) investigates the location of FDI in Italy over the period 1986-1999 and claims that the main determinants differ according to the type of foreign entry mode. In case of acquisitions, foreign investors emulate the overall distribution of existing firms and consider high-unemployment regions as less attractive for their location. On the contrary, greenfield investments are not affected by agglomeration economies and view high-unemployment regions as signal of available labor force, thus attracting more greenfield investment. Overall, the author assesses that FDI to the southern part of Italy is below its potential and calls for the implementation of regionally diversified fiscal policies in order to overcome large regional differences in economic growth.

Turning to between-country approach, international studies on FDI determinants help to explain investor's initial decision when choosing a location. Among Central European countries, business environment, labor costs and the form of privatization process have shown to be the most important factors of FDI inflow during transition (Lansbury, Pain, and Smidkova, 1996). Similarly, Bevan and Estrin (2000) find labor costs, the speed of reforms and political signals to significantly affect levels of FDI prior to the EU accession. In a more recent work, Jurajda and Terrell (2009) study regional disparities in post-communist economies and, among other issues, analyze a regional pattern of FDI inflow. They find higher FDI inflow into regions with a high initial capital endowment (measured as a share of college educated people at the end of communism); however, with the exception of Ukraine, this relationship vanishes once the capital city is excluded.

Discussing policies aimed at FDI promotion, studies analyzing public incentives together with agglomeration economies are rather sparse. Crozet, Mayer, and Mucchielli (2004) examine agglomeration effects and regional policies impact on FDI in France and find no evidence of any positive impact of regional policies on location choices. He claims the following factors are important FDI determinants: expected demand on the location (approximated by local macroeconomic factors such as regional GDP per capita or regional GDP growth rate), factor costs and agglomeration of previously located FDI. Similarly, Guagliano and Riela (2005) show a weak, albeit positive, impact of special industrial parks on FDI inflows for a case of Czech Republic, Hungary and Poland. Barrios, Gorg, and Strobl (2006) focus on the role of agglomeration economies and public incentives policy in dispersing FDI into more disadvantaged areas in Ireland and find a positive effect of promotion policy only for low-tech firms during the period of time when a more `laissez-faire' approach to regional policy was introduced.

In case of the Czech Republic, one of rare attempts to address the issue of investment incentives is a study by Valachyova (2005). She finds that FDI inflow into the Czech manufacturing sector has followed the geographical distribution of manufacturing industry at the beginning of transition. In addition, a larger greenfield FDI influx was observed in locations bordering with Germany and Austria and regions with better infrastructure and business services. Also, a positive and statistically significant effect of industry-specific

agglomeration was found. In other words, the location of foreign manufacturing plants is affected by the presence of either domestic or foreign firm in the same industry. However, the issue of investment incentives was tackled only marginally by analyzing FDI determinants on a subset of those firms which were given the incentive subsidy. Results remained significant for infrastructure and foreign firms' agglomeration, implying a limited effect of the investment incentive program. The author concludes that it is difficult for the government to efficiently design an investment incentive scheme. However, she admits that the evidence is somehow limited due to the lack of data and should be interpreted with caution.

3. Institutional Background

Foreign capital flows into the Czech Republic started in early 90s when a system of a centrally-planned economy collapsed. Initially, a governmental stance towards FDI incentives was rather mixed. Soon, a necessity of foreign know-how and technology was recognized and a systematic state support of FDI has begun.[3]

A governmental support of FDI inflow started in 1998, providing foreign investors with an option to apply for a financial subsidy. However, the system lacked transparency and a clear set of predefined rules as decisions about FDI incentives magnitude and regional allocation were fully at the discretion of the government. Therefore, the system was elaborated in 2000, when a formalized scheme of investment incentives was established.[4] Since then, three types of investment incentives have been implemented: the "investment incentives program for the manufacturing sector" (program "M"), the "job creation support program for regions worst affected by unemployment" (program "U") and the "framework program for the support of technology centres and the strategic services" (program "F").

Program "M", which was the first and the largest one, started on May 1st, 2000, providing investors into manufacturing sector with an income-tax relief, job-creation subsidies and

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[3] A government agency CzechInvest was established in 1992 for FDI promotion and administration.
[4] An investment incentive law (no. 72/2000) became effective on May 1st, 2000, defining rules and eligibility conditions for foreign as well as domestic investors. The Czech Republic became the first among Central and Eastern European countries with a clear investment incentive system defined by law.

training and retraining subsidies after meeting certain criteria (these were notably the minimum invested amount and the number of created vacancies - see Table 1 for the detailed overview of these conditions and the changes in the program).

Program "U" started on June 2nd, 2004 and ended on December 31st, 2007. It was motivated by the intention to attract foreign firms to more distressed regions of the Czech Republic. Firms investing at least 10 mil. CZK and creating at least 10 vacancies were eligible for a financial support which took two forms - either direct subsidy for each created vacancy or a subsidy for the employee retraining.

Program "F", which was launched on June 2nd, 2002 and ended on December 31st, 2007, was designed to attract R&D activities and knowledge-based investors. Technology centres have been defined as establishments oriented at innovation and periodic changes of products and strategic services have been specified as manufactures with a high added value in knowledge-intensive sectors.

With the exception of program "F", the magnitude of FDI incentives was dependent on the district unemployment rate. Based on local unemployment rate during the previous year, districts were split into three groups: "high-unemployment", "medium-unemployment" and "low-unemployment" group. According to an initial design of the scheme, districts with the local unemployment rate above country average by more than 50 percent were classified as distressed ("high-unemployment") group. In this case, a foreign investor was eligible for 200 thousand CZK per each created vacancy. Districts with the local unemployment rate 20 percent above (but less than 50 percent above) country average were eligible for 120 thousand CZK per each created vacancy. Districts with above-average local unemployment rate (but smaller than 20 percent above the average) were eligible for 80 thousand CZK per each created vacancy. Firms in remaining districts did not qualify for the subsidy.[5] The assessment of eligible districts was performed every six months.

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[5] Eligibility conditions changed a couple of times. The summary of scheme design changes is presented in Table 1. For example, after 2004 a legislatory change excluded districts with the unemployment rate U between U_avg and 1.25*U_avg from receiving direct subsidy per each created vacancy but still allowed them to qualify for retraining subsidy.

Table 1: The Overview of Legislatory Changes in Investment Incentives Scheme

Year	Law/ Act	Job creation Support	Requalification
1998-2000	No Law 298/1998 – decree 844/1998 – decree	Investment incentives officially started At the discretion of the government Condition: green-field investment (min 25 mil. USD) green-field investment (min *10 mil. USD*)	At the discretion of the government
2000	72/2000 – investment incentives law, February 24th, 2000 Valid from May 1st, 2000	*Investment at least 350 mil. CZK* *If Ur>1.25*U at least 175 mil. CZK* Condition Ur>U Government decides about the amount of the subsidy	*Investment at least 350 mil. CZK* *If Ur>1.25%U at least 175 mil. CZK* Condition Ur>U Government decides about the amount of the subsidy
	134/2000 – enactment, May 3rd, 2000	Subsidy 200,000 CZK/vacancy if Ur>1.5*U, 120,000 CZK/vacancy if Ur>1.25U 80,000 CZK/vacancy if Ur>1.0*U If Ur>U and #vac./firm>1000 + gravity region – the amount of subsidy according to neighboring region with highest Ur	Subsidy (% of requalification expenses) 35% for Ur>1.5*U, 30% for Ur>1.25*U 25% for Ur>1.0*U +10% increase for disabled person →Dtto
2001	453/2001 – change of investment incentives law, November 29th, 2001	Investment at least 350 mil. CZK If Ur>1.25*U at least 175 mil. CZK, *If Ur>1.5*U at least 100 mil. CZK*	No change
2002	103/2002 - enactment, February 27th, 2002	Subsidy 200,000 CZK/vacancy if Ur>1.5*U 120,000 CZK/vacancy if Ur>1.25U 80,000 CZK/vacancy if Ur>1.0*U *+10% for disabled person or LTU (>12 months) person*	Subsidy (% of requalification expenses) 35% for Ur>1.5*U, 30% for Ur>1.25*U, 25% for Ur>1.0*U *+10% increase for disabled person or LTU (>12 months) person* *Condition Ur>U and #vac./firm >1000* *Subsidy 35% for special training and 60% for general training*
2004	May 1st, 2004 – Law amendment	*Investment at least 200 mil. CZK* *If Ur>1.25*U at least 150 mil. CZK, If Ur>1.5*U at least 100 mil. CZK*	
	515/2004 – enactment, September 21st, 2004, valid form October 1st, 2004	Subsidy 200,000 CZK/vacancy if Ur>1.5*U *+ 50,000 CZK/vacancy for disabled person employed for at least 1 year* *100,000 CZK/vacancy for Ur>1.25*U only for disabled persons*	Subsidy (% of requalification expenses) *35% for Ur>1*U*
	578/2004 enactment (changing 515/2004), October 21st, 2004	Subsidy 200,000 CZK/vacancy if Ur>1.5*U + 50,000 CZK/vacancy for disabled person or *LTU (>12 months) persons* employed for at least 1 year *100,000 CZK/vacancy for Ur>1.25*U +25,000 CZK/vacancy for disabled person or >3 months unemployed persons employed for at least 1 year*	No change
2006	338/2006 enactment, Changing 515/2004, June 21st, 2006	Subsidy 200,000 CZK/vacancy if Ur>1.5*U *200,000 CZK/vacancy if Ur>1.2*U if neighbour with Ur>1.5xU* *100,000 CZK/vacancy for Ur>1.2*U 80,000 CZK/vacancy for Ur>1.0*U* *+ 10% for disabled person or LTU (>12 months) person*	No change
2007	159/2007 – law, June 2nd, 2007	*Investment at least 100 mil. CZK*	No change
2008	68/2008 enactment, hanging 578/2004 and 338/2006, February 4th, 2008	Subsidy *50,000 CZK/vacancy if Ur>1.5*U*	Subsidy (% of requalification expenses) *35% for Ur>1,5*U*

The design of the incentive scheme introduces three cut-off points and classifies Czech districts into four categories; however, the marginal subsidized amount differs for each threshold.[6] Another important feature of the scheme is that districts' eligibility can vary over time as districts can shift across eligibility groups (Table 2) and between eligibility and ineligibility (Table 3). Districts ineligible for the incentive scheme with unemployment rate close to the lowest threshold are used as a control group.

Table 2: The List of Districts Eligible for Investment Incentives for the Whole Period.

	2000	2001	2002	2003	2004	2005	2006	2007
Sokolov	L	M	M	M	M	M	M	M
Děčín	H	H	H	H	H	H	H	H
Chomutov	H	H	H	H	H	H	H	H
Litoměřice	M	M	M	M	M	M	M	M
Louny	H	H	H	H	H	H	M	H
Most	H	H	H	H	H	H	H	H
Teplice	H	H	H	H	H	H	H	H
Ústí nad Labem	H	H	H	H	H	M	H	H
Svitavy	M	M	M	M	M	M	M	M
Hodonín	H	H	H	H	H	H	H	H
Třebíč	M	M	M	M	M	M	M	M
Znojmo	M	M	M	M	M	M	H	H
Bruntál	H	H	H	H	H	H	H	H
Frýdek-Místek	H	H	H	H	M	H	M	M
Karviná	H	H	H	H	H	H	H	H
Nový Jičín	M	M	M	M	M	M	M	H
Břeclav	L	L	L	L	L	L	M	M
Přerov	H	H	H	H	M	M	M	M
Kroměříž	L	L	L	L	L	L	M	M
Šumperk	M	M	M	M	M	M	M	M
Jeseník	H	H	H	H	H	H	H	H
Vsetín	L	L	L	L	L	L	M	M
Opava	M	M	M	M	L	L	M	M
Olomouc	M	M	M	M	L	L	L	L

Note: H stands for district with the unemployment rate above 1.5*U_avg, M for districts with the unemployment rate between 1.25*U_avg and 1.5*U_avg and L for districts with the unemployment rate between U and 1.25*U_avg.

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[6] By marginal (or incremental amount) we understand the difference in possible subsidy at the threshold. This marginal subsidy per created vacancy is 80,000 CZK, 40,000 an 80,000 at the first, second and the third cutoff point, respectively. Marginal requalification subsidy at these cutoff points is 25 percent, 5 percent and 5 percent of requalification subsidy, respectively.

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Table 3: The list of districts eligible for incentives at least during some years.

	2000	2001	2002	2003	2004	2005	2006	2007
Kladno	L	L	L	L	L			
Kolín	L	L	L	L	L			
Kutná Hora	M	M	M	M	M			
Nymburk	L	L	L					
Český Krumlov						L	L	L
Karlovy Vary			L	L	L	L	L	L
Česká Lípa	L					L		
Liberec					L			
Chrudim	L	L		L				
Prostějov	L	L	L	L		L		
Vyškov	L	L	L	L	L			

Note: H stands for district with the unemployment rate above 1.5*U_avg, M for districts with the unemployment rate between 1.25*U_avg and 1.5*U_avg and L for districts with the unemployment rate between U and 1.25*U_avg.

4. Model

Following the theoretical literature, we select a set of traditional FDI determinants, namely, human capital endowment proxied by the share of tertiary educated productive labor force, industry structure of employment and local labor costs. A second set of explanatory variables includes a share of arable land on a total area of a district, a connection to main highways and proximity to target markets. Also, the local unemployment rate, the vacancy rate and a time trend are included in the model.

The impact of human capital endowment on FDI is, ceteris paribus, expected to be positive. Industry structure of employment is measured as the share of employment in a manufacturing sector. High share of employment in manufacturing sector indicates a higher relative probability of manufacturing firms' entry as industry structure of a district is expected to attract industry-specific FDI flows (Guimaraes, Figueirendo, and Woodward, 2000). Unfortunately, due to the nature of the FDI data, we cannot distinguish sectors on a district level. However, the majority of FDI in the Czech Republic comes into a manufacturing sector, therefore overall FDI flow is expected to be positively affected by the share of employment in manufacturing.[7]

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[7] The share of FDI in the manufacturing sector was more than one third of overall FDI in 2006.

Local labor costs are represented by a logarithm of local wages. Obviously, holding other independent variables the same, firms are expected to show a strong tendency to locate their labor-intensive production in districts with low labor costs (Basile, 2004). However, low wages might reflect low productivity of local labor force; therefore, high wages are expected to decrease FDI flows only if differences in wages are not overweighed by differences in labor productivity.

A variable describing the share of arable land on the total area of a district is introduced because from the anecdotal evidence it is known that investors tend to prefer agricultural land for new establishments (hence the name greenfield investment).

In the empirical literature, distance between countries two is used to model trade costs. The impact of proximity of neighboring markets on FDI depends on the size of these markets and the levels of exports to these countries. Germany and Austria are the main importers among neighboring countries, thereby justifying the use of a dummy for a common border with these countries. This dummy is expected to have a positive sign. On the same note, a good connection to target markets diminishes transportation costs and, thus, a dummy indicating a connection of a particular district to the highway network is expected to have a positive sign. The unemployment and vacancy rates describe the tightness of a local labor market. A high unemployment rate increases a pool of available workforce and is expected to attract FDI inflow. On the contrary, a high vacancy rate indicates a lack of available workers and deters new FDI.[8] The inclusion of the time trend captures an intertemporal variation in aggregate FDI due to macroeconomic and external factors.

The dependent variable FDI_{it} is constructed as a future three-year average of yearly FDI inflow into a particular district. Since it describes future FDI flows, current unemployment and vacancy rates can be considered as predetermined and endogeneity problem does not arise.

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[8] High levels of both the unemployment and vacancy rates indicate a skill mismatch when there is a disporportion between skills supplied by labor force and skills demanded by firms.

Variable FDI can be expressed as a function of abovementioned observed characteristics. Formally, we get

$$FDI : f(COL, MANUF, AGRI, HIGHWAY, EU15, w, u, v, t) + \varepsilon \qquad (1)$$

Observed factors explain a variation in FDI inflow across districts partly and the error term ε encompasses all variation caused by unobserved factors as well as the incentive scheme. Observed variation in FDI across districts can be divided into three parts: variation caused by the incentive scheme, variation explained by abovementioned (observed) determinants and variation due to unobserved factors:

$$FDI_{total} = FDI_{inc} + FDI_{obs} + FDI_{unobs} \qquad (2)$$

Substituting from equation (1), we obtain

$$FDI_{total} = FDI_{inc} + f(COL, MANUF, AGRI, HIGHWAY, EU15, w, u, v, t) + \varepsilon + FDI_{unobs} \qquad (3)$$

Taking expected terms near each cut-off point, FDI_{unobs} becomes zero which is a key assumption allowing the adoption of a regression-discontinuity design. Thus, once predicted values for FDI_{unobs} are filtered out, the remaining part of variation in FDI is attributable to government policies promoting FDI inflow. Equation (2) becomes

$$FDI_{inc} = FDI_{total} - FDI_{obs} predicted \qquad (4)$$

and the ensuing evaluation of the impact of investment incentives is performed using the regression discontinuity estimation. The purpose of FDI incentives is to positively influence the propensity of investors to locate in areas preferred by the government and, therefore, one should expect the sign of incentive dummies to be positive. Ceteris paribus, higher classification of the district in terms of the eligibility for incentives should be positively related to incoming FDI.

5. Data

The analysis puts together various data sources. The information about FDI flows is obtained from the Czech National Bank and covers annually a period between 1998 and 2007 at district level. The data contains financial amounts of foreign direct investments into the Czech Republic according to OECD definition (OECD, 1996).[9] Overall FDI consists of basic capital (deposit of non-resident in the form of fixed assets), reinvested earnings (profit not distributed as dividends) and other capital (loans from parent company). The stock of FDI in a year t is defined as a cumulative amount of FDI starting from 1989 to the end of the particular year. Annual FDI flows are calculated on a net basis as an outcome of credit and debit capital transactions between direct investors and their foreign affiliates.[10] As a measure of incoming FDI we consider only the first part of FDI - basic capital inflow - since we are interested primarily in the analysis of new firms' decision mechanism with the emphasis on the role of financial incentives.[11] Moreover, due to a privatization of financial institutions with headquarters' residency in Prague and large one-off sales of state-owned enterprises, Prague (as a main recipient of these FDI transactions) is excluded from the analysis. Similarly, Brno and Ostrava districts are excluded as they were main recipients (together with Prague) of FDI from program "F". This program was aimed at strategic services investment and was not restricted only to above-average unemployment rate. Since we are interested solely in the effect of the first two investment incentive programs which differentiated districts according to the local unemployment rate, three largest cities are not considered for the analysis.

Other data sources are the Unemployment registry containing District Labor Offices (DLO) district-level data on unemployment and the Czech Statistical Office (CSO) data with the information on industry structure, educational structure, wages and geographic characteristics (a share of arable land). Investment incentives data are from the government

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[9] Capital investment abroad is regarded as an FDI if the purpose is to establish permanent equity relation with a target company. The share of a foreign investment must be at least 10 per cent of the target firm's basic capital (and can be also 100 per cent).

[10] Hence, there exists a possibility of a negative FDI flow in case that some component of FDI decreases (e.g. basic capital of the firm decreases) and this decrease is not offset by the remaining components (reverse investment).

[11] That means, other two components of FDI (reinvested profit and remaining capital) are not cosidered as they are influenced by internal decisions of firms and not directly related to the existence of incentives scheme.

agency CzechInvest and the Ministry of Labor and Social Affairs. It contains the list of subsidized investment projects as well as the list of districts eligible for state support during particular time periods.

6. Descriptive Statistics

Figure 1 shows the evolution of a total FDI stock in the Czech Republic during 90's. Each box represents a regional distribution of overall FDI stock during a particular year on a logarithmic scale. An upward trend reveals a steady increase of the FDI stock, the persistence of regional variation and the dominance of Prague in FDI allocation.[12]
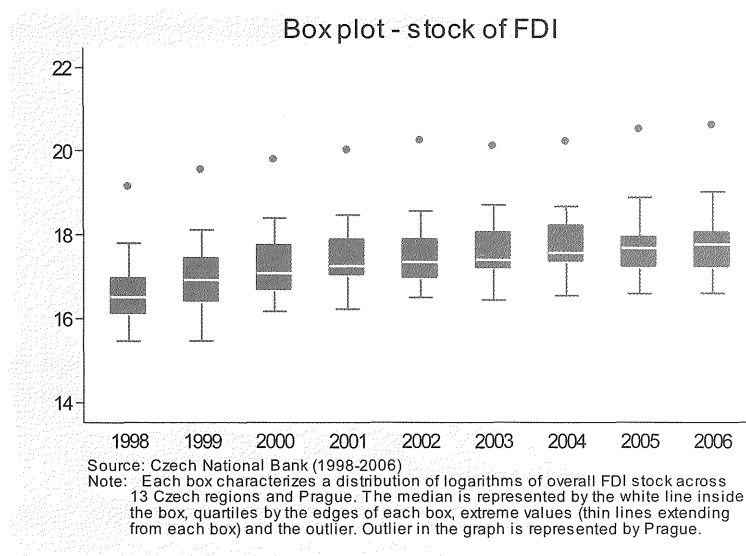
Figure 1: Realized stock of FDI across Czech regions (logarithms).

In absolute terms, while an overall stock of FDI in the Czech Republic was 429.2 billion CZK at the end of 1998 (Prague 201.5 billion CZK), by the end of 2006 it was 1,667 billion CZK (Prague 885 billion CZK). Thus, Prague absorbs approximately one half of overall foreign investments in the Czech Republic. This disproportion is even magnified if per capita levels are considered. Table 4 displays FDI inflows per capita in the three largest cities (Prague, Brno and Ostrava) as compared with the rest of the Czech Republic. It can

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[12] The box plot characterizes a distribution of the FDI stock - the median is represented by the white line inside the box, the quartiles by the edges of each box, the extreme values (thin lines extending from each box) and the outlier (Prague).

be observed that yearly flows exhibit a large regional inequality which can be attributed mainly to the largest cities and the fact that there exists a difference between a district in which FDI is realized and a in which it is registered. In case of large one-off transactions and privatizations (e.g. banks) all FDI inflow is registered in a district where head office is located although the firm may have some branches in other districts, too. This discrepancy justifies excluding Prague, Brno and Ostrava from the analysis in order to obtain unbiased estimates of FDI determinants. Also, a majority of FDI supported by program "F" was realized in these three districts and, as mentioned above, this program is not a subject of our analysis as it did not impose any eligibility thresholds on the unemployment rate. Moreover, FDI supported by program "F" represents only 3.5 percent of overall FDI supported by any of the three introduced programs.

Table 4: Average FDI per capita in.ow in the Czech Republic (thousand CZK).

Year	Czech Republic	3 largest cities	Rest
1999	11.56	39.72	5.21
2000	9.46	35.66	3.58
2001	4.10	11.66	2.43
2002	3.06	6.68	2.26
2003	3.62	10.80	2.03
2004	6.70	33.06	0.88
2005	9.59	41.18	2.60
2006	9.05	35.90	3.11

Note: For the calculation of average FDI per capita inflow were considered three years following the year pivotal for eligibility decision. Three largest cities are represented by the districts of Prague, Brno and Ostrava.

In the light of defined eligibility categories, it is worth inspecting regional unemployment as regions with highest unemployment rate yielded the most generous FDI subsidies. Table 5 shows the evolution of the unemployment rate in the Czech Republic over time. After a recession during late 90's, the unemployment rate increased the most in districts of North Bohemia (Ústecký) and North Moravia (Moravskoslezský) and stayed at high levels ever since. Thus, investors locating in those regions had an opportunity to obtain the most generous subsidy from the state.

Table 5: Unemployment Rate in Czech Regions Over Time (% of labor force).

	1995	1999	2003	2007
Prague	0.3	3.2	3.9	2.8
Stredocesky	2.7	6.9	7.2	5.4
Pardubicky	2.7	8.1	8.7	6.8
Kralovehradecky	2.1	6.9	10.2	5.6
Liberecky	2.3	7.7	9.2	7.4
Ustecky	5.8	14.7	17.4	14.0
Karlovarsky	1.8	8.1	10.2	9.3
Plzensky	2.3	6.9	7.3	5.6
Jihocesky	2.0	6.2	6.4	5.8
Zlinsky	2.7	8.1	10.3	8.0
Vysocina	3.6	8.4	8.6	7.1
Jihomoravsky	3.0	9.0	11.1	8.9
Olomoucky	4.6	11.4	12.0	9.0
Moravskoslezsky	5.7	13.5	16.4	12.9
Czech Republic	3.1	8.6	10.0	7.8

Note: Regional unemployment rates for years 1995, 1999 and 2003 were calculated by merging together district corresponding to a particular region according to structural division as of 2007 (there was a change in regional structure starting June 2004).

Table 6: FDI Inflow, Supported FDI and Investment Incentives during 2000-2007.

(mil. CZK)	Realized FDI	Supported FDI	Paid incentives
Central Bohemia	157,888	80,618	761
South Bohemia	47,552	16,096	5
Plzensky	32,756	20,749	18
Karlovarsky	5,129	6,860	45
Ustecky	52,848	88,784	2,455
Liberecky	39,630	23,525	6
Kralovehradecky	17,474	19,853	11
Pardubicky	18,798	25,994	11
Vysocina	57,035	29,977	55
South Moravia	45,374	35,062	540
Olomoucky	10,846	33,905	1,090
Zlinsky	31,627	14,570	25
Moravskoslezsky	139,389	38,062	1,360

Note: Prague is excluded because of its special status of capital city affecting FDI reporting (privatization, headquarters of foreign companies). FDI represents average yearly FDI inflow, supported FDI stands for the overall amount of planned investment (filled in the application for investment incentive) and paid incentives is the sum of total financial state subsidy during 2000-2007.

Looking at the regional dimension of FDI, Table 6 displays an FDI inflow across regions during 2000-2007 and compares overall realized FDI inflow with the supported FDI inflow and direct investment subsidy. Two main characteristics can be observed from the table: first, except for Central Bohemia and Moravskoslezsky region, a vast majority of investment inflow during 1999-2006 was supported by the state;[13] second, for some regions the size of supported projects exceeds the realized FDI inflow. This observation

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[13] More than 97 percent of supported FDI was promoted by program "M".

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can be attributed to inaccurate assessment of the future investment by the firm. More specifically, the amount of supported FDI is based on the data reported by the firm upon filing an application for investment incentive, i.e. prior to the realization of the investment and may overstate the actual amount of realized FDI. Another reason of the discrepancy between realized and supported FDI may be the delay in a realization of the project awarded with a financial subsidy ('supported FDI' towards the end of the time span 2000-2007 may include some projects which are yet to be realized and, therefore, are not included in the 'realized FDI' data).

FDI inflow per capita by the districts' eligibility for the financial subsidy after the implementation of the incentive scheme is shown in Table 7. One can observe that the basic capital part of FDI inflow is decreasing over time among eligible districts (with the exception of the 'highest-unemployment' group where there is no visible trend). However, simple comparison of means is not appropriate for the estimation of the impact of the incentive scheme. We need to adopt a correct identification strategy for assessing the effect of the incentive scheme at the margin (a cut-off point).

Table 7: Average FDI per capita in.ow by District Unemployment (thousand CZK).

Year	U < U_avg	U_avg < U < 1.25*U_avg	1.25*U_avg < U < 1.5*U_avg	1.5*U_avg < U
2001	2.43	4.05	2.08	1.40
2002	2.09	4.64	0.56	1.92
2003	2.55	4.49	1.37	-1.14
2004	1.88	2.11	-1.15	-2.51
2005	3.57	1.39	-2.54	4.71
2006	3.24	2.49	-2.71	10.96

Note: For the calculation of average FDI per capita inflow were considered three years following the year pivotal for eligibility decision. According to a change in scheme design, for the year 2006 an alternative grouping is used as 1.25*U_avg is replaced by 1.2*U_avg. Prague, Brno and Ostrava are excluded as FDI flows to metropolitan areas are specific and contain distortions (privatization of banks in case of Prague, larger concentration of service industry as compared with the rest of the Czech Republic).

7. Identification Strategy

The identification strategy is based on an unemployment threshold set by the Czech government which splits districts into several eligibility groups. Being set exogenously, this threshold provides an opportunity to employ regression-discontinuity method (Imbens and Lemieux, 2007, Lee and Lemieux, 2009) which is designed for the estimation of the

policy impact in the absence of a randomized controlled experiment. The estimation analyzes the impact of the discontinuity in an assignment variable (the unemployment rate) on the outcome variable (the average FDI per capita in a district during three years following the year essential for eligibility criterion) and, thus, allows the assessment of the effectiveness of incentives program based on unemployment thresholds.

The main assumption justifying the use of RD design is that the assignment variable is observed and the assignment rule is ex-ante known (sharp RD design). By the design of the investment incentive scheme, this assumption is satisfied. The second key assumption is that the outcome variable is continuous and smooth function of the assignment variable in the absence of the treatment. While there exists no statistical way to test this assumption, the inspection of an outcome variable and an assignment variable prior to an implementation of the incentive scheme suggest that the RD approach is justified.

Based on equation (1), a following specification of FDI determinants is estimated in the first stage:

$$FDI_{it} = \alpha + \beta_1 COL_{it} \beta_2 MANUF_{it} + \beta_3 AGRI_{it} + \beta_4 HIGHWAY_{it} + \beta_5 EU15_{it} + \beta_6 \ln(w)_{it} + \beta_7 u_{it} + \beta_8 v_{it} + yt + \varepsilon_{it} \qquad (5)$$

where FDI_{it} is a three-year average basic capital inflow per capita in a district i starting in period t, COL_{it} is a share of tertiary educated productive labor force, $MANUF_{it}$ is a share of employment in manufacturing sector, $AGRI$ is a share of arable land, $HIGHWAY$ indicates a presence of a highway, $EU15$ stand for the common border with the EU-15 (Austria and Germany), $ln(w)$ is a logarithm of local wage level, u is the local unemployment rate, v is the local vacation rate, t is a time trend and ε_{it} is a noise term.

Three alternative measures of the outcome variable are considered. First, the unadjusted three-year average basic capital inflow is used. Second, the three-year average basic capital inflow is adjusted for the variation explained by observed factors as residuals from equation (5) are used as the outcome variable. Third, the analysis is performed on a subsample of districts which have experienced at most one shift between four eligibility

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categories as numerous shifts would hinder proper causal assessment of the scheme impact on FDI.

Regression discontinuity estimation is implemented using the Stata command rd, described in Nichols (2007). Local linear regressions are estimated at both sides of the cut-off and the estimated impact of the treatment is defined as the difference between estimates of the outcomes on each side of the cut-off. Restricting the sample to specified bandwidths around discontinuity points ensures that districts are similar to each other and residual variation in FDI inflow can be attributed to the eligibility for the incentive scheme.

The discontinuity is analyzed for three cut-off points - the average unemployment rate, 25 percent and 50 percent above the average unemployment rate, respectively. At each threshold the magnitude and significance of the discontinuity in the outcome variable is estimated. The standard error is obtained by the bootstrapping technique. The analysis helps to uncover the role of investment incentives in allocation decision of foreign investors and, specifically, to answer the question whether regions favored due to the framework of incentive system tend to host more FDI than similar regions without such a support.

8. Results

Table 8 reports regression estimates of the impact of local district characteristics with future FDI inflow. Signs of all explanatory variables are as expected except for the share of employment in manufacturing sector (we argued that the overall impact is ambiguous) and the vacancy rate. However, the effect is statistically significant only in the case of the highway connection and the border with EU-15. This finding indicates the orientation of new foreign establishments on export and emphasizes the importance of easy access to target markets. Common borders with Austria or Germany increase yearly FDI inflow per capita by almost 2,000 CZK (compared to national average yearly inflow 2,290 CZK between 2001 and 2007. Similarly, a connection of a district to main highway network represents even greater comparative advantage in attracting FDI as the presence of highway increases FDI inflow by almost 2,400 CZK yearly.

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Table 8: Regression Results: Explaining FDI Inflow per capita.

	coef.	P-value	coef.	P-value	Coef	P-value
	(1)		(2)		(3)	
SECONDARY			0.223*	0.044	0.079	0.501
TERCIARY	0.108	0.549	-0.083	0.671	-0.325	0.125
MANUF	-0.021	0.709	-0.047	0.400	-0.095	0.126
AGRI	0.042	0.149	0.022	0.459	0.030	0.354
HIGHWAY	2.399***	0.008	2.853	0.002***	3.150***	0.001
EU15	1.996*	0.047	1.993	0.059	-0.892	0.436
log(WAGE)	-0.021	0.997	4.361	0.388	-44.681***	0.001
u_rate	0.034	0.773	-0.335	0.179	-0.877	0.001
v_rate	0.573	0.484	-3.092	0.139	-8.385	0.000
u x v			0.484	0.049*	0.832	0.002
t	0.134	0.447	-0.063	0.737	1.510	0.000
const	-2.267	0.960	-55.502	0.260	425.239	0.000
N	814		814		814	
R-sq. (adj.)	0.02		0.02		0.214	

Note: Linear regression explaining heterogeneity in FDI inflow per capita based on pooled data. Specifications (1) and (2) adopt three-year average FDI inflow as a dependent variable, specification (3) uses difference between current three-year average FDI inflow and three-year average before the scheme was implemented (1998-2001) as the dependent variable. The variable SECONDARY indicates the share of population with secondary education and TERCIARY the share of college educated population, MANUF stands for the employment share in a manufacturing sector, AGRI indicates the share of agricultural land on the total area of a district, HIGHWAY is a dummy indicating the presence of state highway, EU15 indicates the border with Austria or Germany, u_rate is the unemployment rate and v_rate is the vacancy rate. Cities of Prague, Brno and Ostrava are excluded. Significance levels: *** 0.1%, ** 1 %, * 5%.

Table 9: RD estimates of the impact of an incentive scheme on future FDI inflow

FDI per capita inflow	Specification Unadjusted FDI			Adjusted FDI			Adjusted FDI + Subset		
Bandwidth	short	medium	long	short	medium	Long	short	medium	long
Impact_U_avg	14.820	9.663	4.958	13.176	8.046	4.049	10.571	8.072	8.116
standard error	(7.947)*	(5.043)*	(2.926)*	(7.058)*	(4.559)*	(2.453)*	(8.253)	(4.713)*	(4.154)*
bandwidth	0.272	0.543	1.087	0.272	0.543	1.087	0.55	1.1	2.2
N_used	44	89	172	44	89	172	49	120	290
Impact_1.25	-4.072	-2.723	-0.437	-1.810	-1.419	0.290	-1.623	-0.362	0.036
standard error	(2.125)*	(1.643)	(1.346)	(2.917)	(2.102)	(1.634)	(3.321)	(2.634)	(1.850)
bandwidth	0.332	0.665	1.330	0.332	0.665	1.330	0.485	0.97	1.94
N_used	33	61	136	33	61	136	27	62	137
Impact_1.5	1.901	-2.127	-3.648	1.443	-2.418	-3.479	-1.924	-3.276	0.250
standard error	(3.524)	(2.396)	(2.107)*	(4.625)	(3.571)	(2.674)	(8.303)	(3.407)	(2.513)
bandwidth	0.480	0.960	1.920	0.480	0.960	1.920	0.963	1.925	3.850
N_used	45	92	236	45	92	236	49	94	226

Note: The table reports estimates from regression discontinuity estimation with the FDI per capita inflow as a dependent variable and the unemployment rate as an assignment variable. The bandwidth characterizes the distance of district from the discontinuity jump in terms of the unemployment rate. A "medium" bandwidth is set so that at least 30 districts are included at each side of the discontinuity. As a robustness check, alternative bandwidths are used - dividing the "medium" bandwidth by 2, we obtain "short" bandwidth and multiplying by two, "long" bandwidth. Three different unemployment thresholds are considered: the average unemployment rate times 1, 1.25 and 1.5, respectively. Values denote the impact of the investment incentive scheme at the margin on the future FDI inflow in a district. Three specifications for each threshold are estimated - the first one uses plain FDI per capita inflow ("baseline"), the second specification adjusts the dependent variable by observed explanatory variables ("adjusted") and the third specification uses only a subsample of districts ("adjusted + subset"). Those districts which changed their eligibility/ineligibility status more than once are excluded because of a potential noise in the data. Thus, at the first discontinuity (U_avg) six districts were excluded, at the second discontinuity four districts and at the third discontinuity also four. Significance levels: *** 0.1%, ** 1 %, * 5%.

Table 9 provides results of regression-discontinuity estimates based on three unemployment thresholds. The first three columns present the impact of incentive scheme on unadjusted FDI inflow per capita, next three columns show the impact on residual FDI inflow (adjusted by variation explained by observed characteristics) and the last three columns report the estimates for residual FDI inflow for a subsample of districts (only those moving between different eligibility categories at most once are considered). Results show a similar pattern for all three measures of the dependent variable, however, we consider the last specification as decisive for the assessment of the impact.[14]

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[14] As argued before, multiple shifts between respective eligibility categories may distort the estimates since the dependent variable is calculated as a mean of next three years (to allow a gradual effect of the eligibility for the incentive scheme).

The effect of the incentive scheme is the strongest in case of the first discontinuity point (the average unemployment). Contrasting average FDI inflow on both sides of the unemployment threshold, we find that FDI inflow per capita is higher by 8,000 CZK for districts with above-average unemployment rate as compared to districts with below-average unemployment rate. This impact is both economically and statistically significant. Figure 2 visually illustrates the jump induced by the incentive scheme.
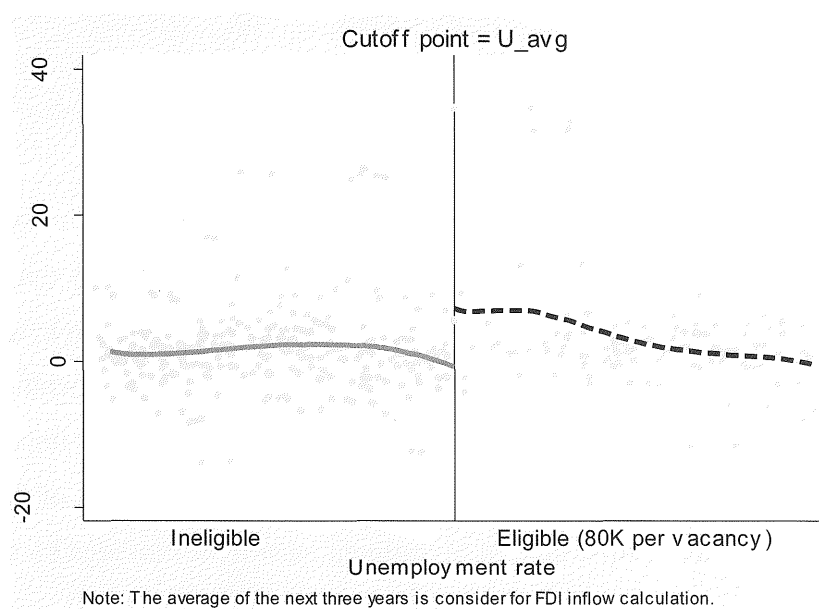
Figure 2: Regression discontinuity at the first unemployment threshold.

On the contrary, the middle unemployment threshold shows no significant effect in additional FDI attraction as the RD estimate approaches zero. This finding may be explained by the fact that while the marginal FDI at the first threshold twice as much as at the second threshold (80,000 CZK vs. 40,000 CZK per created vacancy) and even more in terms of retraining expenses (25 percent vs. 5 percent). Similarly, an insignificant, albeit slightly negative, effect is found for the third unemployment threshold.

Comparing estimates for different bandwidths and different forms of the dependent variable the following findings emerge. First, in case of the first threshold, a short bandwidth shows a more pronounced impact of the incentives scheme. This is in line with the assumption that the effect is the strongest at the margin. Second, RD estimates for the total FDI inflow exhibit a higher variation across bandwidths than for the part of FDI

inflow unexplained by observed variables. This indicates observed heterogeneity of districts around the thresholds. Once this observed variation is removed, RD estimates show a more consistent trend.

Summarizing, we find that the effect of investment incentive scheme is large and significant for the first threshold; however, it provides no extra motivation for foreign investors in the other two unemployment thresholds.

9. Conclusion

This research has an ambition to unveil location decisions of foreign investors and identify main determinants of district-level disparities in FDI distribution in the Czech Republic during 2001-2006. Softening regional disparities and new job creation in areas with above-average unemployment brings a substantial relief for public spending in terms of unemployment benefits and social assistance. Quantifying the impact of financial incentives on FDI location decisions helps to uncover the true effect of these policies and sheds more light on the justification of investment incentives provided by the government.

The incentive effect of investment support scheme starting in 2001 is assessed on a dataset in which FDI flows are merged with labor market indicators such as the unemployment rate, the share of employment across industries, educational structure and geographic characteristics. Based on the knowledge of administrative design of the scheme in each year, three unemployment thresholds are identified. They are the source of exogenous variation as they are set institutionally and differentiate the level of state subsidy. These thresholds are various multiples of the state average of the unemployment rate and districts with higher unemployment receive more generous subsidy. The design of the investment incentive scheme allows the identification strategy to be based on differences around cut-off discontinuity points. Regression-discontinuity approach is employed in order to estimate the impact of each eligibility group.

Regression-discontinuity estimates are positive and both economically and statistically significant for the first threshold (the average unemployment rate). Specifically, a district

with the unemployment rate "just above" the state average experience an FDI inflow per capita higher by 8,000 CZK than a district "just below" the state average. However, the effect vanishes at the second threshold (1.25 x the average unemployment), which can be attributed to smaller marginal subsidy. Despite relatively generous marginal subsidy at the third unemployment threshold (1.5 x the average unemployment rate), the results provide a no evidence of the incentive effect on the third threshold either.

We also find that a good and fast connection to target markets is one of the crucial FDI determinants in the Czech Republic. District connection to main highway network increases yearly FDI inflow by 2,400 CZK and a location on the border with Germany or Austria by 2,000 CZK. This finding suggests a predominant export orientation of foreign establishments and is in line with observed FDI composition as the majority of FDI comes into a manufacturing sector.

Various specifications of the outcome variable and different length of the bandwidth are applied for a robustness check. A more pronounced impact is found for shorter bandwidths, however, the sign and economic significance of the estimates does not change.

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The Effect of Economic Freedom and Trade Openness on GDP Per Capita

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Abstract

This study basically investigates the effect of economic freedom and trade openness on income per head level of countries to test the ongoing neo-liberal theories. Firstly, the paper questions the validity of liberal theories for all selected countries. Secondly, it evaluates the effect of international trade and economic freedom on differently structured economies by distinguishing countries into two groups as advanced and developing. Between 1994 and 2007, econometric analysis of the panel data of 50 biggest GDP producer countries of 2008 confirms that economic freedom and trade openness rates have significant positive relationship with GDP per capita level of countries.

1. Introduction

During the last three decades, the economic conjuncture of the world has been shaped under neo-liberal ideas. Free trade and economic freedom are seen as the major determinants of higher prosperity levels for countries by their potential benefits on production and efficient distribution of sources. Thus, by the effect of globalization, liberalization of trade and economic activities has become the most highlighted policies for world economies.

In this paper, we have two main purposes. Firstly, we try to test the accuracy of ongoing neo-liberal ideas by questioning whether international trade and economic freedom are related with income levels of nations as defined in theories. Secondly, we search how international trade and economic freedom show their effect on different economic levels by

dividing countries in two as advanced and developing economies. We also try to explain the ways that affect income through international trade and economic freedom and why there are distinctions between countries' benefits from international trade and economic liberty. Our main hypothesis is that trade openness and economic freedom are positively correlated with the prosperity level of countries. In addition, we expect that advance countries have more gains from trade and freedom in contrast to developing countries.

In theory, international trade is concerned as one of the most important factors in growth and prosperity. It is believed that international trade provides opportunities for countries to participate in mutually beneficial exchanges. Countries can specialize on certain goods that they have comparative advantage by using their factor abundance. As a result, total production tends to increase by the gained specialization all around the world. Furthermore, increased international trade volume enhances competition among nations which raises efficiency in production, distribution and allocation techniques. The extended market size that is caused by the increasing integration of economies benefits all producers and consumers by facilitating the flow of goods and services across borders as well. Also, the influence of multinational companies accelerates the diffusion of technology and new ideas by their variation of production locations. Thus, with these positive externalities, it is expected that trade will stimulate production, growth and so does income in countries. In accordance with these theoretical remarks, after 1980s the tariff and non-tariff barriers on trade are lowered and new free trade arrangements between nations are formed on international stage. Also World Trade Organization (WTO) was established to oversee trade activities between nations by prescribing regulations to ease the flow of goods and services cross-borders.

On the other hand, economic freedom which contains many sub-headings such as reduced government size, free circulation of labor and capital, ease of entering or coming out of business environment, advanced property rights and free international trade activities etc. in an economy become one of the most dictated topics of liberal doctrine that lie in the root of Adam Smith's "invisible hand" phenomenon to achieve a higher level of welfare by risen efficiency, activity and production. In theory, property and individual rights which are seen as fundamental determinants of the incentive of making production and

investment should be protected in order to ensure the smooth operation of markets and activities of economic actors. Theoretically lack of freedom in economic environment can distort economy. For instance, high regulations on business environment and entrepreneurship can deteriorate the enthusiasm of individuals and firms. Also large government size and high spending that require higher taxation can obstruct economic activities, investments, production and so does economic prosperity. Price controls and inflationary policies can damage the functioning of markets as well by rising inefficiencies and ambiguities. On the other hand, as the reasons underlined above, trade is an important topic for economic freedom. Lowering tariff and non-tariff barriers accelerate economic traffic and lead to more outturn. Furthermore, free investment environment which contains low bureaucratic obstacles and restrictions on capital movement create opportunities and incentives to make investment in new ideas for entrepreneurs. An efficient financial system that is regulated by independent authorities is needed to support investment environment by facilitating the matching of borrowers and lenders in the market also the flexibility of labor market is a crucial factor in providing efficient match between workers and jobs. Thus, in order to benefit from these theoretical inferences of freedom, many countries have moved toward a freer economic environment which is more consistent with neo-liberal ideas and market capitalist systems become dominant all around the world.

In order to determine the effect of international trade and economic freedom on income levels, we use econometrical analysis. Firstly, we investigate the relationship between GDP per capita and trade openness by the regression analysis of 48 countries' records for finding the connection between international trade and economic prosperity. Then, we categorize countries as advanced and developing to see the impact of international trade separately on both of the groups. Secondly, we attempt to give the relation between economic freedom and GDP per capita by analyzing the data of 50 biggest GDP producer countries in 2008 according to IMF. Again, we try to show the effects of economic freedom on GDP per capita separately by grouping countries as advanced and developing.

The outline of this paper is as follows, in next section, we investigate the prior literatures that are related with our subjects. Then, we present the data and give the estimation of the models with rude interpretation of results. In following section, the results are argued

broadly by giving the reasons behind them. The last section is the conclusion part which summarizes the study and delivers the last opinions about the subject.

1.1. Existing Literatures

There have been several studies on trade openness and economic freedom by variety of perspectives and variables to verify whether they are related with economic performances, income levels or growth rates as determined in neo-liberal theories. Especially, liberal doctrine emphasizes that international trade can increase welfare by its positive effects on efficient allocation of sources, production factors and specialization. For instance, John Stuart Mill championed free trade in its famous expression as:

> "…Trade is a social act. Restrictions on trade, or on production for purposes of trade, are indeed restraints; and all restraint, qua restraint, is an evil…"

By its historical roots, international trade is always concerned by economists and researchers who have studied economic development, growth and income topics. As volume of international trade increased rapidly during the last three decades, some studies spotlight the reasons behind it. In addition to the sociological approach of Mill, economic and politic factors such as increasing number of multinational firms, the political convergence of nations with international institutions, developments in trade infrastructure such as communication and transportation are concerned as the main boost of the international trade in the literature (Chau *et al.* 2003; Milner and Yoffie, 1989; McDonald, 2004).

There are many studies dealing with the relationship between international trade and growth with using different tools. In most papers, trade openness term is used as an indicator of countries' participation in international trade. While some researchers assumed that trade openness can be measured by the average tariff rates (Lee, 1993; Harrison, 1996; Edwards, 1998), the others measure trade openness ratio with using bilateral payment arrangements (BPA) (Auguste, 1997). Also some researchers and institutions construct their own indices in order to quantify the rate of openness (Leamer, 1988; Dollar, 1992).

But most of the studies in the literature employed trade openness by defining it as total export and import over income of nations for determining the effect of international trade (Frankel and Romer, 1999). In this research, as most other factors of international trade has included in the index of economic freedom, we have just taken the most common formulation which is (X+M)/GDP to define trade openness rate of countries.

If we look over prior literatures on the relationship between income and trade openness, many studies determine that there is a positive correlation between these two variables (Soysa and Neumayer, 2005; Frankel and Romer, 1999). According to Frankel and Romer (1999), one point increases in trade shares increases income by person by two percentages. Also Fontagné and Mimouni (2000) determined the positive relationship between economic development and trade development.

Some studies have taken into account the distinctions in the structures of economies (Edwards, 1993, Coe, 1935). As advanced and developing countries have different reactions to different policies or conditions, some theories say that developing countries should avoid international trade until they are capable of competing with the rivals. These theories also mention that developing countries could survive if and only if they hang on to the protectionist policies and methods such as tariffs and non-tariff barriers, or maybe infant industry theories. But, there are some empirical studies suggesting that developing countries should free their trade policies by reducing barriers on international trade to increase their growth and income. Edwards (1993) argues this idea with using the Latin American and East Asian countries and found out that the outward oriented policies of East Asian countries' work with a greater performance than the inward oriented policies of Latin American countries.

On the other hand, the relationship between economic growth and economic freedom is an ongoing research area for economists. Although economic freedom phenomenon is used in most of the studies, there is an uncertainty on the dimensions of economic freedom and its definition. According to Heritage Foundation report (2010, p.58) economic freedom is defined as the liberty in production, distribution, or consumption of goods and services; absolute right of property ownership; fully realized freedoms of movement for labor,

capital, and goods; and an absolute absence of coercion or constraint of economic liberty beyond the extent necessary for citizens to protect and maintain liberty itself. In general, economic freedom is defined with its components which are personal choice property rights, voluntary exchange, freedom to compete and protection of persons (Gwartney and Lawson, 2003). Besides, it is emphasized in literature that economic freedom of countries is affected by countless factors such as politics, culture, traditions, geographical features, technology, natural resources, size of government and even climate (Frankel and Romer, 1999; Preston, 1987; Lai and Chun Zhu, 2004; Nordhaus, 2006).

To measure the economic freedom, many institutions and researchers derived varieties of economic freedom indices which are built to reach the optimum level of composition and catch the effective rate of aggregation of numerous variables (Lau and Lam, 2002). There are four dominant indices in literature that are used to express economic freedom. Heritage Foundation's Index of Economic Freedom, The Fraser Institute's Economic Freedom of World, Freedom House's annual report "Freedom in the World", Scully and Slottje's Ranking Economic Liberty Across Countries (1991) are all used in econometric studies. Because of its broad multi-dimensional measurement and longest availability of yearly data, we have chosen Heritage Foundations Index of Economic Freedom in our paper. The index contains ten equally weighted subtitles that include doing business condition, tariffs and non-tariff barriers, tax rates of individuals and corporations, level of government intervention on economy and magnitude of government spending, inflation rates and the price controls, investment laws and procedures, security of banking sector and independence from government control on banking system, health of property rights, existence of corruption which distorts economy, minimum wage laws, rigidity of employment and obstacles in labor market. Several studies objected the equally weighting of variables with emphasizing their different importance for countries. It has been mentioned that each country has its unique characteristics and the weight of variables may change (Lau and Lam, 2002).

In literature, many studies have exhibited the positive correlation between economic freedom and growth. For instance, Justesen (2008) investigated the causality relation of economic freedom and economic growth by using panel data over the period 1970–1999.

He concluded that economic freedom causes economic growth, but the adverse relation has no strong evidence. He also investigated the effect of the components of economic freedom on growth separately and verified that some of the components have relatively more importance to stimulate economic growth. Dawson (2003) found that overall level of economic freedom cause growth and changes in freedom move in the same direction with economic growth. Also Doucouliagos and Ulubasoglu (2006) emphasized the positive association between economic freedom and economic growth by applying the meta-analytic techniques. Furthermore, Sturm and de Haan (2000) concluded that high economic freedom prompts economic growth until their steady state level of economic growth but the level itself is not related with the level of freedom. On the other hand, some studies emphasize the incentive role of economic freedom on productivity and investment which leads to economic growth (Dawson, 2003). Also, Edwards (1998) underlined that the transitivity of economies can be increased by economic freedom which rises productivity and activity.

In this paper, we will quest the general success of the free market and free trade ideas of liberal doctrine on creating income for countries and their citizens by econometric analysis. We try to find the general effect of trade openness and economic freedom separately on GDP per capita for all selected countries and the independent effects of these variables on different structured economies by grouping countries as advance and developing. As it is generally accepted in literature that trade openness and economic freedom cause growth and higher income level, we will not use any causality test to determine the direction of the relationship between these variables. Also, even though most of the prior studies concerned with the relationships between economic growth-economic freedom and economic growth-trade openness, we use income per head levels of countries in our models. Although GDP per capita is not reflecting the real welfare level of countries because of the measurement problems that arise with volatility in population of nations and lack of expressions on income share of different groups in a country, it furnishes us to compare countries' average prosperity levels roughly.

2. Model

2.1. Estimation of the Models

2.1.1. Trade Openness

We examined the relation between the trade openness and GDP per capita by using the panel data of 48 of 50 biggest GDP producer countries in 2008 according to IMF between the years 1994 and 2007. We excluded Taiwan and United Arab Emirates (UAE) because of the unavailability of proper data of these countries. GDP per capita data that is arranged according to purchasing power parity (PPP) is used for selected countries from IMF database. We use nominal values of export, import and GDP levels from IMF database to determine the trade openness rates. In this study, trade openness data is calculated as a ratio of international trade volumes (Exports + Imports) over GDP levels for each country as mentioned above. Trade openness ratio that is greater than one refers that the country has a greater international trade volume than its total GDP. Even though, the scale of the trade openness ratios can be zero or greater than zero in mathematical sense, the trade openness data of the selected countries in this study vary between 0.14 and 4.55.

In our model, GDP per capita is taken as a dependent variable, and trade openness and trend are determined as independent variables. We add trend into our model to decontaminate the affect of the ordinary changes in GDP per capita caused by the time impact. In order to make econometric analysis we use the fixed effects model. Also, white cross-section method is employed to have more significant coefficient variances in the regressions. First, we estimated the model for whole dataset and then did the regression by dividing the data in two groups as advanced and developing countries by using IMF classifications owing to idea that the different structure of economies reacts differently for the changes in variables.

Our general structure of the model in regressions is determined as below:

$$Y_i = \alpha + \beta X_{1i} + \theta X_{2i} + \varepsilon_i \tag{1}$$

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In this equation, Y refers to GDP per capita, X1 refers to trade openness ratio, X2 is used to illustrate trend effect and ε_i includes all other variables that we have neglected.

The result of the regression that is formed by using the whole dataset is shown below:

Table 1. Trade Openness Regression Results

Variable	Coefficient	Std. Error
Intercept	8414.81*	581.49
Trade Openness	4646.40*	868.65
Trend	684.20*	48.11
R-squared	0.967	

* refers significance at 99%.

Table 1 shows us that there is a strong and positive relationship between trade openness and GDP per capita. The coefficients are statistically significant at 99% confidence level that supports the validity of each in the regression. One point increase in trade openness rate raises GDP per capita by approximately 4646 U.S. dollar on average for whole countries in the model. Also there is a positive connection between trend and income per head. On average, the time effect on GDP per capita is 684 U.S. dollars between the years 1994 and 2007. As a brief interpretation, although trend has a strong effect on GDP per capita, international trade is a key factor for higher prosperity levels for countries and their citizens as generally accepted in theory.

When we separate countries in two groups to measure how international trade effects income levels of countries in different structures, we find the results that are shown in Table 2 for both advanced and developing countries:

Table 2. Trade Openness Regression Results

Advanced Countries			Developing Countries		
Variable	Coefficient	Std.Error	Variable	Coefficient	Std. Error
Intercept	14525.75*	594.99	Intercept	4112.77*	299.70
Trade Openness	4222.48*	727.53	Trade Openness	775.95***	466.97
Trend	1108.21*	55.17	Trend	297.89*	37.77
R-squared	0.958		R-squared	0.957	

*, *** refer significance at 99%, 90%.

As it is seen from the Table 2, trade openness and GDP per capita have a positive correlation for advanced countries. All coefficients are significant at 99% confidence level. In advanced countries, one point increase in trade openness ratio raises GDP per capita by approximately 4222 U.S. dollar on average. Also trend has a great influence on GDP per capita. One year increase indicates 1108 U.S. dollar higher GDP per capita on average between the years 1994 and 2007. This result shows us that trade openness and GDP per capita show collateral pattern for high income countries.

The obtained result for developing countries also illustrates the positive linkage between trade openness and GDP per capita. While the coefficient of trade openness is significant at 90% confidence level, the other coefficients are significant at 99% level. The regression outcomes confirm the benefits of internationalization for developing countries. One point increase in trade openness ratio raises the GDP per capita about 775 U.S. dollars in developing countries. Also the trend in GDP per capita is positive in these countries. Every year between 1994 and 2007, average income of the citizens of developing countries ascended by 297 U.S. dollars.

2.1.2. Economic Freedom

To determine the correlation between economic freedom and GDP per capita, we use the data of 50 largest GDP producer nations in the year 2008 according to IMF. The panel data of economic freedom and GDP per capita are composed by using the records between the years 1996 and 2007 in order to construct our regression. We again choose GDP per capita

(PPP) data which is obtained from IMF database as a dependent variable and index of economic freedom and trend as independent variables in the model. As it is mentioned above, the economic freedom averages are taken from the Index of Economic Freedom of Heritage Foundation. The index of economic freedom is arranged by equally weighted composition of ten variables which are business freedom, trade freedom, fiscal freedom, government size, monetary freedom, investment freedom, financial freedom, property rights, freedom for corruption and labor freedom. It is unnecessary to express the context of subtitles again as we have discussed the meaning of each broadly in previous sections. The scale of the index changes between 0-100 and greater index values mean broader economic freedom in a country. Trend is also added to regressions in order to separate the time effect on dependent variable in the model. We use fixed effects model and white cross-section method in all econometric analysis. We run three equations by using the data of whole countries and separately grouped countries as advanced and developing. The general equation that is used in all regressions is determined as below:

$$Y_i = \alpha + \beta X_{1i} + \theta X_{2i} + \varepsilon_i \qquad (2)$$

In this model Y is used for GDP per capita, X1 is used to refer the economic freedom index value, X2 is showing the trend effect and ε_i includes all other factors that have disregarded. We obtain the results that are shown in Table 3 for whole dataset:

Table 3. Economic Freedom Regression Results

Variable	Coefficient	Std. Error
Intercept	3248.08**	1448.19
Economic Freedom	149.74*	24.06
Trend	812.50*	57.05
R-squared	0.974	

* and ** refer significance at 99% and 95%, respectively.

The outcome of the regression implies that there is a powerful connection between economic freedom and GDP per capita. One point increase in the economic freedom index ascended GDP per capita about 150 U.S. dollars in selected countries. While the

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coefficient of the intercept is significant at 95% confidence level, the coefficients of economic freedom and trend are significant at 99% confidence level. Also trend shows a positive correlation with GDP per capita during the period between 1996 and 2007. One point increase in trend supports 812.5 U.S. dollar raise in GDP per capita.

If we did the same regression for advanced countries and developing countries separately, we obtain the table below:

Table 4. Economic Freedom Regression Results

Advanced Countries			Developing Countries		
Variable	Coefficient	Std. Error	Variable	Coefficient	Std. Error
Intercept	10879.75*	3210.01	Intercept	6520.71*	714.22
Econ. Freedom	126.11**	50.80	Econ. Freedom	-16.47	14.61
Trend	1204.56*	76.21	Trend	377.03*	45.04
R-squared	0.960		R-squared	0.972	

* and ** refer significance at 99% and 95%, respectively.

For advanced countries, there is a positive relationship between economic freedom and GDP per capita. One point increase in the index of economic freedom stimulates 126 U.S. dollar rise in GDP per capita. By the way, trend has also impact on income during the period in advanced countries. One year increase reflects as 1204 U.S. dollar rise on GDP per capita.

The obtained result for developing countries that we observe from Table 4, have no econometric meaning because of the low confidence level of the main coefficient. This result constraints us to make any inference about the relation between economic freedom and prosperity level in developing countries.

2.2. Results

According to regressions that include all selected countries within the determined time interval, we can conclude that both trade openness and economic freedom have positive correlation with income per capita of countries. That means participation in international

trade and movements towards freer economic environment have positive impact on generating income for nations as defined in liberal theories.

When we inspect the effect of trade openness by its own, the regression results illustrate that international trade is beneficial for both advanced and developing countries. These results are consistent with neo-liberal international trade theories which predict that trade creates external benefits for countries as mentioned in previous sections of this paper. On the other hand, it is observed that although trade openness rates and income per head levels are jointly increases for both of the groups, advance economies have more gains respectively with increases in openness rate. Thus, we can conclude that international trade theories are more appropriate to advance countries' economic forms that enjoy producing high value-added and relatively advantageous goods owing to their innovative economic structure. Furthermore, while the coefficient of trade openness rates of advance countries show approximately same pattern with general regression's openness coefficient, the developing countries' coefficient of trade openness is far from general regression' openness quotient which implies that advance countries has dominance in our aggregate dataset. It can be said that the studies using higher number of advanced countries may overestimate the effect of trade openness on GDP per capita for different economic structures.

In economic freedom case, our regression with aggregate dataset proves that economic freedom and income per head levels are positively correlated. Thus, we can express that the consequence is viable with the laissez faire belief in liberal doctrine. By the way, it should be mentioned that the results of regressions are only true for overall economic freedom score. So, interpreting the conclusions of the regression as all components of economic freedom is positively correlated with income per capita levels will be misleading. There is a need for further investigation to make any comment on the individual effects of subcomponents of economic freedom on economic wealth.

Thereto, while advance countries' income per capita levels react positively with the changes in economic freedom scores, we cannot make any inference about developing countries specifically because of the insignificant coefficient. Thus, likewise in trade

regression, we can conclude that advance countries dominate the aggregate model with their developed steady-state economic structures. On the other hand, even though the coefficient of freedom in developing countries' regression is a confusing result, it can be explained with the incomplete transformation of the market structures. Due to developing countries have been changing their economic structures since 1990s, they have not reached the adequate level of efficient market form in comparison with advance countries. In addition, some of the developing countries such as Poland, Ukraine, and Czech Republic are transition economies which are evolving into market economy. These countries shift up their economic structure after mid-90s and our econometric analysis are affected by those countries' economic fluctuations.

3. Conclusion

In this study, we try to address the arguments of free trade and free market theories of liberal doctrine by econometric analysis. Theoretically, participating in international trade and economic freedom are beneficial for countries and have positive effects on allocation of sources, specialization, and productivity. Our econometrical results prove that trade openness and economic freedom variables have significant and noteworthy positive effects on income per head. Both advanced and developing countries' GDP per capita values are positively related with trade openness rates. So it can be said that, as theory defines, international trade is one of the most crucial factor in increasing production and income. Thus, we can suggest that protectionist policies against trade should be abolished to increase overall welfare of countries and their citizens. On the other hand, as we expected, advanced countries gain more than developing countries from international trade. The major reason behind this conclusion can be their comparative advantages on high value-added products and strong structures of their economies which raise their profit from international trade. However, although developing countries have lower returns than advanced countries, they also have benefits from trade which are crucial for sustaining their economic development. But, in contrast to the liberal theories, these results imply divergence of advanced and developing countries rather than convergence by trade.

In economic freedom case, we found that GDP per capita level of countries have positively changed with their overall freedom scores in general regression that uses whole dataset. The result verifies that economic actors increase their efficiencies in free economic environment and thereby raises total welfare of countries. The advanced countries' regression also proves that prosperity level is related with economic freedom and confirms the theoretical belief about the benefits of free market on economy. Per contra, the regression of developing countries shows insignificance for economic freedom coefficient that constraint us making comparison between advance and developing countries.

To sum up, we can conclude that international trade and economic freedom are effectual on prosperity level of countries. But free trade and laissez faire phenomenon that is originated in developed world is more suitable for advanced economic structures rather than developing economies. Benefits of liberalization are higher for advanced countries and the gap between countries is widening by the freer economic environment.

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Understanding Child Labour in Cameroon

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Abstract

This study aims at understanding the phenomenon of child labour in Cameroon. In particular, we investigate characteristics and determinants of child labour. Using data from the Cameroonian survey on employment and informal sector, we find evidence of a division of child labour within households which is around sex and kinship relations, and which varies according to the type of household. The study also shows that child labour is determined by both the internal and external factors to the household. The time of work of children is a variable of adjustment dictated by the necessity of going beyond the level of subsistence income.

1. Introduction

The phenomenon of child labour in the world remains worrying. According to the last world estimation of the incidence of child labour carried out by the International Labour Organisation (ILO, 2005), more than 246 million children are working in the world. The Sub-Saharan Africa has the highest proportion with almost 1/3 under 14 years old children carrying out an economic occupation. Most of the countries have adopted laws and regulations to prevent child labour or to impose rigorous restrictions on it. The main part of these laws and regulations is inspired and guided by the norms adopted by the ILO. Despite all these efforts, child labour continues to be widespread all over the world.

In Cameroon, child labour and the phenomenon of child trafficking with the aim of exploiting their labour is a reality. According to the report of an investigation carried out in 2003 by the Sub regional Project of Fight against the Trafficking of Children in West and

Central Africa ''LUTRENA'', in collaboration with the Cameroon government and the ILO, young children were put under working conditions which sometimes can reach 18 hours per day for 3,000 CFA F[1] per month for some of them. The second survey on Cameroonian households carried out in 2001 has estimated at 20% the proportion of children in the age range 10-14 who are working, taking part in agricultural occupations and in the informal sector. In 2005, the results of the survey on employment and the informal sector confirm the extent of the phenomenon (40%).

Since the early 1980's, child labour gives rise to a new mobilization, in particular from international institutions, Non Governmental Organizations and the media. There is however the problem of the choice of definition,[2] which is itself related to the working conditions of children. From the works of Grotaert (1998), it emerges that in some African countries, child labour is considered as an apprenticeship for a better insertion in working life perhaps even an integration factor in the society. Worldwide, children are involved in multiform occupations: domestic work, hard work, factory work, sex exploitation for commercial purpose, street jobs, housework and handwork. The paper by Smith and Lou (2002) shows that in Australia, 10 years old pupils are engaged in well paid occupations. Singh (2001) emphasizes the significant presence of child labour of female sex in the food-producing sector in India. High rates of child labour are equally found in countries such as Ghana, Peru, Bolivia, Central African Republic and Salvador (O'Donnell et al. 2002). In Cameroon, ''WACAP'' and ''LUTRENA'', two associations which strive against child labour stress that thousands of children work in cocoa farms in Cameroon in 2008. The time spent by these children in work can vary according to the area (rural or urban). Children in the urban zone seem to combine education and work as it is confirmed by the works of Reynold (1991) for Ghana and Côte d'Ivoire.

The causes of child labour are numerous and various. They are intimately linked to the social and economic milieu in which these children live. Poverty seems to be the main

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[1] 1 US dollar = 412CFA F

[2] The United Nations International Children's Emergency Fund (1997) has elaborated a set of nine criteria to indicate work which can be termed as exploitation: a full-time work at a too early age, too many hours of work, works which exert excessive psychological, social and physical constraints, a poor salary, the taxation of an excessive responsibility, a job which hinder access to education, attacks to the child dignity and the self respect of children, a work which does not facilitate the full psychological and social opening up of the child.

cause of child labour as shown in a set of empirical studies (Canagarajah and Coulombes, 1997; Rimmar, 1992; Jensen and Niel, 1996; Blunch and Verner, 2000; Ray, 1999, 2000; Cockburn, 1999; Opukpara, 2006; Mwebaze, 2007) and the theoretical model of Basu and Van. The works of Basu and Van (1998) and Basu (1999) are among the most important studies supporting the causality relation between poverty and child labour. Their studies essentially focus on the living conditions of the household and the interaction between child labour and that of adults. Basu and Van (1998) have built up a model in which the decision of the head of the household to send children to school has a direct effect on the labour market. In this approach, child labour is considered as a consumption good used by the household to increase income when it starts decreasing below a certain threshold. Basu and Van model is built on two strong hypotheses: "luxurious axiom of poverty[3]" and "substitution axiom[4]" (see Basu and Van, 1998). The household decision to send children to work or to school depends on its economic situation. Education is then considered as an investment which should be financed and which obviously involves a cost. In a situation of imperfect capital market, the inability of parents to borrow money in order to finance their children education will force them to send them into the labour market (see Ranjan, 1999, 2001; Baland and Robinson, 2000).

Apart the household poverty, many other causes of child labour occur in the literature. *The failure of universal schooling:* The qualitative and quantitative weaknesses of educational infrastructures in most of the developing countries prevent children from having an appropriate education and provide children labour force. *The traditional aspect of child labour:* traditions and rigid social agreements also constitute a non negligible determinant of child labour. Work is considered as one of the most efficient means for children to learn the world and life (Ray, 2000). *The Gender:* Murray *et al.* (2004) point out that in many developing countries, a vicious circle links child labour to sexual discrimination. The relations and the sociocultural roles of sex are key factors structuring the nature and the importance of child labour. A study by Quisumbing and Otsuka (2001) in rural Indonesia shows that parents invest more in boys' education than girls' education. *The human capital*

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[3] The parents decide to send children to work if the family income without taking into consideration the contribution of children falls below the subsistence threshold.

[4] The child and adult labour forces are perfects substitutes in the labour market which is assumed to be completely flexible and therefore, the enterprise can determine its choice between the child labour force and the adult labour force in function of their respective salary.

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of parents is an important factor of putting children to work (Emerson and Souza, 2003). Parents who are in possession of a great potential of human capital are supposed to have a high income, increasing therefore the probability of sending their children to school rather than to the labour market. In addition, the nature of the parents' employment can have an influence on the decision of putting children in the labour market (Canagarajah and Coulombe, 1997; Wahba, 2000). *The size and the composition of the household* are equally a decisive factor of children participation to work. Large families without sufficient incomes to satisfy their needs, find their children involved in the labour market (Galli, 2001; Baghagha, 2002).

It appears clearly that child labour is a multidimensional phenomenon. Many works have been done on the topic. Even in Cameroon, several unpublished research works on child labour have been carried out. These ones have essentially tried to establish the link between households' poverty and child participation to the labour market. This approach of the analysis abounds in the literature of child labour but lacks of a consensual definition of child labour due to the complexity of the phenomenon. This study aims at bring additional light on child labour. The main objective is to identify the characteristics and determinants of child labour in Cameroon. We try to deal with the problem of definition by taking into account the time of children work. We will therefore have a look on the time effectively consecrated by children to these occupations in order to understand what can explain child labour supply in term of time of work.

The data used come from the survey on employment and informal sector conducted by the National Institute of Statistics in 2005 on Cameroonian households.

This study shows evidence of a division of child labour within households which is around sex and kinship relations, and which varies according to the type of household. The study also shows that child labour is determined by both the internal and external factors to the household. The time of work of children is a variable of adjustment dictated by the necessity of going beyond the level of subsistence income

The rest of this paper is organized as follow. Section 2 discuses methodology issue; section 3 present the characteristics of child labour in Cameroon while section 4 discuses the econometrical analysis of child labour. We end on the concluding note of Section 5

2. Methodology of the Study

2.1. Modeling the Determinants of Participation

On the theoretical point of view, households' poverty is the major determinant of child labour (see Basu and Van, 1998, 1999). Our econometric estimations of participation equation are based on the works of Basu and Van. These authors assume in their model an economy made up of N identical households each composed of one adult and one child. The preference called > of each household is defined by a binary function defined by the set:

$$(c,e)/c \geq 0, e \in \{1\} \tag{1}$$

Where c is the consumption of each member of the household and e the economic effort provided by the child which can take only two values 0 and 1.

Let us assume that s is the individual consumption of subsistence. The decision to send a child to work will be taken if and only if the individual consumption decreases below a subsistence threshold s. More formally, for all $\delta > 0$,

$$(c,0) > (c + \delta,1) \quad \text{if } c > s \tag{2}$$

and

$$(c + \delta,1) > (c,0) \quad \text{if } c < s \tag{3}$$

The household will choose a (c, e) combination which will maximise its function of preference under the following budgetary constraint.

$$2c \leq ew_c + w_a \tag{4}$$

Where w_a and w_c represent the adult income and the income stemming from the child's labour respectively. As the model is described, Basu and Van find the solution to the maximisation problem as follows:

$$c^*(w_a) = \begin{cases} \dfrac{w_a}{2} & \text{si } w_a \geq 2s \\[2ex] \dfrac{w_a + w_c}{2} & \text{si } w_a \prec 2s \end{cases} \tag{5}$$

$$e^*(w_a) = \begin{cases} 0 & \text{si } w_a \geq 2s \\ 1 & \text{si } w_a \prec 2s \end{cases} \tag{6}$$

It follows that if the adult income does not cover the minimum cost of subsistence, the child's effort will be needed to raise up the household income up to the subsistence threshold at least. In other words, this means that the decision to put a child to work will be taken if and only if the household income without the child contribution is below the subsistence income ws.[5]

Because of the substitution between labor market and schooling for children, we will simultaneously estimate the determinants of the decision of schooling and of putting the children to work, in order to take into account the interaction between these decisions. Several econometric methods give answers to this concern. We have among others the multinomial logistic models, sequential logistic models, bivariate probit models, etc. Each of these models has advantages and disadvantages.

From the fact that the possibilities of schooling and of child labour can be treated as interdependent choices, it seems judicious to us to use the bivariate probit model. This model permits to test the probability for children to work and/or to go to school. It takes into consideration the existence of possible correlated distributions between the equation of supply of child labour and that of schooling. It will equally permit to know whether the "joint" estimation gives significant differences as opposed to that of univariate probits for each equation. However, the estimation procedure through this method takes as the only alternative to child labour, the schooling. This may be considered as a limit of the model insofar as there are other situations in which children do not work and do not go to school. Nevertheless, in the case of Cameroon where the percentage of such children is very low (about 5.2%), we can neglect this situation without affecting significantly our results. This

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[5] Axiom of luxury of Basu and Van

choice comes within the scope of the works of Yacouba for Côte d'Ivoire, Lachaud for Burkina Faso, and Adjiwanou for Togo.

2.2. Modeling of the Supply Function: Time Of Children Work

There is a basic difference between the decision to work and the time of work. In most literature on child labour, emphasis is put on the explanation of the participation or to a certain extent the relations between the decisions to work and/or to be sent to school (Yacouba, 2001; Bougroum and Ibourk, 2003; Lachaud, 2005). The time of work is generally not taken into account. Our work intends to be a contribution to the analysis of the determinants of the time of children work.

At the household level, the intra-allocation theory of time is based on the fact that the household is at the same time producer and consumer of goods which it has produced itself (Mwebaze, 2007). Each household will try to maximize its utility. This utility depends on the household characteristics (μ) and on the consumption level of goods basket (Zj) produced by a combination of inputs of the goods market (Xj) and on the time of work (Hj) expressed in hours of economic work. The household will try to maximise the following utility function:

$$Max U = U(Z_1, Z_2, ..., Z_m, \mu \tag{7}$$

with

$$Z_j = f(X_j, H_j, Q_j, \alpha^i \tag{8}$$

where Qj represents the public goods supply and αi represents the individual characteristics of the household members who are assumed to be exogenous.

The constraints on the goods markets and the time of work can be written as follows:

$$\sum P_j X_j = Y = V + H_w * W \tag{9}$$

$$\sum H_j = H_m = H - H_w \tag{10}$$

The constraint on the goods market shows that the total expenditure on goods $\Sigma\, P_j\, X_i$ where P_1 is the vector of unit prices of goods X_j, should not exceed the total income (Y) of the household, which is equal to the sum of income off employment (V) and the employment income (W) multiplied by the number of hours of work (H_w). The time constraint indicates the total time used in the production of one unit of consumption ΣH_j where the total time of production of the household (H_m) is the difference between the total time available H and the time which is used for work H_w. The resolution of this maximisation problem leads to the following individual supply function of work:

$$H^i = H^i(P, W, \mu, Q_j, \alpha^i) \tag{11}$$

It clearly follows from this that the participation and the time of work are independent and reliant on exogenous variables.

In this way, the child characteristics being given, the household characteristics and the labour market efficiency, the putting of children to work will depend on the household total income, the household total available time for work and the household characteristics.

Empirically, the model can be defined as follow:

$$\begin{cases} H^i = \alpha^i\beta_1 + \mu\beta_2 + W\beta_3 + u_i & \text{si} \quad \alpha^i\beta_1 + \mu\beta_2 + W\beta_3 > 0 \\ \\ H^i = 0 & \text{si} \quad \alpha^i\beta_1 + \mu\beta_2 + W\beta_3 \leq 0 \end{cases} \qquad i = 1, ..., m \tag{12}$$

Where β_j is the vector of unknown parameters and u_i is the error term which follows a normal distribution having 0 as the mean and σ^2 as the variance. This specification corresponds to a left censured model at 0. It is a Tobit model which we shall estimate using the Maximum Likelihood.

2.3. The Data

The data used in this study are derived from the Survey on Employment and the Informal Sector (SEIS). This survey has been carried out from the 23rd may to 10th July 2005 on the

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whole national territory of Cameroon by the National Institute of Statistics. This survey aimed at examining in details the labour market, in view of refining the diagnosis of the implications of employment questions on poverty alleviation and to lay the foundation of the follow-up and the evaluation of policies and programmes decided on by the government (see survey report). The sample is made up of 18,708 under 18 years' old children whose 7152 are between 10 and 17 years old and among whom 3,546 are female (that is 49.6%) and 36% are male (that is 50.4%). According to the residence milieu, the sample is made up of 46% of children living in rural milieu and 54% living in urban milieu. Among the children having between 10 and 17 years old, there are 1,947 economically active children (27.2%) in the sample. These figures will be extrapolated at the national level to take into consideration the sampling stratification.

The different variables used for estimations are of several categories.

- The variables relative to the individual's characteristics which are: the sex, the age; the relationship with the household (biological child of the household head or of the spouse). This variable, under certain conditions, can explain the children participation in the labour market: we would then expect that the children given to households be more prone to participate in the labour market than biological children.

- The variables related to the household environment: the household income captured through a continuous variable, the residence milieu, the size and the composition of household. The child environment is indeed a factor which can have positive or negative impact on participation in the labour market.

- The variables related to the characteristics of the head of the household such as the level of education (which will be seized through a continuous variable "number of years in school"), the type of employment, the age and sex.

In all the models, the household income is apprehended through the adult equivalent income, which takes into account the size and the composition of the household. As a matter of fact, households having the same gross income do not have the same welfare if their sizes are different. Several methods of standardisation of income do exist among which the one of the OECD (Organisation for Economic Cooperation and Development)

which we shall use here and which allocates the weight of 1 to the first adult of the household (head of the household), then 0.5 to any additional adult (14 years old and more) and 0.3 for each child (less than 14 years old). The adult equivalent income will then be the total income of the household divided by the adjusted size of the household.

3. Characteristics of Child Labour In Cameroon

We are intending to present the inventory of fixtures of child labour in Cameroon. The analyses are in particular interested in the situation of occupation of children, in the living conditions of children who are economically active and in their conditions of work.

3.1. Situation of Children Occupation

The population of Cameroon is essentially young, the average age is about 22 years and half is under 17 years old. Among them, 36% is between 10 and 17 years, that is 18% of the total population. In this age group, more than 4 children out of 10 are economically active. The phenomenon is essentially a rural one and affects 1 child out of 2 (54.7%) with a greater incidence among girls (55.8%) than boys (53.6%). In urban milieu, the proportion of economically active children is three times lower than in rural milieu, but is still worrying. The situation is very different from one region to another. In this way, in Yaounde and Douala where the percentages of children in full-time education are higher, there are the weakest rates of participation, 7.8% and 13.8% respectively. In the Far North and the North, the figures are particularly alarming, with about 3 children out of 4 (75%) and 2 out of 4 (50%) involved in economic occupations respectively. Most of these children were forced to stop their studies for several reasons and in particular poverty. In the labour market they are essentially directed towards farm works or informal jobs to provide for their needs and those of their families.

Table 1: Occupation Rate of Children According to Sex and Age by Region and Residence Milieu

		Douala	Yaoundé	Adamaoua	Centre	East	Far-North	Littoral	North	North-West	West	South	South-West	Rural	Urban	Cameroon
Age	10 - 14 yrs old	9.1	4.2	32.0	28.5	39.5	75.8	38.9	40.1	39.6	30.9	39.7	8.2	51.7	11.8	**39.4**
	15 - 17 yrs old	20.6	13.0	54.2	40.4	46.0	72.9	40.7	64.1	54.4	52.8	55.8	20.3	61.0	23.7	**46.6**
Sex	Male	14.1	8.5	44.6	32.5	39.8	77.1	30.6	53.7	37.6	32.7	43.3	16.7	53.6	17.9	**41.8**
	Female	13.5	7.2	34.2	32.2	42.7	72.5	47.7	47.3	53.8	44.7	49.5	8.4	55.8	15.2	**42.1**
Total		13.8	7.8	39.2	32.4	41.4	75.0	39.6	50.1	45.3	38.7	46.2	12.8	54.7	16.6	**41.9**

Source: author from SEIS data

In total, young girls are slightly more involved in the labour market than young boys. Girls participation stands at 42.1% slightly above that of boys which is estimated at 41.8% in 2005 (significant statistical difference at 1%). The gap is observed in the South, East Littoral, North-West and West regions. According to the residence zones, girls are proportionally more active than boys in rural area and the situation is reversed in the urban area. The labour force of young girls would be highly used in farm works which are dominating in the Cameroon rural economy while boys would be more involved in informal occupations (trade and service) in the towns.

Rural exodus is indeed very important in Cameroon. Important migratory flows take effect in direction of towns looking for employment or training. The rate of immigration stands slightly at 35.4% on the whole territory. In urban centres almost one inhabitant out of two is a migrant. The under 18 years old children represent about 27% of the total of the migrants. Among the children of 10 to 17 years age bracket who have migrated to towns, girls are relatively more numerous (51.9%) than boys (48.1%). The occupation rate of native children (43.5%) is superior to that of migrants (33.5%) in rural area as well as in urban area. The inhabitants of rural areas are more present in the labour market, the occupation rate of that group stands at 58%, that is to say 16 points above the national average and 50 points above the level of the town of Yaoundé. In urban areas, irrespective of the migratory status, boys are economically more active than girls. The latter are less often natural children of the households' heads; they are confided and more often employed in non economic household works; this would justify their weak presence in the urban labour market.

Regarding the education, the percentage of 10-17 years old children in full-time schooling was only at 80.4%. The gap of schooling boy/girl at the national level is of 8-4 points in favour of the former (significant difference at 1%). Moreover, irrespective of the age, the region and the residence milieu, girls have a tendency for stopping their education earlier than boys (Figure A1); this justify partly their relatively high presence in the labour market. The percentage of children in full-time education is weaker in rural areas (76.4%); it moves away from its level in urban areas with 12 points and with 4 points from the national level.

The northern regions which moreover are identified as the poorest ones (ECAM, 2001) have the weakest percentages of children in full-time education (65.3% and 61.9%) the highest children occupation rates (75% and 50%) for the Far North and North respectively. The gap of schooling between girls and boys is more pronounced in these regions with only one girl out of two registered in the school system. At the national level, the percentages of 10-17 years old children in full-time education are globally weak in the regions where the rate of participation in the labour market is high and vice versa. Rural children and the oldest ones have the tendency for quickly leaving the school system. These rejected children by the education system and those who have not been able to get into the education system sustain the phenomenon of child labour.

About 80% of economically active children have not gone up to the secondary school (Table A1). A very high proportion (43.4%) is without education. These uneducated working children are more present in the rural economy which has about 87% of the total child labour force. In a general way, the children occupation rate decreases with the level of education. It is fairly high with uneducated children, probably less demanding as to the job which they accept to carry out.

An analysis based on the occupation status of children has permitted to distinguish children who are exclusively workers, children who combine work with school, children who are sent to school without any implication in the labour market and the children of leisure (not going to school and absent from the labour market). It emerges that children who exclusively work represent 14.4% of the total population of children having 10 to 17 years

old. Among the 80% of children who are sent to school, more than 27% and in majority the 10-14 years old children give part of their time to economic occupations. Children leave the education system as they grew up to enter the labour market. This is expressed by the weakest percentage of children in full-time education in the 15-17 years age bracket while the employment rate is the highest in that age group. Moreover boys are many more bi-active (29.4%) than girl (25.7%). The latter are on the other hand idler (7.4%) than boys (3%). The idle children certainly constitute a potential population for economic and non economic activities.

The bi-activity is essentially a rural phenomenon, 36% of rural children against 11% in urban zone hold simultaneously at the same time schooling and work, probably because of the incidence of poverty which moreover is very pronounced in rural milieu (55%[6] in 2007). As a matter of fact, agricultural incomes do not allow farmers to offer leisure time to their children. As a result, they are forced to work in order to contribute to the costs of their education.

The distribution of the children who work in the rural area and urban area being given, it is logical to notice that many of them are farm workers. This is more important for boys (77%) than girls (72%). The distribution of children who work by field of activity is as follows: 74, 8% in the primary sector, 9% in the industry, 7, 9% in trade and 8, 5% in services. It is important to mention that the quasi totality of children activities is carried out in the informal sector which has about 99, 7% of working children (74, 5% in the agricultural informal sector and 25, 2% in the non agricultural informal sector).

3.2. Living Conditions of Working Children

The link between child labour and the household poverty is widely and unambiguously recognized in the literature. In this paragraph, we are interested in the household income and the possession of durable goods of the household.

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[6] Published from "ECAM 3" on the National Institute of Statistics website

The household income is apprehended through the adult equivalent income as presented above. The quintiles have been ranked by wealth order. Thus quintiles 4 and 5 represent the relatively rich households; quintiles 1 and 2 refer to the poorest households. The statistical relation between the household income and the children occupation is apprehended through several series of bar charts. The abscissa (x-axis) is the quintile of adult equivalent income of households, calculated on different samples and the ordinate (y-axis) is the proportion of economically active children among children whom household belong to that quintile[7], in other words, it is the occupation rate of children per quintile.

The first set of graphs of figure A2 (Q) indicates the children occupation rate in function of quintile of income per capita per household to which they belong to. The form of the chart shows a negative correlation between the income per capita and child labour; this correlation is however less pronounced. In fact, more than 75% of working children live in households which do not belong to the poorest quintiles; moreover, about 9% of working children are from household belonging to the richest quintile. Two effects can explain these observations (Couralet, 2001): the first is the aggregation effect which can soften the real effect of the household current income. On the grounds of the disparities between the different strata, the current income of the household and its income expressed in terms of purchasing power can be different. For instance, the poorest urban households can have an income expressed in terms of purchasing power equivalent to that of the poorest rural households but with a higher current income, and consequently, not belonging to the quintile of lower income when they are calculated at the national level. In order to take into account this effect, "quintiles" of per capita income have been calculated by region and by residence milieu (Q-stratum set). We clearly observe that the aggregation effect is not insignificant (the Q-stratum set differs from the Q set). More than 47% are economically active in the poorest stratum, this rate moves away from the national mean by 5 points. As soon as one moves away from low income strata, the children occupation rate decrease; it stands at 14% on the less poor stratum. Moreover, more than half of the working children stem from a household located in a stratum belonging to the lower quintile, this confirms our expectations. The second is the endogeneity of the household income to the supply of child labour which clearly soften the correlation between the adult equivalent income of

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[7] All children who are domestic workers in a household where they live, for obvious reasons, have been excluded from the given sample.

the household and child labour. The idea being that for two households having the same income without children contribution, the one which a child has a paid job is richer than the one which does not have an employed child. To take into consideration this effect, we have once more calculated the per capita incomes for households which children income is observed in subtracting it from the total income of the household. The income-Q set which expresses this situation has the expected decreasing form. This means that households with low income resort more to child labour in order to increase the level of their welfare: that is the luxurious axiom put forward by Basu and Van (op.cit.).

Beside, an analysis based on the living conditions and living environment shows that the working children are mostly located in houses built with temporary materials (81, 5%). More than half of children living in such houses is working against 22, 6% in houses built with permanent material, 70% of children who work use traditional sources of energy (kerosene lamp, fire wood) as main mode of lighting and more than 60% of children using such modes of lighting are working children. These children do not have access to drinkable water. About 65% live in houses where the main sources of water supplying are wells, rivers, springs, etc. The work of children is more important in such houses; the activity rate stands at 56%, which is more than 14 points above the national average.

An analysis on the possession of durable goods shows that more than 45% of children who work live in households which do not have any radio set against less than 27% of unemployed children. More than 55% of children who are not exposed to this media are economically active. As to television, it touches only 15% of children who work; more than 52% of children who live in households without television set are in the labour market. Globally, 33% of Cameroon households (in majority rural ones) own neither a radio set, nor a television set; 60% of children living in these households supply the child's labour phenomenon. This remark explains the failure of awareness against child labour through audiovisual communication aids.

As to transport means, children who work have most of the time less access to cars and other motorized transport means when compared to the non working children. Many other durable goods such as gas heater, air conditioner, and refrigerator are not the privilege of

children who work. From this environment review, the rural and poor character of the phenomenon of child labour is confirmed.

3.3. Duration and Status of Job

The analysis of the time of children's work brings additional light to the comprehension of the phenomenon. The Statistical Information and Monitoring Program on Child Labor (SIMPOC) defines child labour as an economically active child under 12 that works 1 or more hours per week, an economically active child 14 and under that works at least 14 hours per week and a child 17 and under that works at least 42 hours per week. In all age groups, hazardous works and worst forms of work are prohibited.

Taking into account this classification brings the table 2 below which show that among those previously classified as working children, more than 30% are not, according to the criterion of time of work. The incidence of child labour is thus dropped from 41.9 percent to 28.9 percent. Overall, 15.5 percent of children, with 3.4 percent prohibited, work less than 14 hours weekly; 53.6 percent, with 34.6 percent prohibited, work between 14 and 42 hours weekly. A considerably proportion (more than 3 out of 10) spends more than 42 hours per week to economic activities.

As one can see, children work on average 34.5 hours weekly and the half of them work more than 35 hours weekly. As children get older, they allocate more time to economic activities. The number of working hours depends, as we can see below, on the type of activities, the sex of child and the milieu of residence.

Table 2: working hours per week

	Mean	Median	Less than 14h	14-42 hours	More than 42h	Total
10-11 years	29,64	30,00	3,4%	11,6%	3,3%	18,3%
12-14 years	32,66	32,00	7,3%	23,0%	12,3%	42,7%
15-17 years	38,86	36,00	4,8%	19,0%	15,3%	39,0%
Total	34,53	35,00	15,5%	53,6%	30,9%	100,0%

Note: 3.4% means that, among children who worked at least one hour during the reference period, 3.4% aged 10-11 worked less than 14 hours weekly during this period.

Source: author from SEIS data

Type of activities Several important properties of how children work are apparent in table 3. It appears that working children are mostly family helps; it's the case of 8 out of 10. The others are either on their own account (10 percent), or learner (7 percent). They are nearly 75 percent involved in agricultural activities and therefore working on plantations and farms. 25 percent of working children belong to the informal nonfarm private sector. They work either in the street (31.3 percent of them) or in market or a business local (36.1 percent) or at home (25 percent). Overall, only 1 child out of 10 works at home with or without a particular installation.

Working time varies by socioeconomic group, the type of business and the workplace. The children work on average longer (42 hours per week) when they are apprentices or Maneuver. This is further verified when the household head works in the informal sector. Children farmers work longer than those of non-agricultural informal sector and whatever the age group. This confirms the importance of child labor in rural areas. Younger children spend more time on economic activities within the household, while others tend to work longer hours either as traveling or in the market or professional installation.

Gender difference Gender differences in activities are considerable in the case of Cameroon. Boys generally have higher participation rates in market work than girls and lower participation rates in domestic work. The first are thus mostly to work for their own account while the seconds work as family helpers. As in the paper by Erik Edmonds (2007), the question to be asked is whether differences in activities reflect a fundamental difference in how girl time allocation decisions will be made with respect to the household's economic environment? As a matter of fact, girls seem to allocate less time in

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economic activities than boys. Girls work on average 5 hours less than boys. In order to understand this difference, we will consider separately boys and girls in econometric analyses

Urban – rural difference The research challenges associated with gender also arise with urban-rural data. Children tend to work more and for longer hours in rural than urban areas. As we showed above, 54.7 percent of children 10-17 years are in the labor market in rural areas against 16.6 percent in urban areas. In rural areas, mostly working children are in the agricultural sector (82.6 percent) as family helpers and thus spend their time in farms. The strong presence of children in agricultural activities justifies the difference between working time observed in rural and urban areas. Once again, the breakdown by place of residence in the econometric analyses would better understand the factors explaining the time allocation of children in both regions.

Table 3: Number of working hours according to the type of work, the sex and the residence milieu

		Working weekly hours (mean)				Proportion of children
		10-11 years	12-14 years	15-17 years	All	
Socioeconomic Group	Own account	31,72	30,04	39,05	36,15	10,3%
	Family helper	29,67	32,59	37,41	33,52	82,8%
	Apprentice / Laborer	15,06	33,78	45,12	41,77	6,9%
Business Type	Private agricultural	30,39	33,98	39,00	34,90	74,6%
	Private nonfarm	23,64	28,09	38,31	33,13	24,6%
	Other	3,00	36,11	44,79	41,97	0,8%
workplace	hawker/Highway	32,44	34,91	41,42	37,14	9,6%
	Home	34,71	31,84	29,22	31,70	9,8%
	Business place/Market	18,03	35,36	43,39	39,06	9,4%
	Plantation/Fram	28,77	32,25	38,79	33,97	69,7%
	Other	4,79	25,48	40,77	33,79	1,6%
Sex	Male	33,70	38,27	39,84	37,94	49,9%
	Female	24,39	27,78	37,87	31,12	50,1%
Residence milieu	Rural	30,22	33,79	39,62	35,19	86,8%
	Urban	20,14	23,20	35,74	30,18	13,2%
Total		29,64	32,66	38,86	34,53	100,0%

Source: author from SEIS data

4. Determinants of Child Labour in Cameroon

Child labour and education demand are partially exclusive. The time of one of these occupations is partly taken from the one of the other occupation; It then obvious that their determinants are similar. For several authors (Basu, 1999; Baland and Robinson, 2000;

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Grigoriou and Graziosi, 2008), the decision to allocate the child's time results from an inter-temporal compromise between the education and the work. The parents who decide on the child's time are going to arbitrate between the investment in human capital of their children and, considering the expected returns on education and the current income drawn from child labour. The model proposed by Boland and Robinson (2000) specifies the role of parents in the decision of child labour supply.

Due to the imperfection of the capital market, parents cannot guarantee loans on the future incomes of their children. If the parents' income and their degree of altruism are sufficiently high to be thinking of leaving their children a material legacy superior to the amount of the education expenditures, parents are going to determine the education demand, that is the child labour supply, in order to maximize the wealth of the descendants (Boland and Robinson, 2000). They can then finance the education of their children in reducing the material legacy (which the return is the capital remuneration rate). Consequently, they are going to determine child labour supply in making equal the material legacy return to that of the legacy in human capital (the education).

Moreover, if the income and/or the degree of altruism of parents are weak, the education expenditures are made to the detriment of the household current consumption. Parents then determine the child labour supply in making equalizing the marginal utility of the household current consumption to the one of child future income (Couralet, 2003). In this case, an increase in the parents' income results, ceteris paribus, in a decrease in the child labour supply. For all that, the return of education keeps on having an effect on this supply since the child future income, and then his/her marginal utility depends on it. In this approach, parents will be forced to send their children to work in order to face a transitory drop of their income (Basu and Van, 1998), even if their present total income would allow them not to do that.

4.1. Econometric Approach of Participation in the Labour Market

The participation equation of children in the labour market is estimated through a bivariate probit model which takes into consideration, not only child labour, but also his/her

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interaction with education. Child labour in this paragraph does not take into consideration non economic works. The household current income (without the off employment income) is apprehended through the adults' income divided by the adjusted size of the household and instrumented to take into account its endogeneity to child labour. The effect of human capital returns is taken into consideration through the level of education of parents (formal human capital) and the type of parents' employment (to take into account informal human capital).

Globally, the different estimations (extrapolated on the entire population) presented in table 4 are highly significant as confirmed by the Chi Square test. Moreover, the rho coefficient between the child labour and schooling equations are negatively significant. This then justify the use of the bivariate probit and validates the hypothesis of the existence of unobserved factors which would act upon the two activities in opposite directions.

Impact of the child characteristics Because of the small human capital of working children, the works that they carry out are generally physical and manual tasks which do not necessitate a particular training (agriculture, informal activities). This is what justify, as we were expecting it, that the marginal propensity of children to carry out a job increases with age, except among boys and in city dwellers where child age seems not to influence his/her job status but rather his/her schooling. The interpretation may be that the more a child grows up, the more he/she is apt to work. This physical and manual aspect of child labour renders them vulnerable in the labour market for, as soon as the strength reduces (old age), the children who work (without any specific training nor education) will be sent out of the market due to his/her obsolescence; the hope of a more decent lucrative job becomes improbable in future (theory of human capital and of the filter).

The sex of the child does not have any effect on his /her probability of carrying out an economic activity. However, the schooling of girls is significantly less likely than that of boys as well as in the rural area than in the urban one. The work of girls would originate from a lack of their schooling. The biological status or not of the child seems not to influence the participation decision of the latter in the labour market but the schooling decision is significantly dependent on it. The absence of biological tie with the household

head or his/her spouse reduces the schooling probability of the child. The presence in the father's or mother's household of the child would be an asset for his /her schooling; this then justify the children mobility for economical purposes. The work of confided children permits the schooling of the household head children.

Family setting and environment In the empirical literature of child labour, the family environment is an important factor of the phenomenon. The size and composition of the household, the place of residence and the household income are often the most tested variables in the literature (Ranjan, 2000; Yacouba, 2001; Lachaud, 2005; Khatleen at al., 2006). The case of Cameroon as shown in this study confirms the influence of the family environment on children labour.

The probability for a child to work reduces as the size of the household increases. Its effect on the schooling is mixed; it is positive or null depending on whether we distinguish boys from girls or the urban area from the rural one. However, this negative effect of the household size on the labour of children would be attributable to the number of non working adults of the household. As a matter of fact, children work increases significantly with the number of occupied working adults (women and men), thus showing the dragging effect of the adults' work. This result is not surprising with regards to the weight of the informal sector (more than 90%) in the Cameroonian economy and to the interaction between child labour and that of the other members of the household put in a prominent position by Marco Manacorda (2006). In the same way, the presence of other children (boys and girls whose ages are between 0 and 17 years old) in the household increases more often the probability for a child to work, irrespective of his/her sex and place of residence.

The analysis of the income effect of the household adults' activity on child labour is strongly imperfect and eventually biased. For all that, one can reasonably think that the bias is not so strong in such a way that the correlations established in this section would be unnecessary. The variable used in the estimations is the logarithm of the activity income subtracted from the observed income of children who work all over the adjusted size of the household. The instruments used are durable goods owned by the household, that is the

number of cars, the refrigerators, the air conditioners, the quality of the floor (temporary or permanent), the type of light used (electricity or not). These durable goods are of a quasi structural quality and for that, the possibility that children would have contributed to get them is only weakly established. Their choice is made thanks to factorial analyses techniques which we shall not introduce here, and equally in function of what is generally adopted in the literature (Couralet, 2003). All these estimations (including the instrumentation equation of income) take into consideration the regional specific effects.

The need to instrument income is without ambiguity. In fact, the estimated errors of the regression of the endogenous variable (here the logarithm of income) on the instruments and the exogenous variables of the initial model, have been reintroduced in the initial model. The null hypothesis of the test of exogeneity of Hausman-Wu-Durbin of nullity of the coefficient of this new variable is rejected (table 4). It appears clearly that the household income is endogenous to labour and schooling of children and this is true for both sexes and for all the places of residence. The results of the equation of the 1st step (table A4) confirm the pertinence of the chosen instruments. Their validity (at 5% level of significance) is guaranteed according to the Sargan test of restrictions. The result of this test, which is run through the regression of the estimated errors of the model in two steps on the exogenous variables and the instruments, are given in the table A5 in annex.

Table 4 below shows that in all the models estimated, the instrumented income has the expected and significant effect (negative for the supply of children work and positive for the schooling). This effect is confirmed in many studies carried out on developing countries (Yacouba, 2001; Couralet 2003; Lachaud, 2005). When the children who are household heads and who can take themselves the decision to work are excluded, the same effects of income are observed. This confirms the luxurious axiom of Basu and Van (1979) which states that the household resorts to children work when its income is below a certain threshold of subsistence.

Impact of the characteristics of the household head All things being equal, child labour is significantly influenced by the socio demographic characteristics and the socioeconomic group of the household head.

Children living under a woman authority have the lowest propensity to participate in the labour market. This result is also observed when we break up the sample by sex and by place of residence. The level of education of the household head, given by the number of successful years of study, is one of the factors widely accepted in the literature as responsible of the participation of children in the labour force: the more it increases, the more children are spared from the labour market. As a matter of fact, the fact that the parents are educated increases their opinion on school, favors their access to the credit markets, increases their chance of getting a good job and thus gives an incentive environment to children in the increment of their human capital. The empirical results (Table 4) globally confirm this theoretical proposition. The level of education of the household head in which the child lives is highly significant in the explanation of their access to the labour market or to the school system. The more level of education of parents is low, higher is the probability for the child to work to the detriment of his/her schooling. These results confirm the theoretical proposition of Baland and Robinson (2000)

Moreover, the socioeconomic group of the household head influences in a significant manner the decision of sending children into the labour market. The mode of organisation of the family economy is more susceptible of mobilizing children when the household head is employed, comparatively to the situation when the latter is jobless. The effect is higher when the household head works in the informal sector. One could think that in Cameroon, the informal human capital of parents is transferred to the children through the work of children. In rural area on the other land, the socio economic group effect of the household head on the children activity situation is mixed and sometimes contradictory to the national trend.

Impact of the place of residence When the standard of living and the household composition, the socio economic categories of the household head and the child characteristics are given, the geographical location influences the activity of the offspring. So, a child in a rural area will have greater probability of working than the one living an urban zone, all things else being equal.

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Table 4: BIPROBIT Estimations of the Structural Equations of Access to the Labour Market and to the Education System for the 10-17 Years Old Children in Cameroon

	National		Girls		Boys		Rural		Urban	
	WORK	SCHOOL	WORK	SCHOOL	WORK	SCHOOL	WORK	SCHOOL	WORK	SCHOOL
LNREVENU	-0,554***	1,039***	-0,876***	1,143***	-0,466***	0,560***	-0,701***	0,774***	-0,635***	0,927***
	(0,164)	(0,218)	(0,157)	(0,190)	(0,141)	(0,187)	(0,152)	(0,193)	(0,149)	(0,196)
EDUCCM	-0,042**	0,165***	-0,016	0,163***	-0,008	0,124***	-0,004	0,150***	-0,012	0,136***
	(0,019)	(0,022)	(0,017)	(0,018)	(0,016)	(0,019)	(0,016)	(0,019)	(0,018)	(0,019)
EDUCCM ^{2}	0,002*	-0,010***	0,002*	-0,009***	-0,001	-0,006***	0,000	-0,008***	0,000	-0,007***
	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)	(0,001)
SALFOR	0,946***	-1,835***	1,197***	-1,896***	0,733***	-0,820**	1,082***	-1,182***	0,879***	-1,498***
	(0,310)	(0,399)	(0,282)	(0,338)	(0,254)	(0,347)	(0,282)	(0,365)	(0,263)	(0,349)
INDFOR	0,505	-2,387***	1,586***	-2,563***	0,385	-1,408**	-4,655***	3,850***	1,163***	-2,199***
	(0,489)	(0,602)	(0,496)	(0,576)	(0,538)	(0,619)	(0,367)	(0,514)	(0,432)	(0,543)
INDINFNAGR	0,813***	-1,523***	1,041***	-1,542***	0,812***	-0,870***	1,006***	-1,118***	0,925***	-1,282***
	(0,236)	(0,292)	(0,213)	(0,254)	(0,195)	(0,256)	(0,213)	(0,271)	(0,200)	(0,259)
INDINFAGR	0,861***	-1,366***	1,017***	-1,292***	0,771***	-0,771***	0,944***	-1,023***	0,814***	-0,979***
	(0,191)	(0,251)	(0,170)	(0,205)	(0,157)	(0,205)	(0,169)	(0,216)	(0,172)	(0,213)
DEPIINFNAGR	0,734***	-1,386***	0,691***	-1,401***	0,740***	-0,917***	0,783***	-1,138***	0,687***	-1,225***
	(0,244)	(0,314)	(0,232)	(0,270)	(0,203)	(0,265)	(0,236)	(0,291)	(0,209)	(0,268)
DEPINFAGR	1,124***	-0,420	1,154***	-0,721*	0,718***	-0,514	1,102***	-0,610**	0,745**	-1,059***
	(0,235)	(0,411)	(0,293)	(0,375)	(0,230)	(0,317)	(0,229)	(0,297)	(0,357)	(0,410)
AGE	0,148***	-0,167***	0,149***	-0,217***	0,141***	-0,158***	0,131***	-0,186***	0,162***	-0,213***
	(0,017)	(0,021)	(0,016)	(0,019)	(0,015)	(0,019)	(0,013)	(0,017)	(0,015)	(0,019)
SEXE	-0,015	0,458***					0,045	0,427***	0,068	0,204**
	(0,080)	(0,101)					(0,063)	(0,079)	(0,069)	(0,082)
BIOLOGIQUE	0,024	0,343***	0,079	0,452***	-0,033	0,318***	0,100*	0,307***	-0,050	0,462***
	(0,072)	(0,086)	(0,058)	(0,065)	(0,058)	(0,068)	(0,058)	(0,068)	(0,058)	(0,064)
SEXECM	0,294***	-0,350***	0,193**	-0,634***	0,383***	-0,335***	0,225***	-0,474***	0,332***	-0,496***
	(0,092)	(0,109)	(0,077)	(0,101)	(0,076)	(0,098)	(0,077)	(0,099)	(0,078)	(0,100)
TAILMEN	-0,236***	-0,051*	-0,211***	0,048**	-0,200***	0,010	-0,242***	0,025	-0,168***	0,040*
	(0,028)	(0,028)	(0,024)	(0,024)	(0,023)	(0,026)	(0,027)	(0,027)	(0,021)	(0,024)
FEMOCC	0,436***	-0,059	0,674***	-0,197***	0,398***	-0,126**	0,498***	-0,089	0,537***	-0,221***
	(0,054)	(0,064)	(0,052)	(0,058)	(0,046)	(0,055)	(0,049)	(0,056)	(0,051)	(0,059)
HOMOCC	0,345***	-0,098	0,501***	-0,271***	0,308***	-0,153***	0,468***	-0,149**	0,342***	-0,265***
	(0,054)	(0,074)	(0,054)	(0,061)	(0,050)	(0,058)	(0,052)	(0,062)	(0,053)	(0,060)
RURAL	-0,403***	-0,174*	-0,252***	-0,095	-0,196***	-0,161**				
	(0,076)	(0,091)	(0,067)	(0,079)	(0,065)	(0,079)				
FILLE0	0,191***	0,049	0,069**	-0,030	0,160***	0,052	0,156***	0,025	0,101***	-0,013
	(0,041)	(0,046)	(0,035)	(0,039)	(0,034)	(0,042)	(0,037)	(0,042)	(0,034)	(0,040)
FILLE10	0,214***	0,384***	0,133***	0,185***	0,130***	0,151***	0,227***	0,190***	0,049	0,172***
	(0,052)	(0,069)	(0,045)	(0,052)	(0,043)	(0,057)	(0,045)	(0,053)	(0,045)	(0,057)
FILLE15	0,116*	0,126	0,072	0,021	0,100*	0,176**	0,136**	-0,008	0,022	0,114*
	(0,061)	(0,082)	(0,055)	(0,063)	(0,055)	(0,075)	(0,053)	(0,064)	(0,054)	(0,065)
GARC0	0,225***	0,132***	0,144***	0,023	0,167***	0,072*	0,211***	0,008	0,101***	0,079*
	(0,044)	(0,050)	(0,037)	(0,040)	(0,035)	(0,041)	(0,038)	(0,042)	(0,037)	(0,041)
GARC10	0,198***	0,215***	0,113**	0,093*	0,143***	0,179***	0,159***	0,101*	0,116***	0,137**
	(0,048)	(0,063)	(0,046)	(0,053)	(0,039)	(0,056)	(0,045)	(0,053)	(0,040)	(0,054)
GARC15	0,103	0,096	0,055	0,041	0,140***	0,044	0,108**	0,086	0,119**	0,051
	(0,063)	(0,069)	(0,060)	(0,066)	(0,048)	(0,061)	(0,053)	(0,066)	(0,051)	(0,056)
RESIDUS	0,591***	-1,022***	0,937***	-1,150***	0,514***	-0,508***	0,734***	-0,731***	0,710***	-0,931***
	(0,167)	(0,223)	(0,160)	(0,193)	(0,143)	(0,189)	(0,154)	(0,195)	(0,152)	(0,199)
_cons	-1,891***	1,198***	-1,660***	1,717***	-2,247***	2,013***	-2,558***	2,194***	-2,557***	1,826***
	(0,339)	(0,415)	(0,329)	(0,367)	(0,300)	(0,399)	(0,307)	(0,374)	(0,320)	(0,387)
Rho		-0,460***		-0,369***		-0,608***		-0,399***		-0,534***
		(0,049)		(0,043)		(0,045)		(0,042)		(0,044)
Observations		7 151		3 546		3 605		3 126		4 025
Log-Likelihood		-2 113 176,95		-2 674,60		-2 676,93		-2 829,94		-2 540,97

Note: WORK child who works; SCHOOL Child who goes to school; LNREVENU logarithm of the adjusted income without the children contribution; EDUCCM Number of years spent in school by the household head; SALFOR Wage earner in the informal sector; INDINFNAGR Non agricultural informal independent; INDINFAGR Agricultural informal independent; DEPINFNAGR Non agricultural informal dependent; DEPINFAGR Agricultural informal dependent; AGE Age of the child; SEXE Sex of the child; TAILMEN Size of the household; FEMOCC Number of adults working; HOMOCC Number of adults who are jobless; BIOLOGIQUE Biological child of the household head or of his/her spouse; SEXCM Sex of the household

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head; AGECM Age of the household head; RURAL Rural area; FILLE0 Number of girls having less than 10 years old in the household; FILLE10 Number of girls between 10 and 14 years old; FILLE15 Number of girls between 14 and 17 years old; GARC0 Number of boys having less than 10 years old in the household; GARC10 Number of boys between 10 and 14 years old; GARC15 Number of boys between 14 and 17 years old; Regions fixed effects included. The standard deviations are in brackets. Level of significance: *** p< 0.01, ** p< 0.05, * p< 0.1; Source: author from SEIS data

4.2. Econometric Approach of Child Labour Supply

Generally, the economic theory first studies the individual decision of participation in the labour market and then the number of offered hours, this participation being given. A review of the empirical and theoretical literature on child labour shows that most of the studies carried out on the issue have not focused on the time allocated to work. One of the contributions of the present work in comparison with previous researches will consist in looking into that aspect of the problem.

The theoretical corpus generally used to analyse the supply of labour is drawn from the neoclassical theory according to which the individual is assumed to allocate his time to paid occupations (employment) and to unpaid ones (wrongly called leisure). He maximizes his utility which is assumed to be function of his consumption and of the time he allocates to leisure under the constraint of the total available time, of the price system and the budget. This analysis may seem inappropriate for the child labour case, being given that the participation of the latter in the labour market depends on several parameters such as the household characteristics, those of the head of the household just as the residence place as it is highlighted in the previous paragraphs.

These variables which determine the children participation in the labour market are, without any doubt, the same that would determine the time allocated by them to economic activities. That is what this paragraph wants to test. The estimations are firstly done at the national level, then in a disintegrated manner on the sex and the place of residence. The time of work being censured at the left of zero, the use of the TOBIT model is then appropriate. To take into consideration the endogeneity of income which has already been raised up, we use the two steps IVTOBIT model (Tobit with endogenous variables). The results of the different estimations are given in table 5.

Table 5: IVTOBIT Estimations (Tobit Model with Endogenous Variables) of Logarithm of Time of Economic Work of 10-17 Years old Children in Cameroon

LNTRAVAIL	National	Enfants chefs de ménages exclus	Girls	Boys	Rural	Urban
LNREVENU	-2,173***	-2,059***	-2,968***	-1,582***	-2,263***	-2,365***
	(0,374)	(0,379)	(0,583)	(0,497)	(0,528)	(0,640)
EDUCCM	-0,055	-0,066*	-0,078	-0,031	-0,019	-0,061
	(0,039)	(0,039)	(0,056)	(0,054)	(0,048)	(0,075)
EDUCCM squar	0,003	0,003	0,009**	-0,002	0,003	0,002
	(0,003)	(0,003)	(0,004)	(0,004)	(0,004)	(0,005)
SALFOR	2,732***	2,381***	3,505***	2,155**	2,892***	2,724***
	(0,627)	(0,622)	(0,959)	(0,841)	(0,854)	(1,053)
INDFOR	3,440***	3,029**	4,575***	1,437	-17,630***	4,039**
	(1,221)	(1,224)	(1,595)	(1,984)	(1,700)	(1,746)
INDINFNAGR	2,618***	2,302***	2,877***	2,400***	2,861***	2,723***
	(0,455)	(0,450)	(0,699)	(0,611)	(0,669)	(0,728)
INDINFAGR	2,526***	2,177***	2,673***	2,346***	2,481***	2,790***
	(0,377)	(0,370)	(0,552)	(0,524)	(0,523)	(0,712)
DEPIINFNAGR	1,835***	1,566***	1,849**	1,956***	1,866***	1,923**
	(0,481)	(0,484)	(0,779)	(0,610)	(0,683)	(0,774)
DEPINFAGR	2,128***	1,647***	3,273***	1,634***	2,287***	2,678**
	(0,491)	(0,551)	(0,736)	(0,618)	(0,597)	(1,224)
AGE	0,483***	0,495***	0,485***	0,481***	0,385***	0,670***
	(0,032)	(0,033)	(0,053)	(0,048)	(0,039)	(0,059)
SEXE	0,185	0,163			0,188	0,200
	(0,157)	(0,157)			(0,187)	(0,292)
BIOLOGIQUE	-0,192	-0,291**	-0,055	-0,334*	0,237	-0,695***
	(0,133)	(0,137)	(0,192)	(0,188)	(0,170)	(0,237)
SEXCM	1,002***	1,071***	0,837***	1,237***	0,525**	1,473***
	(0,192)	(0,199)	(0,296)	(0,257)	(0,223)	(0,358)
TAILMEN	-0,586***	-0,623***	-0,553***	-0,641***	-0,606***	-0,639***
	(0,057)	(0,057)	(0,085)	(0,079)	(0,076)	(0,091)
FEMOCC	1,575***	1,555***	2,033***	1,255***	1,225***	2,146***
	(0,115)	(0,116)	(0,179)	(0,151)	(0,130)	(0,236)
HOMOCC	1,148***	1,149***	1,335***	1,015***	1,295***	1,204***
	(0,120)	(0,118)	(0,173)	(0,170)	(0,165)	(0,208)
RURAL	-0,809***	-0,829***	-0,945***	-0,710***		
	(0,155)	(0,157)	(0,228)	(0,212)		
FILLE0	0,380***	0,415***	0,154	0,547***	0,488***	0,328**
	(0,084)	(0,084)	(0,126)	(0,115)	(0,102)	(0,152)
FILLE10	0,346***	0,363***	0,241	0,459***	0,593***	0,074
	(0,106)	(0,106)	(0,161)	(0,146)	(0,126)	(0,196)
FILLE15	0,197	0,254**	0,139	0,286	0,262*	0,136
	(0,127)	(0,127)	(0,187)	(0,190)	(0,156)	(0,227)
GARC0	0,447***	0,492***	0,384***	0,541***	0,501***	0,468***
	(0,086)	(0,086)	(0,126)	(0,120)	(0,108)	(0,153)
GARC10	0,369***	0,395***	0,212	0,478***	0,403***	0,508***
	(0,099)	(0,099)	(0,163)	(0,128)	(0,126)	(0,166)
GARC15	0,325***	0,353***	0,222	0,425***	0,172	0,585***
	(0,124)	(0,123)	(0,215)	(0,160)	(0,158)	(0,209)
_cons	-5,778***	-5,687***	-4,038***	-6,806***	-5,986***	-9,974***
	(0,830)	(0,833)	(1,285)	(1,114)	(1,091)	(1,478)
RESIDUS	2,295***	2,220***	3,140***	1,691***	2,334***	2,600***
	(0,377)	(0,383)	(0,591)	(0,500)	(0,534)	(0,649)
Echantillon	7 151	6 976	3 546	3 605	3 126	4 025
Obs non censurées	1 932	1 857	927	1 005	1 247	685
Obs censurées	5 219	5 119	2 619	2 600	1 879	3 340
Log-Likelihood	-16 031,77	-15 452,47	-7 674,63	-8 291,50	-8 062,25	-7 800,41

Regions fixed effects included. The standard deviations are in brackets. Level of significance: *** p< 0.01, ** p< 0.05, * p< 0.1; Source: author from SEIS data

Without any surprise, the variables globally act in the same direction on the time allocated to work and on the participation. In all the estimated models, a reduction of the child time of work is the result of an increase in income, an increase of the household size or of the place of residence, and that of the level of education of the household head which, most often is not even significant. So, a 1% increase of the adults' income reduces more than 2 hours the weekly time allocated to child labour. This drop is more important among girls (about 3 hours) than among boys (about 1 hour and 30 minutes). In urban area, the time of work is slightly more sensitive to a variation of the household income than in the rural area. Moreover, an additional individual in the household reduces the children time of work of about 0.6%. A gain which is more beneficial to boys (-0.64%) than girls (-0.55%). When compared to the rural area, the time of work of children in urban areas is generally lesser (0.8 below); Girls are the first beneficiaries of this reduction of economic activities intensity when we go from villages to cities. This reduction of the supply of girls' labour is quickly compensated by household works in which they are most often transferred.

On the other hand, the socio economic class of the household head and the composition of the household substantially increase the time of child work. Thus, an additional working adult in the household accelerates the child labour supply; the effect is more perverse when the additional person is a woman. As a matter of fact, an additional working woman increases the time of child labour by 1.57% against 1.15% for an additional working man. The supply of girls labour is particularly influenced by the number of adult employed women of the household; when this number increases, girls allocate more time to work. The phenomenon is observed among boys when the number of adult employed men increases. There would be a skill transfer phenomenon from adults towards children, by gender, in Cameroonian households.

The child age has a significant effect on the child time of work; the grown up children give more time to economic works; The biological tie of the child with the household head reduces the number of hours allocated by young boys to economic activities (-0.33%). Similarly, the time allocated to work by children living in urban areas diminishes by 0.69% when they live with their real parents. This result confirms the hypothesis according to which the participation in the socio-economic occupations of households constitutes one of

the main causes of the mobility of children: the confided child labour permits the schooling of the household head children.

Children living under the authority of a woman (head of the household) give less time to work in comparison with those living in households headed by men; women heads of households put a lot of time into domestic works in order to allow the children to have more time for their studies. In these households, children have higher and significant probabilities of going to school. We find again here a classical sociological result concerning the preponderant role of the woman in the education of children.

5. Concluding Remarks

Questions on child labour are still a major concern in developing countries in the sight of the efforts put in on either side to reduce this phenomenon for lack of eradicating it. In the Cameroon context, the present study has intended, on the basis of a survey on employment and the informal sector carried out in 2005 to find the characteristics and the determinants of child labour. As regards the methodology, we have used descriptive statistics on the one hand to characterize child labour and the BIPROBIT and IVTOBIT models to estimate the determinants on the other hand.

The results of the descriptive statistics have given prominence to the great features of a division of child labour within households which is around sex and family relations, and which varies according to the type of household. The sexual division of labour is coupled with an allocation of school and household occupations among children: the work of one permits the schooling of other. The results gotten from the econometric estimations indicate that child labour results from the union of external and internal factors of the household: (i) the sex, the level of education, the kinship relation, the age of the child; (ii) the gender, the level of education, the age and the type of job of the household head; (iii) the income, the geographical locatilisation and the composition of the household. The formulated hypotheses have been globally confirmed and are in accordance with the results of the works of many authors on child labour in Sub-Saharan Africa. Moreover, it emerges from our work that the children time of work could be an adjustment variable dictated by

the necessity to exceed the level of subsistence income. It seems indeed that: (i) the children time of work diminishes with the increment of the per capita income of adults in the household; (ii) the type of job of the household head has an influence on the variation of child labour duration and the density of the employment (number of occupied people) within the families is positively correlated to children time of work; (iii) the child labour duration decreases systematically with the increment in the level of instruction of the household head; (iv) the child labour time decreases with the size of the households.

With regard to the above results, the campaign against child labour should continue to be in Cameroon the major preoccupation of the authorities as well as that of the non governmental organisations which have been doing everything possible against child labour. As a matter of fact, we should not forget that the proliferation of child labour has harmful consequences on the same children, on households from which the children belong and on the whole society. Child labour can have a negative influence on human capital formation of agents who represent the economic future of the country. In order to fight efficiently this plague, the following urgent measures should be taken:

- The Cameroon Government should try to do in such a way that, contrary to what is observed now, the different participants in the campaign against child labour have concerted actions. In this case, we should continue identifying the areas where this phenomenon is still going on in Cameroon and we should also continue denouncing these practices which degrade the children involved.

- The information, the sensitisation and the mobilisation of the population against child labour can constitute an efficient arm. For that, the authorities should finance the permanent broadcast of adequate messages against child labour in public and private media. Contrary to what is observed at the moment, information against child labour would not be in the way.

- The pursuit of the policy of universal schooling should continue having a particular attention of the policy makers. It has been found that child labor is prominent in areas where the dropout rate is high because of the lack of schooling supply. This shortage, which is too pronounced in the northern part of the country, should be corrected. It follows that the amelioration of school infrastructures and the

reduction of the cost of education, in particular secondary education, would not be neutral vis-à-vis child labour alleviation.

- The promotion of employment and the professional training of parents and other jobless adults and/or uneducated could contribute in increasing their chance of getting an employment. In that way, the Cameroon Government fund to provide retraining should develop a policy of professional training in that category of Cameroonians, and in the same time, it should increase its financing means of self-employment.

- Legal proceedings should be engaged against all those that are involved in the process of child labour and especially in the worst form. For that, all the participants in the judiciary system should be called on.

A mobilisation of means in order to implement the above recommendations could allow continuing an efficient fight against child labour and especially its causes.

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Appendix

TableA1: distribution of "working children" according to the level of education by residence milieu

%	Rural	Urban	Cameroon	Rate of occupation
Uneducated	47.2	19.0	43.4	63.9
Primary	35.4	42.0	36.3	40.0
1st cycle secondary	12.9	22.2	14.1	33.4
2nd cycle secondary	3.0	11.3	4.1	18.2
Higher Education	1.5	5.6	2.1	13.6
Total	100	100	100	41.9

Source: author from SEIS data

Table A2: number of hours work allocated to the main employment per sex and according to the status of schooling

	Male		Female		Total	
	Mean	Median	Mean	Median	Mean	Median
Provided with schooling	28.93	28	21.96	20	25.68	24
Non provided with schooling	41.30	40	35.50	36	38.00	37
Total	32.60	35	27.24	28	29.92	30

Source: author from SEIS data

Table A3: number of occupied hours of the working children according to sex and per status of schooling

	Male		Female		Total	
	Mean	Median	Mean	Median	Mean	Median
Provided with schooling	40.31	39	40.49	40	40.39	40
Non provided with schooling	48.99	49	52.55	53	51.01	50
Total	42.88	42	45.2	43	44.04	43

Note: occupied hours comprise the domestic and economic child labour.

Source: author from SEIS data

Table A4: Instrumentation of income

Number of observations	27 037		$F_{(28,11)}$	109.78
Log-Likelihood	-35 060,36		Prob > F	0.0000
Cluster group	12		R^2	0,419
			Adjusted R^2	0,419
Lnrevenu	**coef**		**Se**	**t**
NBVOIT	0,152***		0,026	5,795
NBCLIM	0,141**		0,057	2,466
NBREFRIG	0,199***		0,036	5,481
NBGAZ	0,121***		0,033	3,630
ECLAIRAGE	0,129***		0,037	3,517
SOL	0,191***		0,038	5,040
_cons	0,935***		0,072	12,977

Note : Exogenous variables included, Region fixed effects included, to the heteroskedasticity and clustered on the regions

Significance :: *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Source: author from SEIS data

Table A5: Results of the Sargan test

Number of observations	7 151		F(28,7111)	0.35
Log-Likelihood	-3 873,96		Prob > F	0.9994
Cluster group	12		R2	0,001
			Adjusted R2	-0,004

RESIDUS	coef	se	t	p-value
NBVOIT	0,024	0,013	1,800	0,072
NBCLIM	-0,006	0,021	-0,280	0,780
NBREFRIG	0,013	0,015	0,822	0,411
NBGAZ	0,001	0,010	0,074	0,941
ECLAIRAGE	-0,026	0,015	-1,710	0,087
SOL	-0,012	0,014	-0,875	0,382
EDUCCM	0,002	0,003	0,543	0,587
EDUCCM2	0,000	0,000	-0,661	0,509
SALFOR	0,000	0,020	0,004	0,997
INDFOR	-0,026	0,059	-0,432	0,666
INDINFNAGR	-0,001	0,019	-0,076	0,939
INDINFAGR	-0,009	0,020	-0,431	0,667
DEPIINFNAGR	0,003	0,024	0,127	0,899
DEPINFAGR	-0,009	0,053	-0,169	0,866
AGE	0,000	0,003	0,026	0,979
SEXE	0,000	0,013	-0,038	0,970
BIOLOGIQUE	-0,002	0,011	-0,144	0,886
SEXECM	-0,002	0,014	-0,143	0,887
TAILMEN	0,000	0,004	0,057	0,954
FEMOCC	-0,001	0,007	-0,115	0,908
HOMOCC	0,000	0,008	-0,061	0,952
RURAL	0,007	0,013	0,567	0,571
FILLE0	0,000	0,006	-0,031	0,976
FILLE10	0,000	0,008	-0,022	0,982
FILLE15	0,000	0,010	0,001	0,999
GARC0	0,000	0,006	-0,061	0,951
GARC10	0,000	0,008	0,050	0,960
GARC15	0,001	0,010	0,071	0,943
_cons	0,019	0,044	0,426	0,670

Statistics	Degree	P-value
7,151	5	8,15%

Note :Regions fixed effects included. Robust standard errors to heteroskedasticity and clustered on the regions.

Source: author from SEIS data
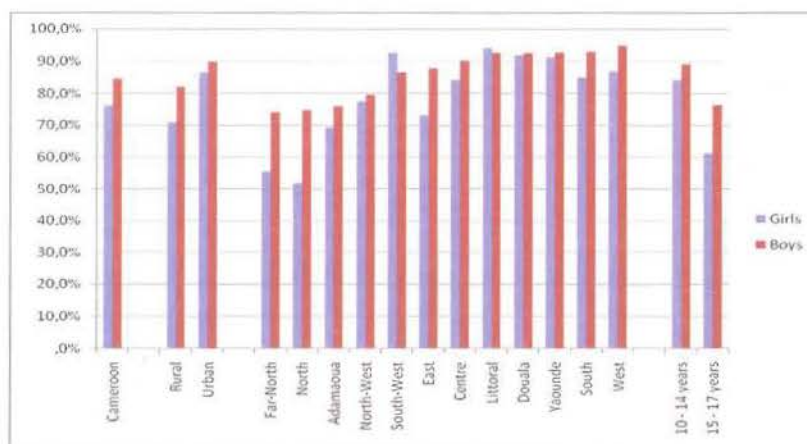
FigureA1: percentage of children in full-time education according to sex by region, residence milieu and age

Source: author from SEIS data

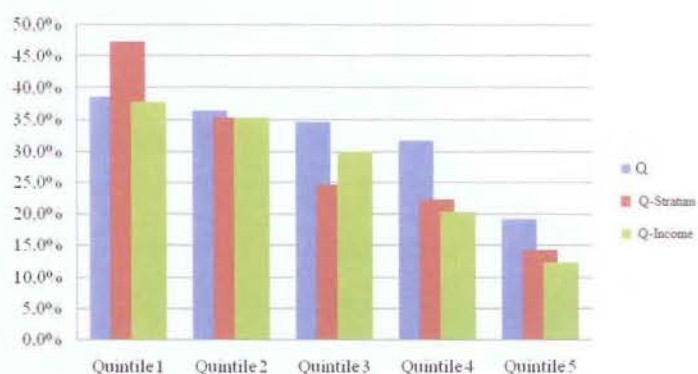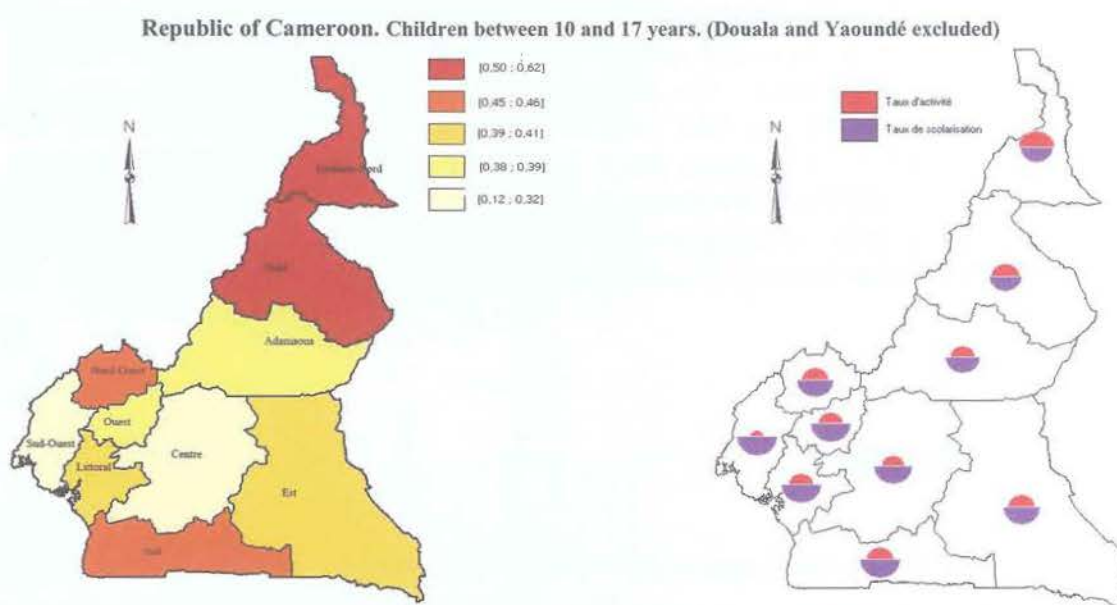Figure A2: proportion of 10-17 years old economically active children per "quintile" of income by household

Source: author from SEIS data

Republic of Cameroon. Children between 10 and 17 years. (Douala and Yaoundé excluded)

Figure A3: Proportion of economically active old by region
Source: author from SEIS data

Figure A4: comparison occupation and schooling rates
Source: author from SEIS data

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Trade Credit and Market Competition:
Some Facts for Firms in the Mexican Economy

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Abstract
Since firms take together their financial decisions and on the real markets decisions. It is necessary an approach that analyzes the interrelation between both kind of decisions. This document explores the effect of competition in the real markets over the firm's decision to grant credit to their customers. The results of this work suggest the existence of a positive effect of the competition over lend decision. Furthermore, with a database rarely used before, this document finds evidence about different behavior, between manufacturing and services firms, in front of competitive pressures.

1. Introduction

In the real world the firms take their financial decisions and their decisions in the markets of products and services together. In other words, usually the firm's decision in the real markets depends on their financing and vice-versa. In this regard, to have a better understanding on the firm's behavior is necessary an approach to analyze the interrelation between both kind of decisions.

In general, the firm's financial decisions are related with the quantity of financing, or with the instrument used in it. These decisions can be approached through different ways. The most common is through the leverage of the firms. Other way is considering the instrument used in their financing. Respect to the latter, the trade credit is, without question, a

common instrument used by all kind of firms (Petersen & Rajan, 1997 and Demirguç-Kunt & Maksimovic, 2001).[1]

Some stylized facts about the firm's use of the trade credit, can show that is a relative important source of financing. This fact is reflected in their financial structure. For example, according to the figures reported by Tirole (2006), in the case of non-financial Japanese firms, between 1970 and 1985, in average the trade credit represented 18.3 percent of their financing sources. A similar case was found for corporations in Finland (17.2 percent), while the firms in the United States reported that the trade credit, in average, reached 8.4 percent of the total of their financing sources.

In the case of Mexican firms, taking the data from the Credit Market Survey from the Mexican Central Bank, in average during the last ten years 54 percent of the surveyed answered that one of the most important sources of financing was the credit from suppliers.[2]

All these facts denote the relative importance of the trade credit. But at the same time arises the question about which factors determine the trade credit granting. In this respect, there are numerous theoretical works on the determinants of trade credit.[3] However, the empirical documents that consider explicitly the competitive environment of suppliers as a determinant of the trade credit are scarce and recent (McMillan & Woodruff, 1999, Fisman & Raturi, 2004, Van Horen, 2005, Fabbri & Klapper, 2008, Hyndman & Serio, 2009).

In this light, the main objective of this document is to explore the effects of competition on the real markets over the financial decisions of the firms. Specifically, I am interested in responding whether competition in the product markets affects the decision of firms to give credit.

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[1] The trade credit can be defined as the possibility of a firm to delay to other firm their pay for the purchase of a merchandise or service, in the case of the demand, or delay the bill for them in the case of supply.
[2] Data from Credit Market Survey are available at the Central Bank's web site (http://www.banxico.org.mx).
[3] Example of it are documents like Nadiri (1969), Mian and Smith (1992), Petersen and Rajan (1997), Ng, Smith and Smith (1999), Hammes (2003), Delannay and Weill (2005), Marotta (2005) and Bastos and Pindado (2007).

The main hypothesis to test is that firms with a "more aggressive" competitive environment will use the trade credit as an instrument of competition in the real markets, because companies which face more competitive actions in the market will use the trade credit as a mean to differentiate themselves from their rivals and try to take a greater share of the market.[4] In this sense, this work only analyzes the supply side.

The estimations in the document try to find evidence about the impact of the variable of the competition in the market. The findings could be interpreted as evidence about the use of the trade credit as a competitive tool into the output markets. Because these variables intend to reflect possible competitive pressures in the output market, which could motivate the supply of credit by the firms.

In this sense, this paper contributes to cover the lack of empirical works by incorporating into the analysis the decisions of firms in both markets - real and finance. Other novelty aspect of this work comes from the use of a relative new database from the World Bank. Additionally, the most important contribution of this paper, in contrast to previous works, is the evidence provided about a different behavior, front to competitive pressures, between manufacturing and services firms. It can help us to improve the analysis of the firm's behavior at the sector level.

It is worthy to mention that, the kind of analysis proposed in this paper will give us a better understanding of the behavior of enterprises in the markets, and with it we could propose better economic policy measures.

The rest of the document contains four more sections. The second section serves to expose the theoretical framework used to explain the link between the grant of trade credit and competition in the real markets; besides this section contains a bibliographic revision of previous empirical papers. The next two sections, third and fourth, describe methodological aspects and the econometric results, while the fifth section corresponds to paper's conclusions.

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[4] In the rest of the paper, I use in a indistinct way "product markets" or "real markets" to refer at the market of merchandises or market of services, or both.

2. Theory and Previous Literature

2.1. Theory

According to Ng, Smith and Smith (1999, p. 1109) trade credit "is created whenever a supplier offers terms that allow the buyer to delay payment". Then, the trade credit can be defined as the possibility of a firm to delay to other firm their pay for the purchase of a merchandise or service, in the case of the demand, or delay the bill for them in the case of supply. In the literature exists different approaches trying to identify the trade credit determinants, considering demand or supply aspects. Some of these approaches include the asymmetric information between firms and financial intermediates, commercial incentives, financial incentives, transaction cost, the possibility of price discrimination and the chance to differentiate their goods.[5]

The approaches which consider asymmetries information between the firms and financial intermediates are based in the frequent interaction between the vendors and their customers. The firms, generally, could have more information about their customers than the financial institutions. For this reason, the asymmetry information problems could be less for the suppliers than financial intermediates. In this sense, the suppliers have more control in front of the customers default possibility, because the supplier has as last resort not deliver the inputs to the customer, thus forcing the buyer's payment.

Considering the asymmetry information problems, also exist approaches which take into account the assets specificity as an advantage for the decision of granting the trade credit (Frank & Maksimovic, 2005). This fact is a result of the firm's better knowledge of the market in respect to financial intermediaries. With such facing the existence in the industry of specific investment requirements, and given the possibility of customer's default, the firms may recover a larger share of the financed resources than the financial intermediates. Then, in front of some possible assets specificities, and also the disadvantages of the financial intermediates, the firms could use more the trade credit as an alternative source of financing.

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[5] Petersen and Rajan (1997) and Ng, Smith and Smith (1999), did a briefly survey about the different approaches that try to explain the trade credit.

Another approach proposes that trade credit is determined for possible scale economies of the supply credit. In this case, the large firms could have a bigger probability to supply credit to small firms, because larger firms may have a greater capacity to analyze the customer positions and this fact give one advantage to supply credit. To this respect, McMillan and Woodruff (1999) mention that the one advantage of bigger firms for supplying credit comes from the fact that these firms take part of a broad network of suppliers which may share information about the customers characteristics.

Some other approaches consider commercial motives as determinants of trade credit, related with the management of the stocks and cash flows. At the end, both approaches pursue a more efficient use of the cash, and in a certain way diminishing the transaction cost. Besides, inside these approaches exist one that proposes that the trade credit is a mean to ensure product quality. In this last case, is assuming there are asymmetry information problems too.

Additionally, institutional differences among countries could influence the demand and supply of trade credit. In this sense, some works have been analyzed the effect of the legal system over the use of trade credit, founding that it has a negative impact in countries with weaker institutions (Demirgüç-Kunt & Maksimovic, 2001 and Beck, Demirgüç-Kunt & Maksimovic, 2008). In other words, the evidence found in these documents suggest that the inefficiencies in court systems have a negative effect over the firm's use of trade credit. Then, in economies with more efficient legal systems, the firms tend to use more trade credit.

In an approach more related with the competition in the output market, trade credit is seen as an instrument that permits the firms to discriminate prices (Schwartz & Whitcomb, 1979 and Brennan, Maksimovic & Zechner, 1988). The intuition behind this proposal is that the granting of trade credit does not discriminate the costumers by theirs risk quality. This is because the trade credit's conditions usually do not vary with the quality of the customers. The credit from suppliers can reduce the low quality buyers' effective price. Then, the firm may get a bigger share of the potential customers, and take more consumer surplus. When

firm consents to delay a payment, indirectly it offers a lower price than the market price for the other customers that otherwise may be out of the market. Thus, firms use the trade credit as a competitive tool, which let them differentiate from their rivals. This fact may help firms to be on the market or even pressure for the competitors' exit.

Another theoretical approach proposes that trade credit can be used as an instrument similar to advertisement expenses (Blazenko & Vandenzande, 2003). Since a bigger firm's credit supply could induce sales. This could be explained because trade credit supply can be seen as a qualification of the merchandise compared to similar goods and services offered into the market. With it, firms change the trade credit into a competitive instrument that lets differentiate their product, or service in respect to their rivals.

However, many authors had pointed out that the trade credit is a very usual financing source by the firms, their explanation for the moment is not clear (Battacharya, 2008).

2.2. Previous Literature

The trade credit determinants have been analyzed from both, demand and supply sides. Petersen and Rajan (1997) did a survey on the determinants of the supply and demand of trade credit, concluding that factors related with the credit's availability, the trade credit's price or about the usual demand of resources, in general, affects the demand of trade credit. And how trade credit's supply determinants are factors related with financing sources, shocks on the firm's earning and incentives to use the trade credit as a mean to price discrimination. However, the survey of Petersen and Rajan (1997) does not include explicitly other motives generated by the market competition, such as incentives to differentiate theirs goods from their rivals.

The previous empirical evidence about the explicit link between the use of trade credit and the competition in the real market, the latter as a proxy of decisions of the firms in the markets, is scarce and recent. Example of it are the works by McMillan and Woodruff (1999), Fisman and Raturi (2004), Van Horen (2005), Fabbri and Klapper (2008) and Hyndman and Serio (2009). Surveys are mainly used in those documents, which contain

data from companies as source of information. In several cases the market competition proxies are based on the answers about the number of competitors faced in the market where the firms interact.

McMillan and Woodruff (1999) took the data of 1995 and 1996 from Vietnamese firms suggesting a negative relationship between the number of competitors in the market and the grant of trade credit. These authors used the number of competitors in the area where the company is located as a proxy of competition in the market.

Fisman and Raturi (2004), using a panel data results of surveys collected from 1992 to 1995 in five different Sub-Saharan countries, proposed that in less competitive environment the probability of taking trade credit diminish.[6] In this case the proxy of market competition was constructed with the answers of the firms with more than one rival in the market. According the authors firms in less competitive environments, like monopoly, grant less credit than the firms in more competitive markets.

Van Horen (2005), analyzing data at firm level into 42 countries in different regions of the world included in a survey made by the World Bank, suggests that the bargaining power have a positive effect over the grant of trade credit, and the market power have a negative influence over the granting decision.[7] This could interpreted as evidence that in less competitive environment –as monopoly- the firms grant less trade credit.

Fabbri and Klapper (2008) consider in their analysis both sides of the relationship between the trade credit and the market competition, supply and demand. The result of these authors proposes that firms with less market power grant more trade credit. These results could be interpreted as evidence that in more competitive markets firms have more possibilities to take trade credit from a supplier.

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[6] The countries were: Ghana, Kenya, Tanzania, Zambia and Zimbabwe.
[7] In the sample considered by Van Horen (2005) does not include Mexico. In the documents reviewed, just Demirguç-Kunt and Maksimovic (2001) and Beck, Demirguç-Kunt and Maksimovic (2008) considers into their estimations data from Mexican firms.

Lastly, Hyndman and Serio (2009) using data from firms in Indonesia between 1998 and 1999 included in a survey, suggest that the relationship between the market competition and the trade credit have an inverted "U" shape, and it has a jump and inflexion on the duopoly. Monopoly firms will supply less credit than the duopoly firms, but as competition increases from duopoly the grant of trade credit tend to diminish.

3. Econometric Methodology, Data and Variables

3.1. Econometric Methodology

Since I am interested in the relationship between the firm's decisions in the real markets - approximated by the competition, and their financial decisions, it is necessary a methodology which let us analyze how the financial decision of the firm is modified due to changes in the market competition faced.

In this sense, a possible methodological alternative are the discrete choice models. Since their motivation is try to capture the behavior of a latent variable, which in this case could be identified as the firm's decision to grant credit to their customers.[8]

If we are interested in find the determinants of a latent variable, y, which can be approximated by a dummy variable, y_i*, equal to 1 if a certain parameter c is reached, and 0 in the other cases. Moreover, assuming that there is a vector, X, of variables that explains y. The lineal specification of this can be denoted by:

$$y_i^* = \beta x_i + u_i \qquad (1)$$

where $y_i = \begin{cases} 1 & \text{if } y_i^* > c \\ 0 & \text{if } y_i^* < c \end{cases}$ and we make the usual assumption $u_i \sim N(0, \sigma^{2})$.

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[8] A latent variable is a variable not observable directly, but their effects can be captured by other variable.

In this way, the realization of the variable that we can observe just going to be if and only if $u_i > -X\beta$ for each one of the observations in the sample. The probability of this is defined by:

$$\text{Prob}(y_i = 1) = \text{Prob}(u_i > -X\beta) \qquad (2)$$

For other part, if we define F(•) as the cumulative density function of the distribution of the residuals u_i, then the equation (2) is:

$$\text{Prob}(y_i = 1) = 1 - F(-X\beta) \qquad (3)$$

Analogous, the probability to observe $y_i = 0$ is defined by:

$$\text{Prob}(y_i = 0) = F(-X\beta) \qquad (4)$$

If u_i is distributed accordingly with a symmetric distribution function F, then:

$$P(y_i = 1) = P(y_i^* > c) = P(\beta x_i + u_i > c) = P(u_i > -\beta x_i) = 1 - F(-\beta x_i) = F(X\beta) \qquad (5)$$

With the random variable u_i distributed independently. The assumption on the functional shape of F(•) is the determinant of the kind of model to use. The two most usual forms are: the cumulative distribution function of a typified normal variable, it has as result the Probit model. And the logistic distribution function, which results in the Logit model.[9]

In both cases, the estimations cannot be interpreted directly, it is necessary to compute the marginal effects. The way how these are computed depends on if we deal with continuous or discrete variables. For the relative advantage on the computation, in this paper I estimated a Logit model.

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[9] Cameron and Trivedi (2006) explain deeply the differences and relative advantages to each model.

With the above mention, the next kind of equation is estimated generically in the paper:

$$P\left(FD_i = 1\right) = \gamma\left(\beta_1 X_i + \beta_2 Z_i + v_i\right) \tag{6}$$

Where, FD_i represents the financial decision by the firm i. It reflects the decision of the firm to grant credit or not, and assuming that γ is a logistic distribution function. X_i represents a vector of variables associated with the competition in the output markets faced by the firm i. And the other variable vector (Z) includes variables related with firm's own characteristics, firm's financial characteristics and firm's perception of the institutional environment.

3.2. Data

To test the hypothesis proposed, as I mentioned before, were used the data from approximately 1,100 firms in Mexico in 2006, included in the World Bank Enterprise Survey (ES). This survey contains quantitative and qualitative information about the firm's financing sources, sales, regulatory barriers, competition, innovation, access to infrastructure services, productivity, business environment in the economy and corruption.

With the firm's answers it is possible to estimate a model of discrete-choice about the firm's decision to grant credit, controlling by the firm's own characteristics, the firm's perception of the institutional environment and, of course, the competition in the real markets faced by the firms.

In the case of the Mexican ES, the full sample includes data for 1,480 firms. Out of those 1,122 are manufacturing divided in seven groups: food processing, garments, textiles, machinery and equipment, chemical, electronics and non-metallic minerals. Others 237 firms are corporations which main activities are the retail sales and information technology services (IT) and, 121 firms more classified under other manufacturing, other services, construction and transport activities.

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By geographic location, the data into ES includes firms in Chihuahua, Coahuila, Estado de Mexico, Jalisco, Mexico City, Nuevo Leon, Puebla and Veracruz. The sample's geographic distribution reflects the main industrial regions of Mexico (World Bank, 2007). According to the size, the sample contains 736 small firms – these have between 5 and 19 workers-, 448 medium firms – between 20 and 99 workers- and 296 big firms -more than 100 workers. The statistics of the variables used are reported in the Appendix of the document (Table 8).

The estimations do not consider 121 firms dedicated to activities of construction, transport, other services and other manufactures. Hence, the sample was reduced to 1,359 firms.

Furthermore, since the survey structure does not let me use the same variable for market competition, I construct two samples, one for each sector activity, manufacturing and services. I estimated for each of the sub-sample. The division in these samples let me control the estimations by the market own characteristics in these two economic sectors.

Additionally, I applied filters in the samples. I do not consider firms which do not answered at the question about the competition in the market. In the case of manufacturing, the final sample includes data from 905 firms and, in the case of service sector the sample considers observations from 189 firms. Then, the final total sample includes data from 1094 firms.

Some characteristics of the enterprises included in both sectors are shown in Table 1. It shows that 53 percent of the observations in the final sample correspond to small firms, 31 percent are data from medium firms and only 16 of the observations are from large enterprises. Despite the lower percentage of large firms considered in the sample, the aggregated value in the Mexican economy for this kind of companies is the largest.[10]

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[10] Sánchez Valadez (2009) shows some figures on this respect.

Table 1: Characteristics of the firms in the sample from ES (2006)

	Firms	Sales average millon of pesos	Purchanses in credit percent of total	Sales in credit percent of total
Manufacturing Firms	905	267.0	44	43
Small	471	3.0	38	40
Medium	287	18.1	50	45
Large	147	1,600.0	50	49
Services Fims	189	20.4	37	28
Small	110	3.6	31	25
Medium	56	20.0	45	28
Large	23	101.0	48	36

Source: Own elaboration with data from World Bank Enterprise Survey.

Finally, it is worthy to mention, that due too to the structure and questions included in the ES, this document only analyzes the supply side of the link between market competition and trade credit.

3.3. Variables

In both cases, manufacturing and services, the estimations used as a dependent variable one dichotomy variable (d_stc). It is equal to one, if the firm answered that the percentage of the total sales paid after the delivery was greater than zero, and is equal to one in other cases. This variable tries to catch the latent variable about the firm's granting credit decision. In the case of manufacturing the dependent variable was equal to one in 71 percent of the 905 observations, and in the case of services, the 53 percent of the firms in this sector observed a value equal to one for the dependent variable.

As I said before, the structure of the survey does not let us use the same proxy for the competition in the output market in both sectors. In the case of manufacturing, the ES let us get some proxies about the level of the competition in the market. Then, as proxy of competition faced by the firms in the market, we use the answers of the firms about the number of competitors faced in their main product market during the last year (comp). In this case, the existence of more rivals in the market reflects a bigger extent of competition.

On the other hand, in the service sector, as proxy of the competition in the real market, taking the answers of the firms about how important is the pressure from domestic and foreign competitors over the introduction of new product lines I construct two dichotomy variables. Since the introduction of a new product may be interpreted as the firm could be facing more competition in the market, and then it wants to search for market instruments trying to differentiate their product from their rivals.[11] As mentioned above, I construct two dummy variables, one trying to capture the pressures from domestic competitors (d_prnpl) and other catching the pressure from foreign rivals (d_prnpi).

According with the hypothesis proposed in this work, I expect a positive effect of the competition in the market over supply-credit decision of the firms. In other words, in front of a more competition in the market, firms could use more the trade credit as a competitive tool trying to differentiate themselves from the rivals and capture a bigger share of the market. Then, I expect that the different competition's coefficients get a positive sign.

The estimations also include control variables about the main determinants of the trade credit proposed in the diverse theoretical approaches. These control variables consider proxies about the firm's own characteristics, the institutional environment, and some financial firm's characteristics. The data contained in the ES let us consider the same set of control variables in both set of estimations, for manufacturing and services firms.

As part of the firm's own characteristic variables, I construct a proxy of its size (l_size). It is the log of the addition of the permanent and temporal workers into the firm during 2006. Taking the proposed by the theoretical approaches mentioned before, I expect the firm size could have a positive effect over the grant credit decision. This is because bigger firms have a better access to financial resources, they can play the role of financial intermediates by those firms which can face financial constrains. Then the supply of trade credit make that the firms will be seen as substitutes of financial intermediates.

Other variable inside the set of firm's own characteristics is its permanency in the market, the firm's age. The proxy for it (l_age) is the log of the age of the firm. Since the older

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[11] A survey about the link between the innovation and the market competition is the paper of Ahn (2002).

firms may have a better market reputation, and then a better access to financing sources. As in the previous variable, these older firms will act as substitutes for financial intermediates and supply credit to their customers. The availability of older firms to supply credit can be bigger than the availability of the younger ones.

However, Fabbri and Klapper (2008) propose that the new firms in the market face a bigger competition trying to stay in the market. Then, the availability of granting credit to their customers could be bigger for these younger firms. With all these, the firm's age effect over the supply credit decision is not determined.

Additionally, the estimations were controlled through a dummy variable for possible effects of the exports. Since the firm deals with domestic or foreign customers may be different, the dummy was equal to one if the firm did direct exports and zero in other case.

On the other hand, in economies with a weaker legal system, where the differences between firms are not solved in an efficient way, the firms may have few incentives to grant credit to their customers. In this regard, Demirguç-Kunt and Maksimovic (2001) found empiric evidence from different countries on the effect of the legal system over the use of the trade credit. Then, I expect that the proxy of the legal system inefficiency (d_leg) has a negative effect on the decision of granting credit. To approximate the legal system inefficiency I construct a dummy variable, equal to one if the firm did not agree with the affirmation that the courts system is fair, impartial and uncorrupted, and zero in the other cases.

Additionally in inefficient legal system variable, I include in the estimations one dummy variable trying to catch the effects caused by possible financial constrains (access). Since in economies where firms face some restrictions to access to the formal financial system, the trade credit can serve as a substitute or complement of the financing formal sources. The dummy variable used was equal to one if the firm answered that it had a checking or savings account, and zero in other cases. I wish remark, that the empirical evidence with respect to the role of the trade credit as substitute or complement is ambiguous. Demirguç-

Kunt and Maksimovic (2001) suggest a complementary relationship, while Van Horen (2005) found a substitute relationship.

In the real world, firms have different financing sources. To approximate these, in the paper were constructed three different dummy variables, each one depending if the firm used or not any source to finance working capital or investment in fixed assets. The three different variables were d_banc in the case of use banking financing, d_ear for internal resources and d_inf for informal resources – friends and family resources.

Lastly, I considered in the estimations a variable which try to reflect the incentive for matching the payable accounts and receivable accounts (d_dtc). This variable was a dummy variable, equal to one if the firm did purchases where payment was made after delivery. According to previous evidence, and the own practice into the economic activity, I expect that this variable have a positive effect over the supply of trade credit. In Table 2 are summarized the expected effects of the different variables considered in the estimations.

Additionally to the above mentioned variables, in the diverse estimations were included a set of dummy variables trying to control possible industry and location effects.

Table 2: Expected effects from the variables

Variables	Expected Effect
Competition variables	
comp	Positive
d_prnpl	Positive
d_prnpi	Positive
Other independent variables	
l_age	Ambiguous
l_size	Positive
exp	Positive
d_leg	Negative
acces	Ambiguous
d_dtc	Positive
per_dtc	Positive

4. Results

I estimated different econometric specifications for manufacturing and service sectors, and were computed too the marginal effect to easily explain. The marginal effects correspond to a discrete change of the independent variables.[12] The results, in general, suggest that the competition in the output markets has a positive effect over the firm's decision to supply credit. This means the greater the competition is, greater the probability of the firms to grant credit.

In the case of manufacturing, in the three different specifications estimated, the variable about competition in the real market has the expected sign and has statistical significance too (Table 3). In this sense, I can expect that the probability to grant credit increases in front of an increase in the market competition.

Estimating the marginal effects of a discrete increase over the mean of the competition variable, I found that it raised marginally the probability to grant credit in 1.5 percentage points, which is a relatively small impact. Then, if we interpret the marginal change as the entrance of a new competitor into the market, this may increase the grant of credit probability in almost two percentage points, suggesting a positive relationship between competition in the output market and the firm's supply credit availability.

On the other hand, regarding the others firm's characteristics included in the estimations, neither the firm's age nor the firm's size were statistically significant. A similar fact happened with the proxies about financing sources. However, the findings suggest a different way to deal with foreign and domestic customers.

Additionally, the two institutional factors considered as credit supply determinants have the expected signs, in both cases, have a high statistical significance. The marginal effects of these variables are relatively higher. In the case of the variable about the inefficiency of

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[12] For those variables which are not dummies, the discrete change is over the average of those variables.

the legal system, the discrete change of this variable results in a diminishing of the granting credit probability close to 14 percentage points, in average. And in the case of the variable used to capture the effects of financial constrains, the marginal effects estimated reveals an increase of the supply credit probability in just over 11 percentage points. This last result can be interpreted to some extent of complementary between the trade credit and the credit granted by the financial intermediates.

Lastly, the proxy about matching incentives obtained a highly statistical significance and the sign expected. This result brings evidence about the importance of this incentive to determine the firm's decision to grant credit and corroborates, at least partially, the results of Fabbri and Kappler (2008) with respect to the trade credit's matching motive.

Table 3: Logit model for manufacturing

	(1)		(2)		(3)	
	Marginal effect	Std error	Marginal effect	Std error	Marginal effect	Std error
comp	0.0155	0.009 *	0.0154	0.009 *	0.0155	0.009 *
l_age	-0.0139	0.023	-0.0136	0.023	-0.0142	0.023
l_size	0.0071	0.016	0.0073	0.016	0.0070	0.016
exp	0.1340	0.042 ***	0.1344	0.043 ***	0.1333	0.042 ***
d_banc	0.0082	0.044				
d_inf			0.0716	0.801		
d_ear					0.0123	0.124
d_leg	-0.1434	0.035 ***	-0.1436	0.035 ***	-0.1435	0.036 ***
acces	0.1110	0.034 ***	0.1113	0.034 ***	0.1103	0.034 ***
d_dtc	0.5717	0.037 ***	0.5721	0.037 ***	0.5718	0.037 ***
Ind dummy	Yes		Yes		Yes	
City dummy	Yes		Yes		Yes	
Observations	905		905		905	
Pseudo-R^2	0.3519		0.3519		0.3518	

Statistically significant at 1% ***, 5%** y 10%*. Robust standard errors reported correspond at the computation of the marginal effects.

The Logit model results for the services firms are summarized in Table 4. It shows that in the six specifications proposed the proxy about market competition got the expected sign, and for both kinds of pressures –domestic and foreign competitors-, it has statistic significance.

In the case of domestic competitors, the marginal effect of a discrete change into the market competition proxy result in an increase of the supply credit probability close to 20 percentage points in average. And in the case of a discrete change in the pressures from

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foreign rivals, the average marginal effect is near to 34 percentage points. Under both kinds of pressures the increase in market competition results in a relative high augment in the firm's availability to supply credit.

None of the variables considered to control the possible effects generated by the firm's own characteristics were statistically significant, even in the case of the firm's size the sign was not the expected.

However, as in the case of manufacturing, the variable that captures the legal system inefficiency was highly significant to determine the grant credit probability. This fact does not matter to the kind of competition pressures considered in the estimations –domestic or foreign. For the service firms, the estimated marginal effects resulted in a diminishing of more than 30 percentage points in the grant credit probability.

The results showed for each one of the two sectors -manufacturing and services-, an increase in the output market competition results in an increase in the probability to grant trade credit. Nevertheless, the evidence found suggests the existence of different reactions by the firms in front of a more market competition according to the sector. On the other hand, for both sectors the perception of the legal system inefficiency and the incentives to demand trade credit are key variables in the decision to supply credit.

Table 4: Logit model for services firms

	(1) Marginal effect	(1) Std error	(2) Marginal effect	(2) Std error	(3) Marginal effect	(3) Std error
d_prnpl	0.1998	0.111 *	0.1998	0.112 *	0.1933	0.113 *
l_age	-0.0089	0.090	-0.0328	0.087	-0.0172	0.086
l_size	-0.0018	0.052	-0.0009	0.052	-0.0017	0.052
exp	-0.1382	0.166	-0.1442	0.170	-0.1393	0.168
d_banc	-0.0501	0.123				
d_inf			0.0894	0.116		
d_ear					-0.1811	0.195
d_leg	-0.3172	0.110 ***	-0.3273	0.107 ***	-0.3245	0.105 ***
acess	0.0360	0.121	0.0612	0.121	0.0543	0.118
d_dtc	0.6715	0.070 ***	0.6739	0.070 ***	0.6697	0.070 ***
Ind dummy	Yes		Yes		Yes	
City dummy	Yes		Yes		Yes	
Observations	189		189		189	
Pseudo-R^2	0.3716		0.3733		0.3721	

	(4) Marginal effect	(4) Std error	(5) Marginal effect	(5) Std error	(6) Marginal effect	(6) Std error
d_prnpi	0.3438	0.104 ***	0.3494	0.105 ***	0.3419	0.104 ***
l_age	-0.0021	0.087	-0.0265	0.086	-0.0089	0.085
l_size	-0.0366	0.053	-0.0354	0.054	-0.0356	0.053
exp	-0.1036	0.170	-0.1109	0.174	-0.1067	0.171
d_banc	-0.0466	0.125				
d_inf			0.1038	0.115		
d_ear					-0.2053	0.207
d_leg	-0.3542	0.099 ***	-0.3611	0.098 ***	-0.3599	0.097 ***
acess	0.0076	0.124	0.0343	0.121	0.0271	0.119
d_dtc	0.7054	0.070 ***	0.7063	0.067 ***	0.7028	0.069 ***
Ind dummy	Yes		Yes		Yes	
City dummy	Yes		Yes		Yes	
Observations	189		189		189	
Pseudo-R^2	0.3936		0.3962		0.3947	

Statistically significant at 1% ***, 5%** y 10%*. Robust standard errors reported correspond at the computation of the marginal effects.

To check the robustness of the results I assume a different functional form and, giving the availability of information, I estimated a Tobit model for each sector. The Tobit model is used when censored data exists, like in this case for the dependent variable where the data is bounded between 0 and 100.[13]

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[13] The dependent variable used considers the firm's answers about the percentage or total sales paid after the delivery of the merchandise or service. And respect to Tobit's formalization, taking again the possible existence of a latent variable, their formalization can be defined by:

$$y_i = \begin{cases} y_i^* = \beta x_i + u_i & \text{if } y_i^* > 0 \\ 0 & \text{if } y_i^* \leq 0 \end{cases} \text{ and } u_i \sim N(0, \sigma^{2)}.$$

The equations estimated consider a similar set of independent variables, except the proxy about the matching incentives was changed to include instead the dummy variable the percentage of purchases in which payment was made after the delivery of the merchandises or services.

The Tobit model's results for manufacturing are summarized in Table 5. These show that the proxy about the market competition had the expected sign and is statistically significant. Thus, an increase in the output market competition results in an increase close to two percentage points on the average percentage of trade credit granting.

Nevertheless I corroborated the results obtained with the Logit model with respect to the effect of the market competition over the grant credit's decision; the variable about the legal system inefficiency was not statistically significant. But the access to formal financial instruments proxy, again, has the expected sign and was statistically significant. This fact may be interpreted as a possible complementary role of the trade credit with respect to the credit from financial intermediates. Regarding the matching incentives' proxy, again too, was statistically significant and has the expected sign.

Table 5: Tobit model for manufacturing

	(1)		(2)		(3)	
	Coef	Std error	Coef	Error std.	Coef	Error std.
comp	2.101	1.140 *	2.107	1.140 *	2.116	1.140 *
l_age	-1.117	2.765	-1.129	2.766	-0.987	2.761
l_size	-0.977	1.669	-1.046	1.675	-0.989	1.670
exp	9.045	7.422	9.057	7.430	10.013	7.376
d_banc	-3.531	4.720				
d_inf			-3.207	4.715		
d_ear					-7.795	12.273
d_leg	-7.343	10.022	-7.076	10.019	-6.843	10.033
acces	11.345	3.987 ***	11.377	3.985 ***	11.702	3.978 ***
per_dtc	0.918	0.053 ***	0.915	0.053 ***	0.916	0.053 ***
Ind dummy	Yes		Yes		Yes	
City dummy	Yes		Yes		Yes	
Observations	905		905		905	
Pseudo-R^2	0.0655		0.0654		0.0654	

Statistically significant at 1% ***, 5%** y 10%*. Robust standard errors are reported.

The Tobit model's results for the service firms, as in the case of manufacturing, corroborated the findings of the Logit model estimations (Table 6). Thus, under pressures from domestic competitors, the average impact of a discrete change of the competition in

the market is an increase close to 29 percentage points over the average percentage of granting credit. And in the case of pressures from foreign rivals the effect of a change in the market competition reaches 31 percentage points in the average percentage of granting credit.

On the other hand, the variables of the legal system inefficiency and the matching motives remain important determinants to supply credit. I want to highlight the level of the inefficiency by the legal system effect. This fact may reflect some weakness in the warranties for granting credit.

Table 6: Tobit model for services firms

	(1)		(2)		(3)	
	Coef	Std error	Coef	Std error	Coef	Std error
d_prnpl	27.179	11.522 **	26.902	11.553 **	25.423	11.496 **
l_age	-6.773	8.138	-8.454	8.014	-8.099	7.818
l_size	-0.569	4.985	-0.754	5.012	-0.232	4.982
exp	-31.582	29.287	-31.747	29.375	-30.854	29.058
d_banc	-9.532	11.218				
d_inf			-1.321	11.314		
d_ear					-38.900	33.481
d_leg	-43.431	24.084 *	-45.189	24.168 *	-46.118	23.839 *
acess	17.439	11.303	19.488	11.150	20.028	10.984
per_dtc	0.880	0.153 ***	0.878	0.155 ***	0.864	0.153 ***
Ind dummy	Yes		Yes		Yes	
City dummy	Yes		Yes		Yes	
Observations	189		189		189	
Pseudo-R^2	0.0761		0.0755		0.0767	

	(4)		(5)		(6)	
	Coef	Std error	Coef	Std error	Coef	Std error
d_prnpi	30.460	11.797 **	31.137	11.849 ***	30.271	11.689 ***
l_age	-6.895	8.105	-8.390	7.980	-7.661	7.746
l_size	-2.560	5.091	-2.693	5.107	-2.159	5.067
exp	-27.348	29.457	-27.212	29.566	-26.876	29.166
d_banc	-6.340	11.202				
d_inf			1.724	11.326		
d_ear					-43.131	33.218
d_leg	-40.171	24.102 *	-41.950	24.171 *	-42.639	23.771 *
acess	15.425	11.365	16.951	11.223	17.178	11.050
per_dtc	0.924	0.155 ***	0.928	0.157 ***	0.905	0.154 ***
Ind dummy	Yes		Yes		Yes	
City dummy	Yes		Yes		Yes	
Observations	189		189		189	
Pseudo-R^2	0.0772		0.0770		0.0785	

Statistically significant at 1% ***, 5%** y 10%*. Robust standard errors are reported.

As I mentioned above, the results found regarding the service firms suggest a different firm's behavior, depending on the kind of competitive pressures faced. Then, the evidence

can be interpreted as the services firms are more likely to use the trade credit as a competitive tool than the manufacturing ones.

To test this last point, and check the estimations robustness too, for the sample of manufacturing was constructed a new proxy about the market competition. This new variable is closer to the proxy used in the case of services firms. The new proxy (npr) is a dummy variable equal to one if the firm introduced a new product or improve it in the three last years, and zero in others cases. The results of a Logit model considering the new market competition proxy are summarized in Table 7.

The evidence suggests again a positive effect of the market competition over the firm's granting credit probability. In this case, the average marginal effect of a discrete change in the market competition proxy results in an increase of the granting probability close to 7 percentage points. Then, and even when this marginal effect is bigger than the effect found with the previous competition proxy (comp), is even lower almost three times than the effect estimated for the services firms.

With all these facts, is possible to observe that in front of increases in the market competition the services firms tend to look for new instruments trying to differentiate from their rivals. In this sense, the trade credit will be seen as such instrument, used more by the services firms than manufacturing ones.

On the other hand, the results found for the other control variables included, specifically the proxies related with firm's perception of the institutional environment, were statistically significant, and with the expected signs. Thus, these latter estimations for the manufacturing sample corroborate the robustness of the results previously found.

Table 7: Logit model for manufacturing. New competition proxy

	(1)		(2)		(3)	
	Marginal effect	Std error	Marginal effect	Std error	Marginal effect	Std error
npr	0.0682	0.033 **	0.0702	0.033 **	0.0678	0.033 **
l_age	-0.0100	0.023	-0.0094	0.023	-0.0108	0.023
l_size	-0.0021	0.015	-0.0017	0.015	-0.0021	0.015
exp	0.1279	0.044 ***	0.1288	0.044 ***	0.1265	0.045 ***
d_banc	0.0172	0.044				
d_inf			0.0273	0.049		
d_ear					0.0341	0.136
d_leg	-0.1403	0.036 ***	-0.1406	0.036 ***	-0.1408	0.036 ***
acces	0.1108	0.033 ***	0.1116	0.033 ***	0.1093	0.033 ***
d_dtc	0.5688	0.036 ***	0.5696	0.037 ***	0.5692	0.036 ***
Ind dummy	Yes		Yes		Yes	
City dummy	Yes		Yes		Yes	
Observations	905		905		905	
Pseudo-R^2	0.3527		0.3529		0.3526	

Statistically significant at 1% ***, 5%** y 10%*. Robust standard errors reported correspond at the computation of the marginal effects.

Comparing the results for the manufacturing and services firms, in both cases, increases in the market competition generates increments in the granting credit probability. However, it seems to be features in the sectors that generate bigger competition effects over credit granting decision for the services firms.

Almost partially, the differences between sectors, in front of increases in the competition in the output markets, could be explained by the positive relationship between innovation and competition proposed in previous works about this topic,[14] and how Gellatly and Peters (1999) pointed out, in front the existence of a bigger potential of innovation in the services sector, the competition could be more aggressive. This situation can force to the services firms to look for instruments which let them differentiate their products from their market competitors. Hence, the trade credit will be seen as a competitive tool.

On the other hand, the findings for the services sector show differences in the changes of the grant credit probability, because the services firms' reaction is not the same under pressures from domestic or foreigner competitors. It could result of the own characteristics of the activities considered into the sample.

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[14] Ahn (2002) mentions different empirical works which contain evidence about the positive interrelationship between competition and innovation.

This fact could be explained because more than half of the observations included into the services sector's sample correspond to firms dedicated to information technology services, which could be more sensible to international product innovations as a result of their intent to introduce the innovations in the market before their domestic rivals. As result, the pressures to introduce a new product line may be generate a more aggressive and competitive environment.

This last coincide with the argument suggested by Ahn (2002) and Evans and Schmalensse (2001), who mention that according to the innovation possibilities in this kind of industries, the competition tends to be more aggressive. Then, it is necessary the use of competitive tools which let them differentiate from their market rivals. Therefore, the use of trade credit emerges as a feasible option to differentiate them from their competitors.

5. Conclusion

Giving the relevance to understand better the firm's simultaneous behavior in financial and real markets, it is important to have empirical works analyzing the interrelationship between the firm's financial decisions and their decisions into the output markets. This document proposes the exploration for Mexican firms of the effects of the competition in the market over their financial decisions.

Specifically, the purpose is to answer whether the output market competition affects the firm's decision of supplying credit to their customers. To explore it, I used data of almost 1,100 Mexican manufacturing and services firms in 2006. The primary source of information was the World Bank Enterprise Survey, which in spite of the richness of their information it has been few used before.

The evidence given in this work, suggests the existence of a positive relationship between the competition in the market faced by the suppliers and their decision to offer credit to their customers. Then, those firms which interact in less competitive markets, such a

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monopoly, could be less likely to finance their customers than those firms facing more competition in the output markets.

Besides, the results suggest differences in the firm's credit granting decision in front of increases in the market competition. In other words, in the results is possible to see a bigger sensibility of the services firms than manufacturing. A possible reason for this fact is the nature of the market competition where they interact.

Additionally, the evidence found show differences in the firm's behavior inside the service sector sample. Since, facing pressures from foreign competitors increases the probability of the services firms of granting credit more than under pressures from domestic rivals. This difference, according the source of competitive pressure, could be partially explained by the bigger sensibility of the firms dedicated to information technology services due to innovations in the market. This fact could be as a result of a more aggressive competitive behavior of these firms.

Consequently, this document gives new evidence concerning the effects of the market competition over the firm's grant credit decision. In this sense, this work is part of the, relatively, recent and scarce empiric literature which links the corporate finances literature with the industrial organization literature, and aims to help to cover the lack of empirical works.

Finally, it is worthy to mention, that the evidence found in this document improve the knowledge of the firm's behavior in both financial and output market, which could be useful into the analysis of the effects of the instrumentation of different economic policy actions.

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Appendix

Table 8: Statistics from variables used

Manufacturing

	Average	Percentile 50	Standard deviation	Variation coefficient	Observations
Dependent variable					
(Logit) d_stc	0.714	1.000	0.452	0.634	905
(Tobit) per_stc	43.062	40.000	37.723	0.876	905
Competition variables					
comp	3.525	3.000	1.653	0.469	905
npr	0.345	0.000	0.476	1.379	905
Firm characteristics					
l_age	2.768	2.833	0.717	0.259	905
l_size	3.196	2.890	1.267	0.396	905
exp	0.077	0.000	0.267	3.456	905
Institutional environment					
d_leg	0.966	1.000	0.182	0.188	905
acces	0.578	1.000	0.494	0.855	905
Financial characteristics					
d_dtc	0.685	1.000	0.465	0.678	905
per_dtc	43.643	40.000	38.726	0.887	905

Services

	Average	Percentile 50	Standard deviation	Variation coefficient	Observations
Dependent variable					
(Logit) d_stc	0.529	1.000	0.500	0.946	189
(Tobit) per_stc	27.624	10.000	35.271	1.277	189
Competition variables					
d_prnpl	0.646	1.000	0.480	0.743	189
d_prnpi	0.556	1.000	0.498	0.897	189
Firm characteristics					
l_age	2.479	2.398	0.680	0.274	189
l_size	2.963	2.773	1.133	0.383	189
exp	0.037	0.000	0.189	5.113	189
Institutional environment					
d_leg	0.958	1.000	0.202	0.211	189
acces	0.519	1.000	0.501	0.966	189
Financial characteristics					
d_dtc	0.624	1.000	0.486	0.778	189
per_dtc	37.116	30.000	38.121	1.027	189

Table 9: Correlation coefficients

Manufacturing

	d_stc	comp	npr	l_age	l_size	exp	d_leg	acces
comp	0.0843							
npr	0.2021	0.0074						
l_age	0.0130	0.0362	0.1108					
l_size	0.1712	-0.0772	0.3094	0.3064				
exp	0.1467	-0.0169	0.3034	0.1817	0.3395			
d_leg	-0.0117	-0.0247	-0.0040	0.0612	0.0352	-0.0137		
acces	0.2112	-0.0088	0.1633	0.0866	0.2880	0.1637	0.0482	
d_dtc	0.5971	0.0656	0.2215	0.0423	0.2175	0.1518	0.1077	0.1720

Services

	d_stc	d_prnpl	d_prnpi	l_age	l_size	exp	d_leg	acces
d_prnpl	0.1872							
d_prnpi	0.2441	0.5169						
l_age	-0.0334	0.0301	0.0007					
l_size	0.0956	0.1486	0.2683	0.1116				
exp	-0.0395	0.0868	0.0626	-0.1376	0.2718			
d_leg	-0.0404	0.1189	0.0764	-0.0157	0.0355	0.0412		
acces	0.1729	0.2156	0.2889	0.0489	0.3707	0.1329	0.1130	
d_dtc	0.5815	0.1103	0.0537	0.0405	0.1853	-0.0793	0.0540	0.2146

Financial Stability and Financial Crisis: Different Factors and Views Affecting Financial Stability

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Abstract

My paper will cover the following issues: Firstly, I present some primary definitions of financial stability. In this section I have provided examples from different authors and papers and believe that this is a best way to show the diverse views about the definition of this concept. Moreover, it is important to have a precise understanding of what financial stability is in order to apply relevant policies to maintain or achieve it. Secondly, I have also mentioned the role of central banks and authorities' role in accomplishing or maintaining financial stability. I have introduced some examples from the historical financial instabilities and crises as well. I am going to note briefly the negative impacts of financial and banking crisis on the developed and emerging countries economies. As far as I am concerned, this is the best way to show how important financial stability is for the global economy. Moreover, I will show the diverse action in order to get stable stability in financial; sector.

Despite there are a plenty of theoretical researches relating to global financial crises and banking crisis this area received great attention, financial stability as a concept and its practical implications has not been investigated completely and broadly so far. The fact that many central banks began to publish financial stability reports since 2003 proves the notion that this topic attracts many researchers and gains popularity increasingly. I benefited from these materials and used in my paper recent papers and reports of global financial institutions and central banks of different countries.

1. Introduction

First of all, I would like to accentuate the brief characteristics of the financial crisis statements are currently showing up on the headlines of the world news about the crisis coming to an end all over the world. Any tiny growth glimmer in the global economy is

construed as being a sign of hope for the end of the crisis. However, given the currently observed downward economic patterns, it is too early to speak about the ending of the crisis. Quite conversely, economists are warning about the potential second wave of the crisis in the United States that later spilt over the whole global economy, to diverse extents in different countries. Countries have responded to the unfavorable consequences of the crisis in different ways, with various bailout arrangements. The degree of susceptibility of individual countries to the crisis is linked with their degree of exposure to the global economy, with more integrated economies suffering more from the crisis in negative terms. The crisis erupted at the core of the world economy, i.e. in the US-based transnational financial institutions (in the summer of 2007) and spread quickly beyond the US, first to other developed economies (in the first half of 2008),EU countries and as well as Turkey, and then to emerging markets (in the second half of 2008 and early 2009). This makes its dynamics and the direction of spillover similar to the Great Depression of 1929-1933 and the 1972 US dollar crisis (which moved from the center to periphery). During and afterwards financial crisis financial instability started to show itself from negative point of view. Therefore, it became first most and first significant issue all the countries economy. According to the whole and the size of economy diverse countries utilize different financial models and preventative actions in response to this crisis and all in all in order to make the financial system much more stable. While banks are free to build their own models to assign their strategy, however, most of the countries' experience illustrates that government regulations and implementation of anti crisis measures and stability programmes are useful. Certainly, governments should minimize intervention of the economy. Does not depend on in which situation and development levels countries are, the one the main target of countries is financial stability.

2. Definition of Financial Stability; Different Approaches

Firstly, I would like to mention that there is not a widely accepted definition of financial stability. Some authors suggest that the main reason for this uncertainty is that the analysis of the concept in its initial stage of development. I prefer the definition proposed by Garry

J. Schinasi.[1] According to him, *a financial system is in a range of stability whenever it is capable of facilitating (rather than impeding) the performance of an economy, and of dissipating financial imbalances that arise endogenously or as a result of significant adverse and unanticipated events.* The author identifies some key principles relating to financial stability and I would like to mention them below:

- Financial stability is a broad term which encompasses the various aspects of financial system – institutions, markets and infrastructure. Both private and public sector participate in markets and in vital components of financial infrastructure. Disturbances or expectations of disturbances in any of the individual component of financial system can harm the overall stability because of close links among all of the components of system.

- Secondly, financial stability not only means that finance is playing its role by allocating resources and risks, facilitating and helping wealth accumulation, development and growth; but also this concept or condition imply that the systems of payment throughout the economy function perfectly; in other words, this concept includes the concept of monetary stability.

- In addition to the idea that financial stability means the absence of actual financial crisis, it also relates to the ability of the system to deal with, hinder, limit and manage the emergence of imbalances before they constitute a threat to the economy and financial system. In a stable financial system, the processes of hindering, limiting and dealing with occurs through market disciplining mechanisms or government intervening (e.g. liquidity injections etc.) that create resilience and prevent those threats from growing into system-wide risks.

- Financial stability is not undermined when the disturbances in the financial markets or at the individual institutions are not expected to harm the economic activity. For instance, the reasons of the accidental collapse of a financial institution, a sudden and sharp rise in asset-price volatility, frequent big price changes may be the result of the efficient incorporation of new information. However, it is worthwhile to mention that, volatile and unpredictable changes in prices can be symptoms of financial instability.

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[1] Schinasi, Garry J., 2004, "Defining Financial Stability" IMF Working Paper 04/187

- Financial stability should be accepted as a dynamic process rather than a static process. It is similar to the health of human organism. Pursuant to IMF Working Paper 04/187, "…a healthy organism can usually reach for a greater level of health and well being, and the range of what is normal is broad and multi-dimensional. In addition, not all states of unhealthy (or illness) are significant, systemic, or life threatening. And some illnesses, even temporarily serious ones, allow the organism to continue to function productively and can have a cleansing effect, leading to greater health." In other words, financial stability does not require that all parts of financial system have to operate at their perfect performance; actually, financial stability allows financial system to operate on a "spare tire" from time to time.
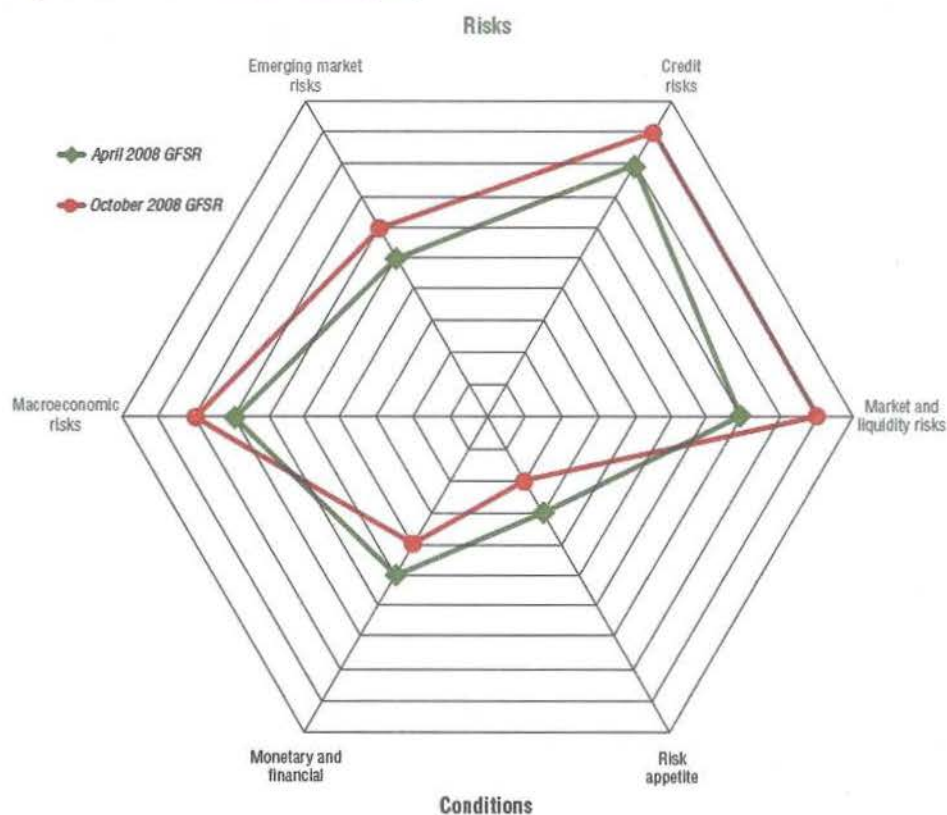
2.1. Financial Stability and Its Measurement

The term financial stability has gained prominence in international policy discussions and has become an actively discussed academic topic since the mid-1990s. However, a precise definition still eludes the work done so far. As Issuing (2003) and Padoa-Schioppa (2003) note, a number of authors find it easier to define financial *in*stability, instead of its positive counterpart. Following Issing, two types of positive definitions are emerging from the literature. Some sources take a systemic view and emphasize the resilience of the financial system as a key component of stability. In this view, an individual bank failure is not necessarily proof of financial instability. Suchan event can even contribute to more efficient financial intermediation, and thus help maintain or enhance stability. Following Mish kin (1991, 1997), one can say that financial stability stems from the prevalence of a financial system that is able to provide, on a durable basis and without major disruptions, an efficient allocation of savings to investment opportunities (see Padoa-Schioppa (2003) and Haldane, Hogg art, and Saporta (2001) for similar approaches).

The second approach to defining financial stability is to liken it to situations *without* banking crises and *with* asset-price stability. The advantage of this approach is that more directly observable variables can be used (for instance, interest rate smoothness), but on the whole, it is conceptually less appealing, because the absence of banking crises still offers no insights in the relative strength of the financial system.

Figure 1.1. Global Financial Stability Map

Risks

Emerging market risks

Credit risks

← April 2008 GFSR

← October 2008 GFSR

Macroeconomic risks

Market and liquidity risks

Monetary and financial

Risk appetite

Conditions

Source: IMF staff estimates.
Note: Closer to center signifies less risk, tighter monetary and financial conditions, or reduced risk appetite.

The definition offered by Crockett (1997) in many ways bridges the two strands. As Crockett states (1997, 9): "stability requires (1) that the key *institutions* in the financial system are stable, in that there is a high degree of confidence that they can continue to meet their contractual obligations without interruption or outside assistance; and (2) that the key *markets* are stable, in that participants can confidently transact in them at prices that reflect fundamental forces and that do not vary substantially over short periods when there have been no changes in fundamentals." However, he acknowledges the operational limitations of such a broad definition: one needs to decide which are the "key institutions" whose stability is important, and what degree of price stability in financial markets is required.

It is needless to say that finance involves uncertainty, contains a number of tightly linked and correlated elements and is very dynamic. Therefore, I prefer to describe the term of

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"financial stability" as a process in a continuum rather than as a static process. I take side with authors who believe that financial stability is broader than the ability to return to a single and sustainable position after a shock as some static models suggest. Financial stability is a situation which financial system is in the perpetual *state of transformation* while its ability to perform its key functions – allocation of economic resources, managing, pricing and allocating financial risks etc. – remain unchanged. In other words, financial system can perform its functions even when affected by external shocks when the financial system is stable. Finally, I would like to provide some definition and descriptions of financial stability by a number of officials, central banks and experts[2]. I strongly believe that it is logical and useful to list diverse approaches (e.g. some authors or officials define this concept in terms of what it is not, that is, defining financial instability etc.) to financial stability concept due to the differences in approaches.

William Duisenberg (European Central Bank): "...monetary stability is defined as stability in the general level of prices, or as an absence of inflation or deflation. Financial stability does not have as easy or universally accepted a definition. Nevertheless, there seems to be a broad consensus that financial stability refers to the smooth functioning of the key elements that make up the financial system."

John Chant and others (Bank of Canada)[3]: "Financial instability refers to conditions in financial markets that harm, or threaten to harm, an economy's performance through their impact on the working of the financial system.... Such instability harms the working of the economy in various ways. It can impair the financial condition of non-financial units such as households, enterprises, and governments to the degree that the flow of finance to them becomes restricted. It can also disrupt the operations of particular financial institutions and markets so that they are less able to continue financing the rest of the economy.... It differs from time to time and from place to place according to its initiating impulse, the parts of the financial system affected, and its consequences. Threats to financial stability have come from such diverse sources as the default on the bonds of a distant government; the

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[2] This idea was taken from the IMF working paper 04/187
[3] Chant, John, 2003, "Financial Stability As a Policy Goal," in *Essays on Financial Stability*, by John Chant, Alexandra Lai, Mark Illing, and Fred Daniel, Bank of Canada

insolvency of a small, specialized, foreign exchange bank; computer breakdown at a major bank; and the lending activities of a little known bank in the U.S. Midwest."

Andrew Crockett (Bank for International Settlements and Financial Stability Forum)[4]: "...define financial stability as an absence of instability...a situation in which economic performance is potentially impaired by fluctuations in the price of financial assets or by an inability of financial institutions to meet their contractual obligations. I would like to focus on four aspects of this definition. Firstly, there should be real economic costs.... Secondly, it is the potential for damage rather than actual damage which matters.... Thirdly, my definition refers...not just to banks but to nonbanks, and to markets as well as to institutions.... Fourth, my definition allows me to address the question of whether banks are special...all institutions that have large exposures—all institutions that are largely interconnected whether or not they are themselves directly involved in the payments system—have the capacity, if they fail, to cause much widespread damage in the system."

Roger Ferguson (Board of Governors of the U.S. Federal Reserve System)[5]: "It seems useful...to define financial stability...by defining its opposite: financial instability. In my view, the most useful concept of financial instability for central banks and other authorities involves some notion of market failure or externalities that can potentially impinge on real economic activity. "Thus, for the purposes of this paper, I'll define financial instability as a situation characterized by these three basic criteria: (i) some important set of financial asset prices seem to have diverged sharply from fundamentals; and/or (ii) market functioning and credit availability, domestically and perhaps internationally, have been significantly distorted; with the result that (iii) aggregate spending deviates (or is likely to deviate) significantly, either above or below, from the economy's ability to produce. "

Michael Foot (U.K. Financial Services Authority)[6]: "...we have financial stability where there is: (a) monetary stability; (b) employment levels close to the economy's natural rate; (c) confidence in the operation of the generality of key financial institutions and markets in

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[4] Crockett, Andrew, 1997, "The Theory and Practice of Financial Stability," GEI Newsletter Issue No. 6.
[5] Ferguson, Roger, 2002, "Should Financial Stability Be An Explicit Central Bank Objective?" (Washington: Federal Reserve Board)
[6] Foot, Michael, 2003, "What Is 'Financial Stability' and How Do We Get It?" The Roy Bridge Memorial Lecture (United Kingdom: Financial Services Authority)

the economy; and (d) where there are no relative price movements of either real or financial assets within the economy that will undermine (a) or (b). "The first three elements of this definition are, I hope, non contentious. In respect of (a) and (b), it seems implausible to define financial stability as occurring in a period of rapid inflation, or in a mid-1930s style period of low inflation but high unemployment. "Similarly in respect of (c), it would be strange to argue that there was financial stability in a period when banks were failing, or when normal conduits for long-term savings and borrowing in either the personal or corporate sectors were seriously malfunctioning. Such circumstances would mean the participants had lost confidence in financial intermediaries. It would mean, almost certainly, that economic growth was being damaged by the unavailability or relatively high cost of financial intermediation. "This leaves us with (d).... I would say that there are four main channels by which changes in asset prices might affect the real economy: by changing household wealth and thereby consumption...by a change in equity prices...by their impact on firms' balance sheets which can then affect corporate spending...[and] by their impact on capital flows, with for example inflows of capital—as during the dot.com boom in the US—strengthening the domestic currency."

Norges Bank[7]: "Financial stability means that the financial system is robust to disturbances in the economy, so that it is able to mediate financing, carry out payments, and redistribute risk in a satisfactory manner."

3. The Effects of Recent Financial Crises on Financial Stability and the Role of Central Banks and Authorities to Accomplish Financial Stability

In this section of my paper I have introduced some examples of financial crises and believe that to analyze the reasons and effects of such financial instabilities lead to better understanding of importance of financial stability to whole financial system. I have presented the role of central banks and related authorities in the process of achieving and maintaining financial stability. I strongly believe that to touch aforementioned points in

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[7] Norwegian Central Bank, 2003, Financial Stability Review

this part of my paper gives more practical insights what financial stability is, why it is important to financial system and global economy and how authorities can achieve it.

First of all it should be taken into consideration that financial stability is a condition which whole financial system can resist and absorb shocks which can lead to crisis. Conversely, financial crisis is a situation when some chain of adverse events undermines the confidence in a substantial part of the financial system, causes big value losses and have harmful effects on the real economy. In simple words financial crisis is a situation of great instability in the financial system. The most dangerous issue is that during financial crisis not only financial system but also real economy suffer heavily because of misallocation and underutilization of resources which lead to losses of real output. According to the Graphs below I will show in paper how the financial systems work and what is the contribution of financial system in the real economy. Furthermore, there a lot of exogenous and endogenous factors which are follow hand by hand with financial process. I briefly will explain the role of institution, markets and their infrastructure.
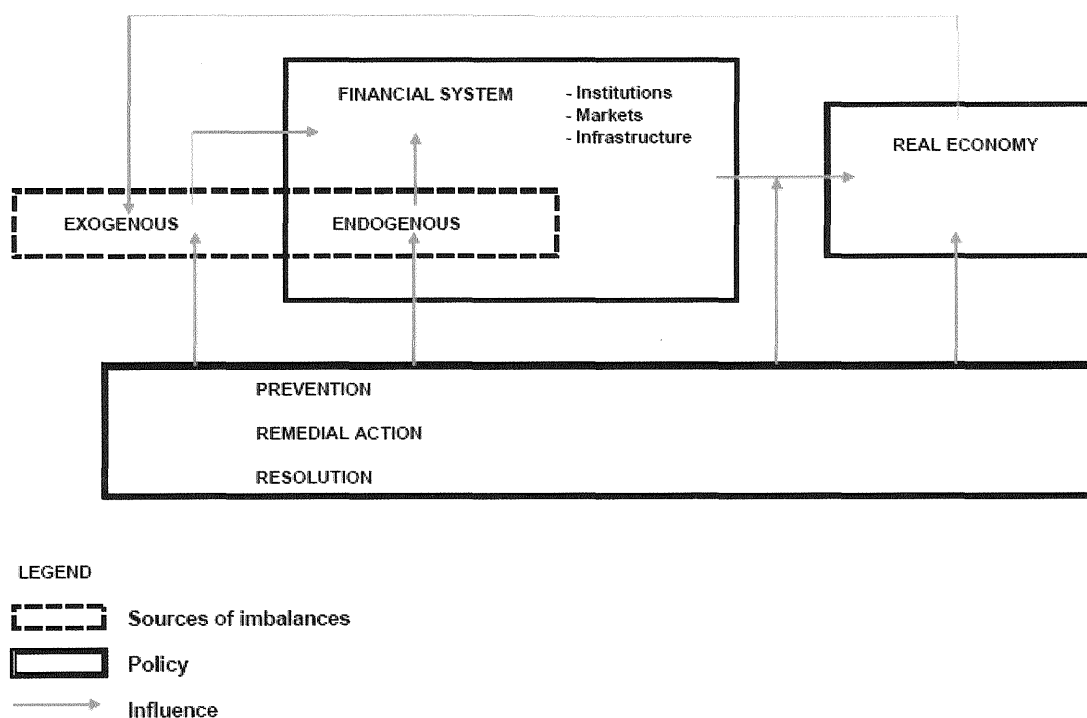
The reasons of financial crises can be different. For example, sharp declines in asset prices, the failure of one major bank, self–fulfilling among depositors that others will withdraw

their deposits in short-term[8] , terrorist attacks, natural catastrophes etc. However, the risks to financial system can arise within the system – endogenously and can originate from the outside of the system – exogenously. This distinction is crucial because different causes of instability require diverse policies. The close linkages between the elements of financial system contribute to the process. For example, the collapse of one bank causes the loss of confidence to such type of banks and worsens their position in the market, in turn, they can face liquidity problems, then, this liquidity problem can spread to all system and financial system cannot perform its functions.

But what can authorities do to prevent the financial instabilities? As I mentioned above financial stability is not a static condition but the situation in a continuum. To define which policies are relevant, authorities have to distinguish three conditions.

- Financial system is in the range of stability and can perform its functions well. The relevant policy in this situation must focus on maintaining stability, in other words, preventative measures.

- There are signs of potential imbalances and risks to financial system. Financial system gradually moves towards instability. This time the appropriate policy is remedial actions. For example, moral persuasion, more intensive super-vision etc. The example of such situation is "Secondary Banking Crisis" in Great Britain during 1974-76. There was a dramatic crash in property prices in Great Britain which caused dozens of small ("secondary") lending banks to be threatened with bankruptcy. The Bank of England released greater funds to such banks and the Bank's regulatory powers over lenders were increased to prevent such accidents.

- Financial system is unstable and cannot perform its functions. Authorities must focus on restoring financial stability through crisis resolution measures. For example, during 1987-93 central bank provided special loans to six banks and took control of three largest banks (equivalent to 85 % of banking-system assets) partly through Government Bank Investment Fund and state-backed Bank Insurance Fund in Norway. Similar measures were taken in Finland during 1991-94 when savings bank sector badly affected – government took control of three banks that accounted

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[8] Lai, Alexandra, 2003, "Financial Fragility: A Survey of the Theoretical Literature," in *Essays on Financial Stability*, by John Chant, Alexandra Lai, Mark Illing, and Fred Daniel, Bank of Canada

for 31 % of total system deposits. More outstanding example of the deterioration of financial stability is Global Financial Crisis which began in 2007 and continues until now. The first sign of crisis was U.S. subprime mortgage crisis which in turn caused liquidity problems in a whole financial system of USA. It caused major a number of major investment and commercial banks to collapse. For example, Wachovia, Washington Mutual, Lehman Brothers. The seriousness of the crisis is apparent from the price changes in the shares of the major financial institutions. For example, the shares of Bear Stearns before bailout had collapsed to 3$ from 154$. After the collapse of Lehman Brothers in September the crisis became more severe. Liquidity and funding risks of important financial institutions increased after the beginning of crisis as it is seen from the graph (this graph is derived from IMF Global Financial Stability Report 2008). A higher value indicates tighter market liquidity conditions. Given the close correlation between international financial markets crisis spread to other countries. Governments have taken a number of coordinated measures to stabilize markets. These measures include bailouts and liquidity injections in great amounts.
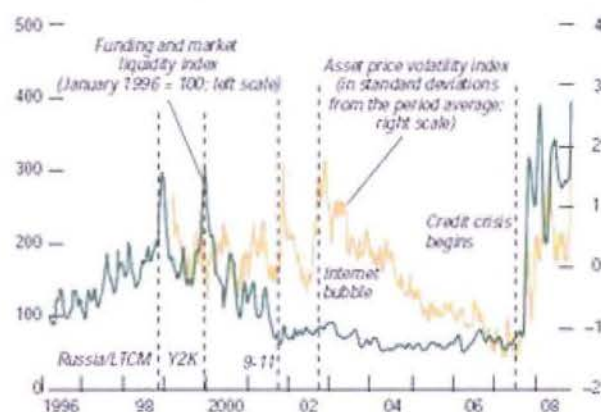
4. Four Phases of the Global Financial Crisis

The process as it has played out in countries across the globe has been manifest in four overlapping phases.

1) Contain the Contagion and Strengthen Financial Sectors. The first phase has been intervention to contain the contagion and strengthen financial sectors in countries. On a macroeconomic level, this has included policy actions such as lowering interest rates, expanding the money supply, quantitative (monetary) easing, and actions to restart and restore confidence in credit markets. On a microeconomic level, this has entailed actions to resolve underlying causes of the crisis including financial rescue packages for ailing firms, guaranteeing deposits at banks, injections of capital, disposing of toxic assets, and restructuring debt. This has involved decisive measures both in scope, cost, and extent of government reach. Actions taken include the rescue of financial institutions considered to be "too big to fail" and government takeovers of certain financial institutions, and government facilitation of mergers and acquisitions.

What has been learned from previous financial crises is that without a resolution of underlying problems with toxic assets and restoring health to the balance sheet of banks and other financial institutions, financial crises continue to drag on. This was particularly the case with Japan. Even Sweden, often viewed as a successful model of how to cope with a financial crisis, had to take decisive action to deal with the nonperforming assets of its banking system.

2) Coping with Macroeconomic Effects. The second phase of this process is less uncommon except in the depth of the economic troubles confronting countries around the world. Countries are coping with the macroeconomic impact of the crisis on their economies, firms, investors, and households. Many of these countries, particularly those with emerging and developing markets, have been pulled down by the ever widening flight of capital from their economies and by falling exports and commodity prices. In these cases, governments have turned to traditional monetary and fiscal policies to deal with recessionary economic conditions, declining tax revenues, and rising unemployment. Figure 1 shows the effect of the financial crisis on economic growth rates (annualized changes in real GDP by quarter) in selected nations of the world. The figure shows the difference between the 2001 recession that was confined primarily to countries such as the United States, Mexico, and Japan and the current financial crisis that is pulling down growth rates in a variety of countries.

Figure 1. Quarterly (Annualized) Economic Growth Rates for Selected Countries
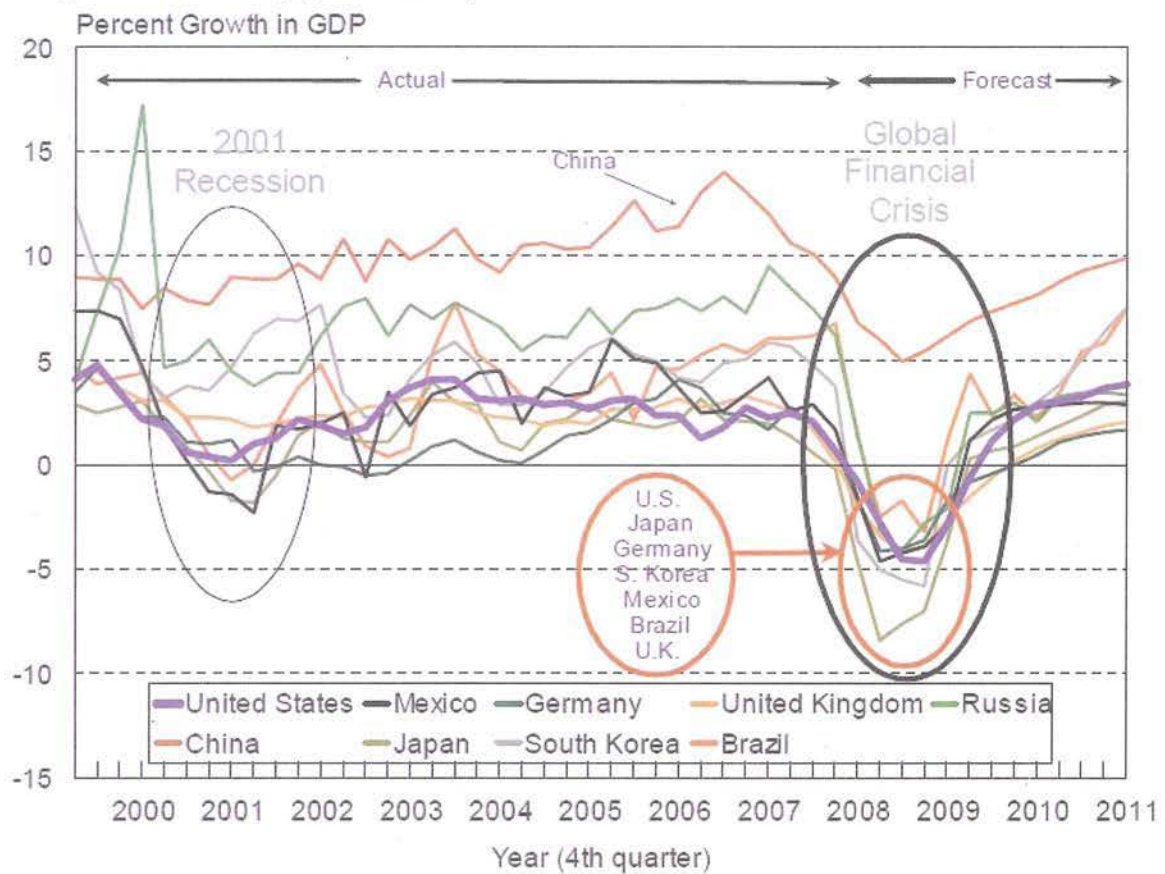
Source: Congressional Research Service. Data and forecasts (March 15) by Global Insight.

The slowdown—recession for many countries—is global. The implication of this synchronous drop in growth rates is that the United States and other nations may not be able to export their way out of recession. Even China is experiencing a "growth recession". There is no major economy that can play the role of an economic engine to pull other countries out of their economic doldrums.

In response to the recession or slowdown in economic growth, many countries have adopted fiscal stimulus packages designed to induce economic recovery or at least keep conditions from worsening. The global total for stimulus packages now exceeds $2 trillion, but some of the packages include measures that extend into subsequent years, so the total does not imply that the entire amount will translate into immediate government spending. The stimulus packages by definition are to be fiscal measures (government spending or tax

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cuts) but some packages include measures aimed at stabilizing banks and other financial institutions that usually are categorized as bank rescue or financial assistance packages. The $2 trillion total in stimulus packages amounts to approximately 3% of world gross domestic product, an amount that exceeds the call by the International Monetary Fund for fiscal stimulus totaling 2% of global GDP to counter worsening economic conditions worldwide. If only new fiscal stimulus measures to be done in 2009 are counted, however, the total and the percent of global GDP figures would be considerably lower. An analysis of the stimulus measures by the European Community for 2009 found that such measures amount to an estimated 1.32% of European Community GDP.

Several countries have borrowed heavily in international markets and carry debt denominated in Euros or dollars. As their currencies have depreciated, the local currency cost of this debt has skyrocketed. Other countries have banks with debt exposure almost as large as national GDP. Some observers have raised the possibility of a sovereign debt crisis (countries defaulting on government guaranteed debt) or as in the case of Iceland having to nationalize its banks and assume liabilities greater than the size of the national economy. Some of these countries have already turned to funding from the International Monetary Fund (IMF), World Bank and capital surplus countries. Under the Stand-By Arrangement facility, the IMF has provided or is in the process of providing financial support packages for Iceland ($2.1 billion), Ukraine ($16.4 billion), Hungary ($25.1 billion), Pakistan ($7.6 billion), Belarus ($2.46 billion), and Serbia ($530.3 million). The IMF also has loaned $77.1 million to Malawi and $100 million to the Kyrgyz Republic under an Exogenous Shocks facility designed to help low-income countries cope with emergencies caused by events beyond their control. Other countries, such as Poland and Turkey have been in talks with the IMF. In addition, nations, both industrialized and emerging, facing difficult economic conditions include most of Eastern Europe, Mexico, Argentina, South Korea, Indonesia, Spain, Greece, and Italy.

3) **Regulatory and Financial Market Reform.** The third phase of the process—to decide what changes may be needed in the financial system— is also underway. In order to coordinate reforms in national regulatory systems and give such proposals political backing, world leaders began a series of international meetings to address changes in

policy, regulations, oversight, and enforcement. Some are characterizing these meetings as Bretton Woods II. The G-20 leaders' Summit on Financial Markets and the World Economy that met on November 15, 2008, in Washington, DC, was the first of a series of summits to address these issues. The second was the G-20 Leader's Summit on April 2, 2009, in London, and the third is to be held in November 2009. In this third phase, the immediate issues to be addressed by the United States and other nations center on "fixing the system" and preventing future crises from occurring. Much of this involves the technicalities of regulation and oversight of financial markets, derivatives, and hedging activity, as well as standards for capital adequacy and a schema for funding and conducting future financial interventions, if necessary. In the November 2008 G-20 Summit, the leaders approved an Action Plan that sets forth a comprehensive work plan.

4) Dealing with Political, Social, and Security Effects. The fourth phase of the process is dealing with political, social, and security effects of the financial turmoil. These are secondary effects that relate to the role of the United States on the world stage, its leadership position relative to other countries, and the political and social impact within countries affected by the crisis. For example, on February 12, 2009, the U.S. Director of National Intelligence, Dennis Blair, told Congress that instability in countries around the world caused by the global economic crisis and its geopolitical implications, rather than terrorism, is the primary near-term security threat to the United States. The political, social, and security effects of the global financial crisis can be divided roughly into the following categories:

- effects on political leadership and regimes inside countries;
- effects on ideologies, protectionism, and state capitalism;
- effects on international leadership and attitudes toward the United States;
- effects on supranational political and economic organizations; and
- effects on poverty and flows of aid resources
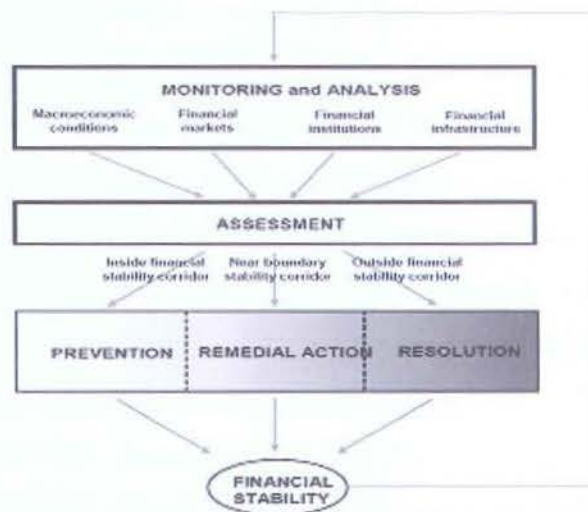
The model that I included above show the overall steps in the process of reaching to financial stability. Each of the part of model has its own explanation and definitions. Generally speaking most of the imbalance in financial markets and systems is the result of poor risk assessment process. Model I have included is the one of the sensible implementation of the financial imbalances. Nevertheless, according to this model policies of central bank for financial stability should be following. It should be taken into account that actions regarding stability, especially on monetary policy and rescuing on bank sector prevention, remedial actions and resolutions encompass below significant steps:

- Decrease in interest rates
- Decrease in mandatory reserves
- Devaluation of national currency
- Recapitalization
- Providing loans for stabilization
- Restructuring (Nationalization)
- Expansion of deposits guaranties
- Purchase of toxic assets.

The role of banks is integral and inevitable to any economy. Therefore all the preventative measurements are very critical in banking and financial system. They provide financing for commercial enterprises, access to payment systems, and a variety of retail financial services for the economy at large. Some banks have a broader impact on the macro sector

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of the economy, facilitating the transmission of monetary policy by making credit and liquidity available in difficult market conditions. The integral role that banks play in the national economy is demonstrated by the almost universal practice of states in regulating the banking industry and providing, in many cases, a government safety net to compensate depositors when banks fail. Financial regulation and stability are necessary because of the multiplier effect that banking activities have on the rest of the economy. The large number of stakeholders (such as employees, customers, suppliers etc), whose economic well-being depends on the health of the banking industry, depend on appropriate regulatory practices and supervision. Indeed, in a healthy banking system, the supervisors and regulators themselves are stakeholders acting on behalf of society at large. Their primary function is to develop substantive standards and other risk management procedures for financial institutions in which regulatory risk measures correspond to the overall economic and operational risk faced by a bank. Accordingly, it is imperative that financial regulators ensure that banking and other financial institutions have strong governance structures, especially in light of the pervasive changes in the nature and structure of both the banking industry and the regulation which governs its activities. On the other hand, a global financial meltdown will affect the livelihoods of almost everyone in an increasingly inter-connected world. In my opinion, the main anti-measures should be following:

- Establishing an early-warning system to help detect systemic risk.

- Banks should have a stronger capital cushion, with graduated regulatory capital requirements (i.e., capital ratios that increase with bank size), to "discourage them from becoming too big and to offset their competitive advantage".

- Establish resolution procedures for closing troubled financial institutions in the shadow banking system, such as investment banks and hedge funds.

- Ensure any financial institution has the necessary capital to support its financial commitments. Regulate credit derivatives and ensure they are traded on well-capitalized exchanges to limit counterparty risk.

- Restrict the leverage that financial institutions can assume. Require executive compensation to be more related to long-term performance.

- Break-up institutions that are "too big to fail" to limit systemic risk.

- Regulate institutions that "act like banks" similarly to banks.

- Require financial institutions to maintain sufficient "contingent capital" (i.e., pay insurance premiums to the government during boom periods, in exchange for payments during a downturn).

- To evaluate carefully the borrowers` abilities to pay back the lent amount and evaluate borrowers` properties. Then to identify and assess the risks. Only after assessment decide if it is worth to lend money or not.

- Nowadays the companies and financial organization try to increase borrowing in order to attract consumers. This issue increases leverage which is as we indicated above is the main source of the crisis. In order to eliminate such increase in borrowing it would be reasonable to increase the competition among them instead of increasing the crediting in order to attract consumers.

Compared to last year, %

Export of goods

Production in industry (sağ)

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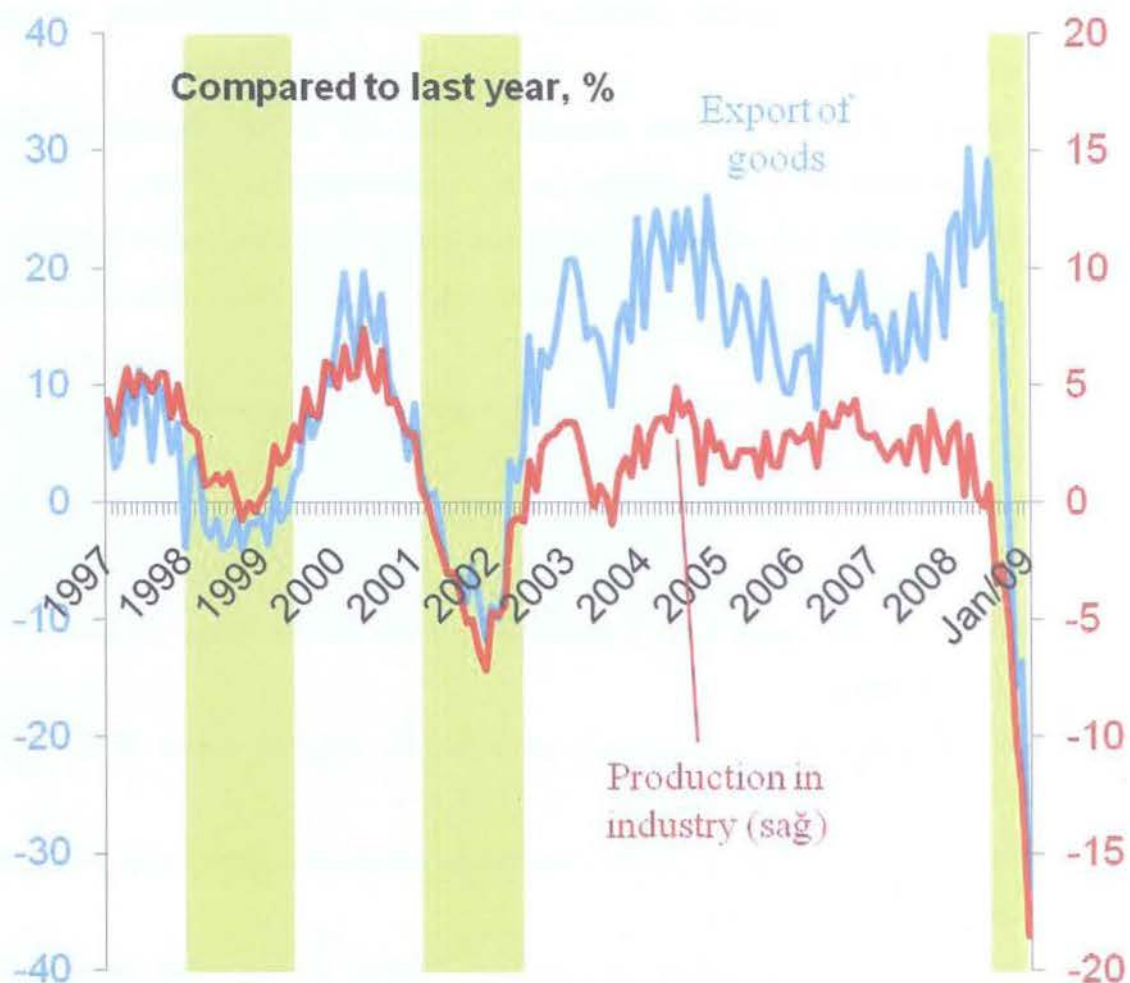
Finally, I shed light on G20 summit's major financial prevention acts. according to G20 Summit the main directions of financial Crisis prevention actions should be following:

- Reject protectionism, which exacerbates rather than mitigates financial and economic challenges; Strive to reach an agreement this year on modalities that leads to an ambitious outcome to the Doha Round of World Trade Organization negotiations;

- Refrain from imposing any new trade or vestment barriers for the next 12 months; Reaffirm development assistance commitments and urge both developed and emerging economies to undertake commitments consistent with their capacities and roles in the global economy. Address weaknesses in accounting and disclosure standards for off-balance sheet vehicles;

- Ensure that credit rating agencies meet the highest standards and avoid conflicts of interest, provide greater disclosure to investors, and differentiate ratings for complex products;

- Ensure that firms maintain adequate capital, and set out strengthened capital requirements for banks' structured credit and securitization activities ;

- Develop enhanced guidance to strengthen banks' risk management practices, and ensure that firms develop processes that look at whether they are accumulating too much risk;

- Establish processes whereby national supervisors who oversee globally active financial institutions meet together and share information; and

- Expand the Financial Stability Forum to include a broader membership of emerging economies.

- The leaders instructed finance ministers to make specific recommendations in the following areas:

- Avoiding regulatory policies that exacerbate the ups and downs of the business cycle;

- Reviewing and aligning global accounting standards, particularly for complex securities in times of stress;

- Strengthening transparency of credit derivatives markets and reducing their systemic risks;

- Reviewing incentives for risk-taking and innovation reflected in compensation practices; and

- Reviewing the mandates, governance, and resource requirements of the International

5. Conclusion

Over the recent years there has been an evolution of diverse approaches on the nature of financial stability – what is it, how can financial stability be best characterized, what are the reasons of instabilities, what are the roles of central banks in the process of maintaining and accomplishing financial stability, what are the relevant policies etc. Because financial stability can be maintained or achieved when related authorities have clear understanding what it is and why it is important. Let us say, global financial crisis has demonstrated already that it is no respecter of persons, nor of particular industries, nor of national boundaries. It is a crisis which is simultaneously individual, national and global. It is a crisis of both the developed and the developing world. It is a crisis which is at once institutional, intellectual and ideological. It has called into question the prevailing neo-liberal economic orthodoxy of the past 30 years - the orthodoxy that has underpinned the national and global regulatory frameworks that have so spectacularly failed to prevent the economic mayhem which has now been visited upon us. Financial markets have suffered the greatest dislocation in our lifetime. In my paper, I discussed these topics, much or less. Increasingly, central banks and authorities give a great attention to maintaining the stability of their countries' financial system. This is very crucial not only to the financial system itself but also to the whole economy. It is worthwhile to mention, central banks have the main responsibility in this processes. For many years these institutions focused only to maintain monetary stability, but as it is seen from the recent crises, notably from the global financial crisis, focusing only monetary stability is not sufficient to achieve or even to maintain stability in financial sector. Therefore, we can easily reach in a conclusion that central banks will be more sensitive to these issues in future. For example, a number of central banks have been providing financial stability reports since 2003. Another issue is which policies must be realized in order to maintain stability. Honestly, it is very complicated because even which indicators best describe the financial stability have not

been identified so far. However, I believe that depending on the level of and type of risks to the whole financial system central banks and authorities can apply appropriate tools. But identifying the level of problem at the initial stage of crisis or instability in order to select *appropriate policy* tool is problematic. For example, when on 19 October 1987 stock market crashed in USA interest rate cuts and moral suasion by Federal Reserve was sufficient to achieve stability, at least prevent crisis from broadening. In contrast, even 700 billion $ liquidity injection and enormous interest rate cuts by Fed cannot build up the confidence of investors in financial institutions and markets recently. Consequently, despite of many experts of international financial institutions and central banks have done much work so far, further broad and deep research is needed, especially about relevant preventative policies, that is, policies to maintain financial stability

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Testing the Balassa-Samuelson Hypothesis:

Evidence from 10 OECD Countries

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Abstract

This study tests the Balassa-Samuelson (BS) hypothesis for 10 OECD countries between 1975 and 2007 using the Johansen cointegration approach. The cointegration analysis confirms the existence of cointegration among the real effective exchange rate, relative productivity and terms of trade in 10 OECD countries. The study's major findings suggest that the BS hypothesis still works well in OECD countries while explaining the long-run movements of the real effective exchange rates that it holds for 8 out of 10 countries in the unrestricted model.

1. Introduction

The investigation of the differences in exchange rates across countries has always been an interesting and tough job for economists. The history of attempts that trying to explain the differences in exchange rates across countries might go back till 16th century, however, the modern theories of exchange rates start with the Purchasing Power Parity (PPP) theorem. In 1918, Gustav Cassel, a famous Swedish economist, proposed the Purchasing Power Parity (PPP) theorem which based on law of one price, and states that in the long-run exchange rates should be identical across countries. In other words, "the PPP theory predicts that, in the long-run, relative prices determine the exchange rate (i.e., $e=P/P^*$); and any deviation of relative prices from the equilibrium exchange rate will be transient and ultimately mean-reverting in the long-run" (Chowdhury, 2007, p.4). Nonetheless,

empirical studies reject this version of (absolute) PPP theorem.[1] Apart from reasons such as transaction costs, transportation costs and inefficient markets, the most convincing explanation came from Balassa (1964) and Samuelson (1964) -known as the Balassa-Samuelson hypothesis- which states that the productivity differences in tradables and nontradables sectors across countries lead to differentiation of wages, price levels and, hence the real exchange rates. In particular, the BS hypothesis explains the two effects:

(i) The price level differences across countries (The Penn Effect): According to the BS hypothesis, when the productivity level of tradables sector in home increases relative to foreign country's tradables sector, home experiences higher price level due to increase in general wage level.[2] This is known as the Penn Effect, which is an explanation of the high price levels in rich (high per capita income) countries.

(ii) The real exchange rate differences across countries (The BS effect): The BS hypothesis claims that in a country where the productivity of tradables sector is higher than the other country, then the real exchange rate index (R) of this country will be higher. This increase in the real exchange rate index -which is known as real appreciation- stems from the definition of the real exchange rate in which price level of home (P) stands in the numerator and price level of foreign country (P*) and nominal exchange rate (e) stand in the denominator (R= P/e.P*). Throughout the study, we concentrate on and test the second effect of the BS hypothesis regarding the real exchange rate differences across countries.

This study aims to test the validity of the BS hypothesis for 10 OECD countries between 1975 and 2007 using the recent data sets and econometric methods. The study differs from others in three respects. First, the paper tests the BS hypothesis not only for a single country but also for 10 OECD countries for the robustness of the analysis. Second, the OECD average of labor productivity is used as the benchmark to calculate the relative productivities in the analysis. Third, in addition to the relative productivity explanatory

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[1] Antweiler (2008) and OECD (2005) give clear definitions of PPP. And see (Pilbeam, 2006, p.135-139) for empirical studies which reject the PPP theorem.
[2] Assume that the productivity levels of nontradables sectors are identical in two countries.

variable, the "terms of trade" is added as the second explanatory variable, which can be seen as a test of "the extended (unrestricted) BS model".[3]

The main conclusion of the study is that the BS hypothesis still keeps its importance in explaining the real exchange rate movements across OECD countries. The findings of the study mostly confirm the validity of the BS hypothesis, even though the results are country and model specific. All cointegration tests verify the long-run relation among the real effective exchange rate, relative productivity and terms of trade. In particular, the country-specific estimations indicate that the BS hypothesis is valid for 7 countries out of 10 when the terms of trade variable excluded (the original BS model). When the terms of trade included (the extended BS model), the BS hypothesis is rejected only for 2 countries out of 10.

The organization of the study is as follows. The next section briefly explains the importance of the BS hypothesis. Section 1.2 gives a literature review in comparative perspective paired with a summary literature results table. Section 2 revisits the BS model formally in which the deterministic and empirical BS models are derived, and assumptions are explained. Section 2 also describes the data sources and transformation moreover it presents the unit root tests, cointegration tests, and estimation results. Section 3 reviews the main findings of the study and concludes.

1.1. Why Does the Balassa-Samuelson Hypothesis Get a Great Deal of Attention?

After the seminal papers of Balassa and Samuelson in the same year (1964), in which they explain the real exchange rate differentials across countries with productivity differences, the popularity of the BS hypothesis has increased over time. According to a survey conducted by Tica and Druzic (2006); "In total, since it was (re)discovered in 1964, the theory has been tested 58 times in 98 countries in time series or panel analyses and in 142 countries in cross-country analyses. In these estimates, country-specific BS coefficients

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[3] See Alexius and Nilsson (2000) for a use of similar name.

have been estimated 164 times in total, and at least once for 65 different countries". (Tica and Druzic, 2006, p.4)

Some of the main reasons can be counted as follows why the BS hypothesis preserves its importance and popularity in empirical economics:

(a) The continuing desire of researchers to explain why law of one price fails across countries.

(b) The examination of the determinants of real exchange rates is economically very important for economists. Since the real exchange rates not only affect the net trade and current account balance of a country, but also affect the long-run economic growth thereby the development of the country.

(c) The desire of researchers to explain the high price levels in developed countries.

(d) The invention of new econometric techniques and easy implementation of the techniques via new econometric software programs. This enables researchers to test the BS hypothesis by using various kinds of models and techniques.

(e) The theoretical contributions to the theorem by adding additional variables such as terms of trade, oil prices and openness.

(f) The availability of new data sets throughout the time, especially the sectoral productivity databases enable scholars to test the BS hypothesis without assuming all sectors have the same productivity level within a country.

1.2. Literature Review

In here, we discuss some selected empirical studies regarding the BS hypothesis in which authors used similar methods and variables with us. Then, we present the summary findings of some selected studies in Table 1.

In his pioneering study, Balassa (1964) employed OLS analysis in order to estimate the equation in which real exchange rates were used as the dependent variable and per capita income levels as the independent ones. Froot and Rogoff (1994) note that "Balassa (1964) reports a regression for a cross-section of twelve industrial countries for the year 1960 in which the estimated BS effect was 0.51 with a positive intercept term." This result implies

that 1% increase in per capita income levels lead to 0.51% increase in real exchange rate levels.

De Gregorio and Wolf (1994) successfully integrated the "terms of trade" into the BS model. In their influential study, they develop a simple model of a small open economy producing exportable and nontradable goods and consuming importable and nontradable goods, and present empirical evidence for a sample of fourteen OECD countries. Clearly, they conclude that "The evidence from OECD countries broadly supports the predictions of the model, namely that faster productivity growth in the tradable relative to the nontradable sector and an improvement in the terms of trade induces a real appreciation" (De Gregorio & Wolf, 1994, p.i).

In a benchmark article for our study, Alexius and Nilsson (2000) use the terms of trade and relative real GDP (as a proxy of productivity) to explain the real exchange rate movements in 15 OECD countries from 1960 to 1996. They use the Johansen cointegration approach in search of cointegration relation among variables and estimate the BS model by using FMOLS method. And they report the presence of cointegration among three series in all countries and estimate the correct sign (positive) for the BS effect in two thirds of the cases.

Table 1. Summary of Some Selected Studies Regarding the BS Hypothesis

Authors	Dependent Variables	Independent Variables	Method	Estimated BS effect
Balassa (1964)	RER	Per capita income	OLS	0.51
Alexius and Nilsson (2000)	RER	Domestic and foreign GDP, terms of trade	Johansen cointegration and FMOLS	between -1 and 1.9
Egert (2002)	REER	Labor productivity growth	VAR, Johansen cointegration	between -0.3 and 2.4
De Broeck and Slok (2001)	REER	Productivity, openness, terms of trade	Pooled mean estimation	between 0 and 3.5
Choudhri and Khan (2005)	RER	Labor productivity differences, terms of trade	DOLS	between 0.9 and 1.2
Drine and Rault (2005)	REER, Price levels	Per capita GDP, productivity differences	VAR-ECM, Pedroni cointegration	between 0.6 and 1.5

2. The Balassa-Samuelson Model

In this section, the BS model is presented formally and an empirical BS model is derived to use in our estimations. After Balassa (1964) and Samuelson (1964) and with theoretical contribution of De Gregorio and Wolf (1994) regarding the "terms of trade", today widely accepted the BS model can be formalized to explain the real exchange rates as follows:

$$RER = f(PRO, TOT) \tag{1}$$

Simply, the BS hypothesis predicts that PRO and TOT variables are assumed to have a positive effect on the real exchange rate.

2.1. The Basic Framework of the Balassa-Samuelson Model

Let there be 2-country and 2-sector world in which T stands for tradables and N stands for non-tradables sector. And * (asterisks) denotes the foreign country. Assume that labor (L) is immobile internationally whilst perfectly mobile within the country. And capital (K) is perfectly mobile internationally. Non-tradables sector produces the goods in a country which cannot be traded internationally. In contrast, tradables sector produces the goods which can be traded within country and internationally. In this framework, international trade assumed to be equalize prices of traded goods in two countries that is normalized to 1, which necessarily implies e $=1$ and $P_T^{\rightarrow} = P_T = 1$.

Recall the real exchange rate definition;

$$RER = P / eP^{\rightarrow} \tag{2}$$

In which

$$P = P_T^{\alpha} \times P_N^{1-\alpha} \tag{3}$$

is general price level equation in home country and

$$P^* = P_T^{\rightarrow \alpha} \times P_N^{\rightarrow 1-\alpha} \tag{4}$$

is the general price level equation in foreign country. Note that e is nominal exchange rate, defined as the price of the domestic currency in terms of the foreign one.

If we divide (3) with (4) and apply the assumption $P_T^{\rightarrow} = P_T = 1$ equation (2) can be written as[4]

$$RER= \tag{5}$$

$$Y = Y_T + Y_N; Y_T = A_T F(K_T, L_T); Y_N = A_N F(K_N, L_N) \tag{6}$$

(6) defines production function at home and

$$Y^{\rightarrow} = Y_T^{\rightarrow} + Y_N^{\rightarrow}; Y_T^{\rightarrow} = A_T^{\rightarrow} G(K_T^{\rightarrow}, L_T^{\rightarrow}); Y_N^{\rightarrow} = A_N^{\rightarrow} G(K_N^{\rightarrow}, L_N^{\rightarrow}) \tag{7}$$

(7) defines production function in foreign economy.

Now we turn to the production side of the economy, in the long-run as an effect of "perfect labor mobility" within the country, the real wage levels are identical in T and N sectors (i.e., $W = W_T / P = W_N / P$). And by using the first order conditions of equations (6) and (7) in profit maximization context, one may show that the marginal product of capital equals to the world interest rate (factor price of K), and the marginal product of labor equals to the nominal wage (factor price of L) in two sectors.[5] That is to say, nominal wages $[(W]_\downarrow T \; and \; W_\downarrow N$ are equalized across sectors within the country. Hence, we can write

$$W = P_T \times A_T = P_N \times A_N \; ; \; since \; P_T = 1; \; \rightarrow \; P_N = {}^{A_T}/_{A_N} \tag{8}$$

$$W^* = P_T^* \times A_T^* = P_N^* \times A_N^*; \; since \; P_T^* = 1; \; \rightarrow \; P_N^* = {}^{A_T^*}/_{A_N^*} \tag{9}$$

Under the assumption of "the shares of labor income in non-tradables and tradables sectors are equal";[6] plugging (8) and (9) into equation (5) and taking the natural logarithms yield the deterministic BS model equation:

$$ln\,RER = (1 - \alpha)[(ln\,A_T - ln\,A_T^*) - (ln\,A_N - ln\,A_N^*)] \tag{10}$$

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[4] In other words, "in a two-good world, the relative price level (the real exchange rate) between the countries depends solely on the relative price of non-tradables" (Muscatelli et al., 2007, p.1405).

[5] For an extensive exposition of the derivations see (Dumitru & Jianu, 2009, p.885-886) and (Lothian & Taylor, 2008, p.1745-1747).

[6] If we do not make this assumption there should be an additional ratio in front of in the square brackets, which represents the shares of the labor income in non-tradables and tradables sectors. (Obstfeld & Rogoff, 1996, p.208-212) explicitly show the derivation of this type of equation. However, they also use the equation (10) in the sense that empirics showed that this ratio is almost one.

With the assumption that $A_N = A_N^*$, then non-tradables sector vanishes from equation (10) and it becomes

$$In\ RER = (1 - \alpha)[(In\ A_T - In\ A_T^*)] \tag{11}$$

In equation (11), the coefficient $(1-\alpha)$ is known as the BS effect and theoretically assumed to be positive. Thus the BS hypothesis suggests that, in home country an increase in the productivity of tradables relative to foreign country should associate with an increase in the real exchange rate level of home country. Put differently home country, whose productivity growth rate is higher than the foreign one in tradables, firstly experiences an increase in wage levels in both sectors due to factor price equalization across sectors within the country. Then the general price level, e.g. CPI, goes up in home due to high wages level. Consequently, from the definition of the real exchange rate (eq.2), relatively high price level in home leads to an increase in RER, which is known as real appreciation.

2.2. The Empirical Balassa-Samuelson Model

In order to use the deterministic BS model (eq.11) in our estimations, we need to convert it into an empirical one. Before converting it into an empirical model, it is beneficial to explain the assumption that we make in equation (11) that "there is no productivity growth in non-tradables sector over time" ($A_N = A_N^*$). Although it seems as a strong assumption, in empirical studies it has been widely employed such as in Egert (2002) and Lothian and Taylor (2008). Moreover, many studies such as Balassa (1964), Alexius and Nilsson (2000), which use relative GDP as a proxy of relative productivity of countries implicitly make this assumption. The rationale behind this assumption is two-fold for our study. First, there is no long time series data of sectoral productivity for cross-section analysis. Second, there is no consensus among scholars today, about the classification of some sectors whether they are tradables or not. In this respect, for the robustness of the BS hypothesis test of 10 countries, the assumption we make seems plausible in point of view of theory. In fact, this assumption implies that relative to tradables sector, non-tradables sector's productivity growth rate can be negligible.

And if we write equation (11) as a stochastic model with an intercept term in natural logarithmic form and eliminate the T (sectoral) subscript, we get the basic empirical BS model:[7]

$$\ln REER_{i,t} = \delta + \beta_1 * \ln\left(\frac{A_{i,t}}{A_t^*}\right) + u_{i,t} \tag{12}$$

And as we mentioned, especially after the study of De Gregorio and Wolf (1994) the terms of trade has been used widely as a second independent variable in the BS model such as in Choudhri and Khan (2005), and Jaunky (2007). Thus, we add the terms of trade to equation (12) and get equation (13).

$$\ln REER_{i,t} = \delta + \beta_1 * \ln\left(\frac{A_{i,t}}{A_t^*}\right) + \beta_2 * \ln(TOT_{i,t}) + u_{i,t} \tag{13.i}$$

If we denote the relative productivity $\left(\frac{A_{i,t}}{A_t^*}\right)$ as "PRO", simply we can write,

$$\ln REER_{i,t} = \delta + \beta_1 * \ln(PRO_{i,t}) + \beta_2 * \ln(TOT_{i,t}) + u_{i,t} \tag{13.ii}$$

In our estimations, the derived empirical BS model (eq.13.ii), which includes the terms of trade, is used as the benchmark equation (unrestricted model) and the model without the terms of trade (eq.12) is used as the restricted BS model.

Before proceeding to data description section, it is crucial to define the variables and coefficients of the equations (12) and (13). The definitions of the variables and expectations about the coefficients are as follows:

$REER_{i,t}$: According to IMF, "the real effective exchange rate is computed as the weighted geometric average of the price of the domestic country relative to the prices of its trade partners". And CPI-based REER can be expressed as:[8]

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[7] Note that we use REER in eq.12 instead of RER, since we use REER data in model estimations.
[8] For a detailed exposition of calculations and weights; see IMF (2008), CBRT (2008), Zanello and Dominique (1997).

$$REER = \prod_{j \neq i} \left[\frac{P_i R_i}{P_j R_j} \right]^{W_{ij}}$$

(14)

In where P_i is home country's CPI index, R_i is nominal exchange rate of home country in US dollars, P_j is price index of country j (foreign), R_j is nominal exchange rate of country j's currency in US dollars, and W_{ij} is country j's weight for home. In this type of REER definition, an increase in the index denotes a real appreciation of the home currency, whereas a decrease implies a real depreciation.

$PRO_{i,t}$: Relative productivity $\left(\dfrac{A_{i,t}}{A_t^*} \right)$ in where;

$A_{i,t}$: Labor productivity in manufacturing sector (tradables) in country i.

A_t^* : Unweighted mean of "Labor productivity in manufacturing sector (tradables) of 14 OECD countries", simply "average productivity of OECD".

$TOT_{i,t}$: Terms of trade (relative prices of country i's export to import).

β_1 : The Balassa- Samuelson (BS) effect; theoretical *expected sign is positive.*

β_2 : The terms of trade (TOT) effect; theoretical *expected sign is positive.*

i: Canada, Denmark, Italy, Germany, Japan, Netherlands, Norway, Sweden, UK, USA.

t: 1975, 1976…2007.

The β_1 and β_2 coefficients can be interpreted as the elasticity of the PRO and TOT with respect to REER, since the independent and dependent variables are in natural logarithmic forms. Simply, the expected positive signs of the coefficients point out that; an (%) increase in "the relative productivity" and an (%) increase in "the terms of trade" in country i, should associate with an (%) increase in the real effective exchange rate. Thus, the main goal of the estimations in section 2.5 is to find out the sign and size of these coefficients for 10 countries to test the validity of the BS hypothesis.

2.3. Data Sources and Description of Data

To test the BS hypothesis, 10 OECD countries are selected for the 1975-2007 period. In other words, the dataset is constructed with 10 cross-section units and 33-year sample.

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Cross section units (countries) and data length are selected according to data availability. Nonetheless, the selected 10 countries have similar properties in the sense that all of them are OECD countries and developed countries in terms of per capita income by the end of 2007.

The real effective exchange rate data are extracted from World Development Indicators. WDI uses the IMF-IFS statistics database as the main source to extract the CPI-based real effective exchange rate data. More precisely, our CPI-based REER data set is taken from the IMF-IFS via WDI database which uses 2000 as the base year (2000=100).

"Labor productivity (output per employed person) in manufacturing sector" is chosen as the proxy of productivity in tradables sector. It is worth mentioning that there is a long lasting debate about the best productivity proxy issue in the literature. Although "labor productivity" has been used in empirical studies widely, as mentioned in section 2, some authors use GDP as a proxy and some argue that total factor productivity (TFP) is a better proxy than the labor productivity. However, it is always mentioned that TFP is difficult to calculate for different type of sectors and countries, moreover comparable long time series data are not available for our study.[9]

The labor productivity data in manufacturing sector are taken from the publication of "U.S. Department of Labor, Bureau of Labor Statistics" in March 2009 which uses 1996 as a base year (1996=100). Before the calculation of the relative productivity data, we converted the base year 1996 into 2000 for consistency with two other variables' base years. And to construct the relative labor productivity data the "unweighted mean of labor productivity of 14 OECD countries" is used as the benchmark.[10] For example, to calculate the relative productivity for Canada in 1980; first we calculate the "unweighted mean of labor productivity in manufacturing sector of 14 OECD countries" in 1980. Then Canada's labor productivity index in 1980 is divided by this mean value to get the "PRO" (the relative productivity) data for Canada.

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[9] See the discussion on this issue in (Tica & Druzic, 2006, p.11)
[10] These 14 countries are Australia, Belgium, Canada, Denmark, France, Italy, Germany, Japan, Netherlands, Norway, Spain, Sweden, UK, and USA.

The second explanatory variable of the model "terms of trade" data are calculated from the IMF-IFS data base. The terms of trade is defined as the relative prices of a country's export to import. In this regard, export and import unit prices of 10 countries are extracted from the IMF-IFS data base in which 2000 is used as the base year (2000=100). By taking the ratio of two prices, we get the raw terms of trade data. Then, we multiply it by 100 in order to make the scale of the TOT index 100, as the REER and relative productivity indices.

2.4. Methods

As mentioned in introduction, one of the distinguishing features of the study is the use of Johansen approach to test the BS hypothesis for 10 OECD countries. As usual before starting the cointegration tests and estimations, we employ the country-specific unit root tests to identify the stationarity of the series. Then, in section 2.5, we follow a two-step approach to test the BS hypothesis for 10 OECD countries:

- First, we test whether or not; there is cointegration relation among REER, PRO and TOT variables.
- Second, we estimate the coefficients of the BS model (equations 12 and 13), and according to estimation results, we decide whether the BS hypothesis holds or not.

In the econometrics literature, tests to detect the existence of stationarity (or non-stationarity) in the series are known as unit root tests. And if a series is becoming stationary after taking the first difference, it is known as integrated of order 1 or I (1). In time-series econometrics, non-stationary series (unit root) phenomenon is crucial in the sense that linear combinations of these series may generate spurious or nonsense regressions. In a spurious regression, although t values of the coefficients are significant, R-square and Durbin-Watson (d.w) values are low. More importantly, the estimated coefficients are biased. In this respect, detecting the existence of unit root in time-series becomes vital in order to get rid of spurious regression risk. One way to escape from spurious regression in existence of non-stationary series is looking for a cointegration relation among variables. Cointegration defined as:

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"Cointegration means that despite being individually nonstationary, a linear combination of two or more time series can be stationary". "Economically speaking, two variables will be cointegrated if they have a long-term, or equilibrium, relationship between them." (Gujarati, 2003, p.822 and 830)

In the cointegration literature, the Engle–Granger (EG) two-step approach is the usual one while testing the existence of cointegration, if there are only two series. In case of more than two series, the Johansen approach is the most applicable one, moreover it has some distinct advantages on the EG approach such as it is not a two-step approach. We employ the Johansen approach to test the existence of cointegration in country-specific series since we have three series. It is worth mentioning that in both approaches the necessary condition to search for cointegration is that "integration order of series should be the same". Simply, all series should be I (d).

Before cointegration tests, our first task is to conduct the unit root tests in order to understand whether the series are stationary or not. We mainly use the Augmented Dickey–Fuller (ADF) unit root test for individual series.

The ADF unit root test results of country-specific series are documented in Table 2. The ADF test uses the null hypothesis that "series has a unit root". For example, the unit root test for Canada's REER series is conducted as follows:

H_0: REER (Canada) has a unit root; H_1: REER (Canada) does not have a unit root.

For the level (the original values of series) we accept the null. Since, -1.53 is not significant at 5%. However if we take the first difference t-value becomes -5.57 which is significant at 5%, and we reject the null. Thus, we conclude that REER of Canada is I (1).

Table 2. ADF Unit Root Test Results of Country-Specific Series

	VARIABLES					
	REER		PRO		TOT	
	Level	First difference	Level	First difference	Level	First difference
CANADA	-1.535167	-5.570857	-3.025691	-4.618982	-1.499314	-4.735821
	(0.7950)	(0.0004)	(0.1417)	(0.0045)	(0.8088)	(0.0048)
DENMARK	-2.167158	-4.487358	-2.412536	-5.086615	-2.194638	-3.921323
	(0.4908)	(0.0062)	(0.3666)	(0.0015)	(0.4763)	(0.0235)
GERMANY	-3.117222	-5.785665	-0.141317	-6.160361	-2.216767	-4.511697
	(0.1195)	(0.0002)	(0.9917)	(0.0001)	(0.4648)	(0.0058)
ITALY	-2.141961	-4.864695	0.739853*	-4.287496*	-1.119237*	-4.739137*
	(0.5040)	(0.0024)	(0.9911)	(0.0021)	(0.6959)	(0.0006)
JAPAN	-1.966596*	-4.184688	-3.356682	-4.759665	-1.152128	-4.287677
	(0.2992)	(0.0027)	(0.0760)	(0.0032)	(0.9035)	(0.0099)
NETHERLANDS	-2.248193	-5.341529	-2.508787*	-5.780036*	-1.421048**	-4.559828**
	(0.4485)	(0.0007)	(0.1229)	(0.0001)	(0.8351)	(0.0052)
NORWAY	-2.397041	-5.479582	-2.389405	-4.694513	-0.891747	-4.762738
	(0.3740)	(0.0005)	(0.3777)	(0.0037)	(0.9448)	(0.0033)
SWEDEN	-2.688790	-4.963406	-2.875087	-4.043640	-1.287855	-3.631978
	(0.2474)	(0.0019)	(0.1833)	(0.0175)	(0.8729)	(0.0432)
UK	-2.080568	-4.680097	-2.383519*	-3.094322*	-2.248376	-4.528129
	(0.5366)	(0.0039)	(0.1544)	(0.0374)	(0.4484)	(0.0056)
USA	-3.161792	-4.423442	-1.868569	-4.239519	-2.476182	-5.036180
	(0.1106)	(0.0072)	(0.6472)	(0.0118)	(0.3368)	(0.0016)
DECISION	REER is I(1) for all series		PRO is I(1) for all series		TOT is I(1) for all series	

Notes: (1) Values without parentheses are t-statistics. (2) Probabilities are in parentheses. (3) Bold numbers denote that they are significant at 5% level. (4) All tests are conducted by including "intercept and trend", except series with (*). (5) Tests are conducted for series with (*) by including "intercept". (6) Values with (**) are Phillips-Perron t-statistics. (7) Automatic lag length selection (Schwarz) is used with maximum 8 lags.

In a similar fashion, when we conduct the unit root tests for all country-specific series, we conclude that all series are I (1).[11] That is to say, we can search cointegration relation among the series.

2.5. Country-Specific Cointegration and Estimation Results

Since all country-specific series are found I (1), we can seek cointegration relation among REER, PRO, and TOT variables for each country using the Johansen approach. The aim of

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[11] Only TOT series of Netherlands was found I (2) by the ADF test. However, the Phillips-Perron unit root test showed that the series is I (1). For consistency, we reported the Phillips-Perron test result for the TOT series of Netherlands that we marked the values with (**) in Table 2. In addition, the Elliot-Rothenberg-Stock unit root test also confirmed that this series is I (1).

the cointegration test is to understand whether or not, there is a long-run relation among REER, PRO and TOT variables as the BS hypothesis suggests.

After the influential papers of Johansen (1988) and Johansen and Juselius (1990), the Johansen approach has become popular in the cointegration literature. Johansen (1988) expresses the following VAR system:

$$\Delta Z_t = \Gamma_1 \Delta Z_{t-1} + \ldots \ldots + \Gamma_K \Delta Z_{t-K+1} + \pi \, Z_{t-K} + \varepsilon_t \tag{16}$$

"π contains information about the long-run relationships among the variables included in vector Z. Johansen (1988) demonstrates that π could be decomposed into the product of two p×r matrices, i.e., $\pi = \alpha\beta'$ where the elements of β matrix form the long-run cointegrating coefficients and the elements of α matrix form the adjustment parameters. Number of cointegrating vectors r is determined by the rank of π." (Bahmani-Oskooee & Economidou, 2009, p.195)

Johansen (1988) estimates equation (16) by using maximum likelihood method and extracts trace and maximum eigenvalue (λ-max) statistics to determine the number of cointegrating vectors. In addition, Johansen (1988) also reports the π matrix which contains the normalized α and β coefficients. However, there are two important things to decide before running the equation (16) for our model. These are:

(i) Optimal lag length of the VAR system (K in eq.16),
(ii) Decision about whether or not to add a trend (deterministic or quadratic) component to equation (16) and trend assumption in level data.

The specification of equation (16) regarding (i) and (ii) significantly affects the coefficients in π matrix. Put differently, the Johansen approach is sensitive to the specification of VAR-equation.[12] In order to decide the optimal lag length in our VAR model, we employ the "information criterion (IC)" approach. By using this approach we constructed Table 3, in

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[12] Stock and Watson (1993) show that Johansen's cointegration test is sensitive to the lag lengths used in the VAR models. Ahking (2002) and Turner (2007) find out that the Johansen approach is sensitive to the specification of the deterministic terms (trends).

which optimal lags are selected by three different information criterions. In the literature, there is no consensus among scholars which information criterion (IC) is the best one.[13] In this regard, in the last column we stated the "preferred lags" as a conclusion of our search process. "Preferred lags" are the lags which give the best results in terms of "rank of cointegration" and "significance of estimated coefficients" in π matrix. As seen in Table 3, sometimes the preferred lags are not determined by any three information criterions. This is not surprising, that we only reported three information criterion results.[14] In addition, this approach is used in other studies such as in Alexius and Nilsson (2000).

Table 3. Lag Length and Model Selection

	AIC	BIC	HQC	Preferred lags	Preferred Model
CANADA	4	1	4	5	Model 5
DENMARK	4	1	2	4	Model 3
GERMANY	5	1	5	4	Model 4
ITALY	5	1	5	5	Model 4
JAPAN	5	1	5	4	Model 5
NETHERLANDS	1	1	1	5	Model 3
NORWAY	1	1	1	5	Model 3
SWEDEN	1	1	1	5	Model 4
UK	2	1	1	2	Model 4
USA	5	4	5	5	Model 5

Notes: Lag length selection is conducted by using Gretl - VAR lag selection command, with k-max=5.
AIC: Akaike criterion, BIC: Schwartz Bayesian criterion, and HQC: Hannan-Quinn criterion. "Model numbers" are the same as in E-views 5.1-under Johansen cointegration command-. Model 3: Linear trends in level data, not in VAR. Model 4: Level data and VAR have linear trends. Model 5: Quadratic trends in level data, and linear trend in VAR. (Model 1 and Model 2 are found irrelevant for our analysis.)

There is no a systematic approach to decide whether or not to include a trend component into VAR models such as the IC approach for optimal lag length. Thus, determining the trend component and its type in VAR models is more problematic. Some authors, such as Ahking (2002) and Cheong (2005) prefer reporting VAR model estimation results with trend and without trend to tackle with this problem. But in here, we follow a similar "search process", as we did in "lag length selection".

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[13] For example, (Harris & Sollis, 2005, p.117) suggest the HQC; Khim and Liew (2004) report the AIC as the best information criterion in determining the optimal lag length.
[14] For instance, we did not report FPE (Final prediction error) criterion.

In E-views there are five different trend specification options under the Johansen cointegration approach. We tried all five specifications with "preferred lags" in country-specific VAR models and reported the best results in the last column of Table 3 according to:

- Significance of estimated coefficients in π matrix and trend component.
- Consistency between the "rank of cointegration" test results of trace statistics and max-eigenvalue.

In most cases, the model 5 (quadratic trends in level data, and linear trend in VAR) yielded the best results and in others at least a linear trend added to the model to capture the dynamic structure of the series.

Using the preferred lags and chosen model specifications, we run the VAR models for each country. Table 4 presents the trace statistics and max-eigenvalue results that we use to determine the "rank of cointegration" among three variables. For example, to find the rank of cointegration among three series of Canada, we follow two steps and test the following hypotheses:

Step 1: H_0: r = 0 (no cointegration); H_1: r $\leq$ 1 (at most one cointegration relation)

Using the trace statistic's critical value at 5%, we reject the null. In other words, 86.23 is too significant that its probability is 0; hence we accept the alternative hypothesis.

Step 2: H_0: r $\leq$ 1 (at most one cointegration relation); H_1: r $\leq$ 2 (at most two cointegration relations)

Since the probability of trace statistic is 0.87 that implies 5.98 is not significant at 5%. Thus we accept the null hypothesis. So far, according to trace rank test the rank of cointegration among Canada's three series is 1.

We reach the same conclusion, if we apply the same steps by using maximum eigenvalues.

Step 1: H_0: r = 0 (no cointegration); H_1: r $\leq$ 1 (at most one cointegration relation)

At 5%, 80.25 is significant that its probability is 0. Hence, we accept the alternative hypothesis.

Step 2: H_0: $r \leq 1$ (at most one cointegration relation); H_1: $r \leq 2$ (at most two cointegration relations)

Since the probability of maximum eigenvalue is 0.91, that implies 4.76 is not significant at 5%, thus we accept the null. So far, according to maximum eigenvalue rank test the rank of cointegration among Canada's three series is 1.

If we repeat the same steps for 10 countries, we see that the rank of cointegration among three series ranges between 1 and 3. Although the results of the rank tests are country-specific, for each country at least one cointegration relation has been found. That is to say, there is cointegration (long-run relation) among REER, PRO, and TOT variables in each country.

Table 4. Test Results For Cointegrating Rank

	Unrestricted Cointegration Trace Rank Test				Unrestricted Cointegration Maximum Eigenvalue Rank Test			
	tr (r = 0)	tr (r ≤ 1)	tr (r ≤ 2)	Rank	λ (r = 0)	λ (r ≤ 1)	λ (r ≤ 2)	Rank
CANADA	86.23475*	5.981138	1.219398	1	80.25361*	4.761740	1.219398	1
	(0.000)	(0.8703)	(0.2695)		(0.0000)	(0.9193)	(0.2695)	
DENMARK	42.65031*	11.66304	0.699328	1	30.98727*	10.96371	0.699328	1
	(0.0010)	(0.1738)	(0.4030)		(0.0015)	(0.1560)	(0.4030)	
GERMANY	98.63518*	32.78245*	11.74183	2	65.85273*	21.04062*	11.74183	2
	(0.0000)	(0.0059)	(0.0671)		(0.0000)	(0.0285)	(0.0671)	
ITALY	113.1335*	63.17209*	26.99207*	3	49.96144*	36.18001*	26.99207*	3
	(0.0000)	(0.0000)	(0.0001)		(0.0000)	(0.0001)	(0.0001)	
JAPAN	50.39815*	22.95751*	2.168101	2	27.44064*	20.78941*	2.168101	2
	(0.0006)	(0.0107)	(0.1409)		(0.0183)	(0.0141)	(0.1409)	
NETHERLANDS	64.27498*	17.626*	1.08409	2	46.64898*	16.54191*	1.08409	2
	(0.0000)	(0.0235)	(0.2978)		(0.0000)	(0.0215)	(0.2978)	
NORWAY	73.1332*	22.21885*	0.817101	2	50.91435*	21.40175*	0.817101	2
	(0.0000)	(0.0042)	(0.3660)		(0.0000)	(0.0032)	(0.3660)	
SWEDEN	62.55111*	33.13274*	13.00705*	3	29.41837*	20.12569*	13.00705*	3
	(0.0002)	(0.0052)	(0.0414)		(0.0161)	(0.0390)	(0.0414)	
UK	44.77427*	18.70152	6.547679	1	26.07275*	12.15384	6.547679	1
	(0.0322)	(0.2988)	(0.3941)		(0.0464)	(0.4010)	(0.3941)	
USA	55.87086*	27.62224*	3.961498	2	28.24862*	23.66074*	3.961498	2
	(0.0016)	(0.0300)	(0.7477)		(0.0235)	(0.0112)	(0.7477)	

Notes: (1) Values in parentheses are probabilities. (2) The null hypotheses are $r = 0$, $r \leq 1$, $r \leq 2$. (3) * denotes the rejection of the null at 5% level. (4) There is full consistency between rank test results of trace and maximum eigenvalue.

Now, the remaining task is to find the size and sign of this long-run relation among three variables. We do this by reporting the β elements of π matrix. If we take the REER as the dependent variable, the estimated normalized β coefficients show the size and sign of the relation among REER, PRO and TOT. To this end, we present Table 5, in which estimation results of the unrestricted (equation 13) and restricted models (equation 12) are reported. By interpreting the significance, size and sign of the normalized β coefficients, we decide whether the BS hypothesis holds or not. Moreover, by excluding the TOT variable from the unrestricted model, we can see whether it is important for the BS model.

Table 5. Country-Specific Estimation Results

	UNRESTRICTED MODEL (eq.13)			RESTRICTED MODEL (Restriction $\beta_2 = 0$) (eq.12)		
	REER	β1 (PRO)	β2 (TOT)	REER	β1 (PRO)	β2 (TOT)
CANADA	1.00	4.553164 (19.78)	1.042141 (5.55)	1.00	4.757827 (7.83)	0
DENMARK	1.00	0.542179 (13.5)	-0.22972 (-1.99)	1.00	0.515238 (10.2)	0
GERMANY	1.00	1.994009 (9.95)	1.318104 (8.73)	1.00	0.690840 (3.45)	0
ITALY	1.00	1.568617 (3.12)	-0.010976** (-0.012)	1.00	1.561349 (3.12)	0
JAPAN	1.00	-1.833648 (-2.25)	-1.037656 (-7.35)	1.00	-0.83088** (-0.674)	0
NETHERLANDS	1.00	0.882087* (1.71)	3.747938 (6.13)	1.00	4.584104 (3.27)	0
NORWAY	1.00	0.296982 (7.25)	0.240538 (4.01)	1.00	-0.02619** (-0.74)	0
SWEDEN	1.00	0.775681 (19.25)	0.115919 (2.2)	1.00	0.500234 (8.33)	0
UK	1.00	1.019265 (2.97)	-2.812291 (-4.07)	1.00	1.363578 (3.23)	0
USA	1.00	-1.740930 (-7.25)	0.814363* (1.84)	1.00	-2.104034 (-19.09)	0

Notes: (1) Values in parentheses are t-values. (2) All values are significant at 5% level, except the values with (*) and (**). (3) Values with (*) are significant at 10% level. (4) Values with (**) are insignificant.

The interpretations of country-specific estimation results are as follows:

Canada is a country in which the BS hypothesis holds in both the restricted and unrestricted models due to positive and significant $\hat{\beta}_1$ coefficients. Moreover, Canada has the biggest $\hat{\beta}_1$ coefficient in both the restricted and unrestricted models among 10 countries with values of 4.55 and 4.75, respectively. These results imply that in Canada, 1% increase in PRO leads to an increase in REER around 4.5%. Put another way, the biggest effect of relative productivity on REER takes place in Canada among 10 countries. In addition $\hat{\beta}_2$ is significant and equals to 1 for Canada, which is consistent with theory. This implies that 1% increase in the "terms of trade" associates with 1% increase in the real effective exchange rate of Canada. [15]

Denmark, Germany and Italy are three countries in which the BS hypothesis holds in both the restricted and unrestricted models due to positive and significant $\hat{\beta}_1$ coefficients. In particular, the estimated $\hat{\beta}_1$ coefficients are 0.54 in Denmark, 1.99 in Germany and 1.56 in Italy in the unrestricted model. In the restricted model the estimated $\hat{\beta}_1$ coefficients of these countries are as follows; 0.51 in Denmark, 0.69 in Germany, and 1.56 in Italy. In both models, the estimated $\hat{\beta}_1$ coefficients are significant at 5%. Hence, it is fair to conclude that the BS hypothesis performs well for these countries. Although the TOT effect $\hat{\beta}_2$ is 1.31 (consistent with prediction) in Germany, $\hat{\beta}_2$ has negative sign in Denmark and Italy which is inconsistent with the prediction of the BS hypothesis. In addition, $\hat{\beta}_2$ has been found insignificant for Italy, which implies the TOT variable has no effect on REER of Italy.

Netherlands, Sweden and UK are other three countries in which the BS hypothesis holds in both the restricted and unrestricted models due to positive and significant $\hat{\beta}_1$ coefficients. In the unrestricted model, the estimated $\hat{\beta}_1$ coefficients are 0.88 in Netherlands, 0.77 in Sweden and 1 in UK. In the restricted model, the estimated $\hat{\beta}_1$ coefficients are 4.58 in Netherlands, 0.5 in Sweden and 1.36 in UK. Furthermore, in the unrestricted model estimated $\hat{\beta}_2$ coefficients are 3.74 in Netherlands, 0.11 in Sweden and -2.8 in UK and all

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[15] Such a big BS effect seems to be over-estimated for Canada, thus it has to be used with a caution. A similar BS effect is estimated by Chowdhury (2007) for Australia. He estimated the BS effect 5.6 and he suspects that "the elasticity coefficient is over-estimated due to the exclusion of relevant explanatory variables" (Chowdhury, 2007, p.3). Thus, for the BS model of Canada inclusion of some relevant explanatory variables such as openness, government consumption, and total consumption may generate a less-biased $\hat{\beta}_1$ coefficient.

are significant. It is worth noting that exclusion of TOT led to a significant increase in the BS effect of Netherlands. This might stem from the relative importance of TOT for Netherlands. As seen in Table 5, the biggest estimated $\hat{\beta}_2$ coefficient belongs to Netherlands among 10 countries. If we exclude the TOT variable, perhaps the TOT effect merges with the BS effect which leads to over-estimation of $\hat{\beta}_1$ in the restricted model. Put another way, to explain the long-run REER movements in Netherlands, one should use the TOT variable as an explanatory variable which may help her to estimate a less-biased BS effect.

Japan is a country in which the BS hypothesis fails in both the restricted and unrestricted models due to negative signs of $\hat{\beta}_1$ coefficients. Moreover, in the restricted model $\hat{\beta}_1$ coefficient is found insignificant. The negative and significant (-1.83) $\hat{\beta}_1$ coefficient in the unrestricted model implies that 1% increase in the relative productivity leads to -1.83% decrease in the REER of Japan, which is against the prediction of the BS hypothesis. Similarly, $\hat{\beta}_2$ is found negative (-1.03) in the unrestricted model which is inconsistent with the prediction of the BS hypothesis.

USA is the other country in which the BS hypothesis fails in both the restricted and unrestricted models due to negative signs of $\hat{\beta}_1$ coefficients. That is to say, the BS effect works in an opposite way that the relative productivity growth leads depreciation in the "REER of USA", as in Japan.[16] Although the estimated BS effect of USA is negative, USA has a positive and significant TOT effect which is 0.81. In this respect, the unrestricted BS model performed partially well for USA since the TOT effect has a correct (positive) sign. Norway is the only country that the BS hypothesis holds in the unrestricted model and fails in the restricted one. In particular, the estimated $\hat{\beta}_1$ is positive (0.29) and significant in the unrestricted model that the BS hypothesis holds. Nonetheless, when we exclude the TOT variable, $\hat{\beta}_1$ turns out negative (-0.02) and insignificant which implies the rejection of the BS hypothesis for Norway in the restricted model. This result shows that TOT is a crucial variable in explaining the "REER of Norway".

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[16] Drine and Rault (2005) also rejected the BS hypothesis for USA due to the negative sign of the BS effect.

Table 6 summarizes the country-specific estimation results regarding the validity of the BS hypothesis. According to Table 6, the BS hypothesis is valid 8 out of 10 countries when the unrestricted model is used and valid 7 out of 10 when the restricted model is employed. And the TOT effect has been found as predicted (positive and significant) in 6 out of 10 countries. In the unrestricted model, the average BS effect of 10 OECD countries is 1.6 and the average TOT effect of 10 OECD countries is 0.34. In the restricted model, the average BS effect of 10 OECD countries is 1.1, which is consistent with theory and previous studies' results (see Alexius & Nilsson, 2000 and Egert, 2002).

Table 6. Summary of Country-Specific Estimation Results

	UNRESTRICTED MODEL (eq.13)	RESTRICTED MODEL (eq.12)
BS HOLDS	8 out of 10	7 out of 10
BS FAILS	2 out of 10	3 out of 10
AVERAGE BS EFFECT	1.6	1.1
AVERAGE TOT EFFECT	0.34	

3. Conclusion

The BS hypothesis, which explains the real exchange rate movements with productivity differences between countries, still keeps its importance in empirical economics. Since 1964, many published studies have tested the hypothesis by using different methods. The theoretical contributions (e.g. the inclusion of terms of trade), and improvements in econometric techniques (e.g. cointegration analysis) motivate scholars to test the validity of the BS hypothesis.

The findings of this study are mostly in favor of the BS hypothesis. In the study, the cointegration analysis confirms the existence of long-run relation among REER, PRO and TOT variables in all countries. In the unrestricted model, country-specific coefficient estimations indicate that the BS effect is positive and significant in 8 out of 10 countries. And the BS effect has been found positive and significant in 7 out of 10 countries in the restricted model. Generally speaking, TOT is a critical variable in the BS hypothesis that the TOT coefficient is estimated positive (as predicted) and significant in 6 out of 10 countries. In particular, it is found out that the TOT variable is relatively more important

for Netherlands and Norway. In Netherlands, the exclusion of the TOT variable from the BS model led over-estimation of the BS effect and in Norway it led to the rejection of the BS hypothesis.

Among 10 OECD countries, Japan and USA are two specific countries, in which the BS hypothesis fails in both restricted and unrestricted models probably due to country-specific reasons. In this respect, the inclusion of some relevant explanatory variables such as total consumption, government consumption, and openness would help us to get better results for Japan and USA regarding the BS effect. In addition, relaxing the assumption that we made about non-tradables sector would also affect the estimation results for these countries, especially for USA in where non-tradables (services) sector productivity growth is more evident.

Finally, today the BS hypothesis, which cannot be rejected widely in empirical studies (as in this study), still plays an important role in explaining why the PPP fails and the real exchange rates differ across countries. With the improvements in econometric methods and availability of new sectoral productivity data, the BS hypothesis seems to keep its importance also in the future.

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Pricing Financial Derivatives in Turkdex Using Artificial Neural Networks Tools and a Comparison with Conventional Theory

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Abstract
Derivative instruments have been gaining importance in finance area over the last 30 years as all developed economies have established regulated derivative exchanges. Although the need for derivative markets criticized by many researchers, developing countries offer their own derivative markets to enable to attract foreign investments. The well known arbitrage free pricing theory applied when pricing derivative securities is based some assumptions, which may not be verified in many of those newly flourishing and volatile markets. This leads researchers to use new techniques, such as multi layer feedforward neural networks, to forecast derivative contract prices on imperfect marketplace. This paper proposes a nonparametric approach to evaluate futures contracts traded in Turkish Derivative Exchange.

1. Introduction

While the recent financial crisis is still shaking the global finance centres, developing countries are also seriously affected from this crisis. Although economists are not agreed on the whys and the wherefores of that global fail, most of them blame derivative markets.

For certain, the derivative products as one of the main triggers of that deep recession must be examined more precisely, especially in developing economies like Turkey, since their presence reflects not only huge potentials but also huge risks for an imperfect market. As a newly initiated innovation in the Turkish financial markets Turkish Derivatives Exchange (TURKDEX) has been making good progress towards maturity while its effects on

financial markets have not been enough questioned yet. Without a doubt, one of the major steps to the way of investigating the affects of TURKDEX on the flourishing Turkish financial markets is measuring its conformity with the asset pricing and arbitrage theory which is yet developed on the perfect and efficient market concept.

In this paper, firstly an introduction to derivatives and different approaches to evaluate different types of futures contracts will be given. Second part is devoted to a short introduction to artificial NNs. Third part of this study will deal with an empirical study on valuation of Istanbul Stock Exchange (ISE)-30 Index and TRY/Euro futures contracts traded in TURKDEX covering a time period of approximately first two years beginning with the establishment of the exchange. While evaluating futures contracts, two different approaches will be employed, namely the conventional "cost of carry" approach (CC) and artificial neural network (NN) by using MATLAB's NNs toolbox. In the last part, prices derived by these two approaches and prices prevailing on TURKDEX will be compared and fitness as well as maturity of Turkish financial markets will be tested. Another major purpose of this paper is to provide to stakeholders of the derivative markets an advanced pricing tool, which enables users to estimate price of futures contracts on the exchange, even if the assumptions of an arbitrage-free market may be not entirely correct.

2. Pricing of Future Contracts

2.1. Cost of Carry

As a financial instrument whose price is derived based on so called underlying instrument, derivatives can actually be described as virtual assets. That underlying instrument can be a commodity such as gold, oil, wheat or currency exchange rates or stock exchange indices, which have mostly an economic character. However, in the last decade several different type of derivatives, such as "weather derivatives", designed, which depends on various indicators (Hull, 2006, my translation).

Forward and future contracts are two basic types of derivatives. They are classified as unconditional derivatives whereas the options are called as conditional derivates. A future

contract is an agreement two parties that commits one party to sell (and the other party to buy) the underlying asset at a given price and on a specified future date. While a future contract is mainly traded in centralized exchanges, the forward contract is traded at unregulated so called "over the counter" markets (Siegel, Siegel, 1990).

While evaluating the derivatives, different models must be applied depending on the type of it and on its underlying asset. However, the basic pricing approach remaining unchanged is the "cost of carry" approach (CC). CC is mainly derived from an arbitrage-free market theory, while an arbitrage-free market is characterized as follows (Rudolph, Schäfer, 2005, my translation):

- There is no taxes, transaction and information cost
- Short selling is allowed
- All market players have the same opportunities in the market
- A derivative can be traded in fractions

Based on the aforementioned assumptions CC secures a simple evaluation idea, which equates price of a futures contract to cost of holding a spot market position on the underlying asset, as in (1).

$$F_{0,T} = S_0 e^{rT} \qquad (1)$$

where

- S_0 Spot price at time 0
- $F_{0,T}$ Futures/Forward price at time 0 with a settlement at time T
- e^{rT} Annual interest factor with interest rate of r for a time period of $(0-T)$

The arbitrage-free market, which is the underlying assumption in equation (1), rests upon a smoothly running market mechanism and foresees that each arbitrage opportunity will be detected and utilized. Two possible strategies, namely cash and carry and reverse cash and carry strategies, to take advantage of this arbitrage profits explains this market mechanism, as summarized in Table 1.

Table 1: Cash and carry and reverse cash and carry arbitrage strategies (Luenberger (1998)

Cash and Carry			Reverse Cash and Carry		
$F_{0,T} > S_0/d(0,T)$			$F_{0,T} < S_0/d(0,T)$		
In t=0	**t=0**	**t=T**	**In t=0**	**t=0**	**T=T**
Borrow S €	S_0	$-S_0/d(0,T)$	Short selling underlying asset	S_0	0
Buying underlying asset	$-S_0$	0	Lend S €	$-S_0$	$S_0/d(0,T)$
Short 1 Forward	0	$F_{0,T}$	Long 1 Forward	0	$-F_{0,T}$
Ergebnis	0	$F_{0,T} - S_0/d(0,T)$			$S_0/d(0,T) - F_{0,T}$

2.2. Neural Networks and their Application in Finance

A neural network architecture which is capable of learning from a set of examples and recognizing the patterns with the property that the knowledge will be generalized successfully to other patterns from the same domain has been widely recognized as an important issue in the literature (Arifovic and Genbcay, 2001).

Among several NNs models, a multi layer feedforward neural network (MLF) model with supervised learning strategy will be employed in this study. Despite the fact that the training phase takes a long time in this type of NNs they have advantage of being robust and capable of forecasting more precisely (Morelli *et al.*, 2004). A sample multi layer feedforward NN structure is depicted in Figure 1.
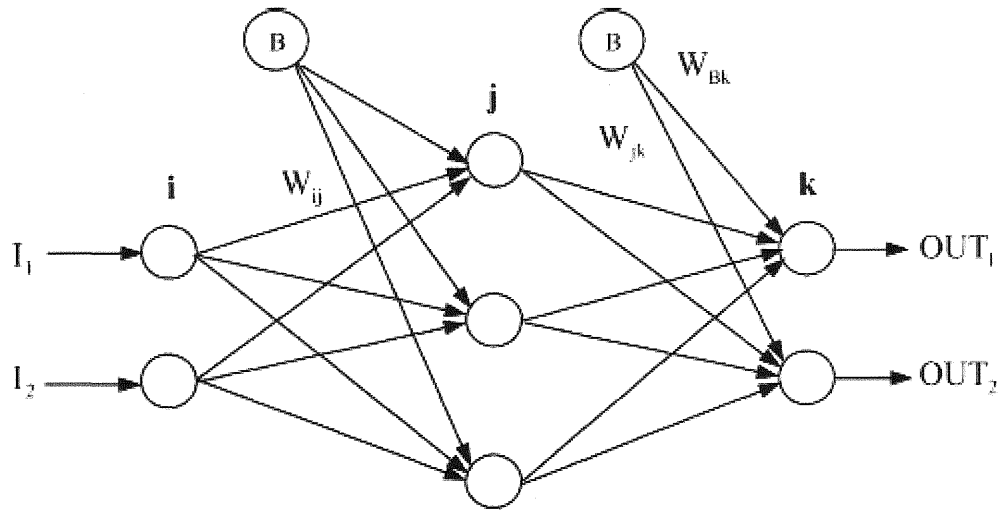
Figure 1: A sample multi layer feedforward NN structure (Köker *et al.*, 2004)

According to this structure (MLF) NNs consist of three main layers, namely input, hidden and output layers. The inputs I_i and outputs Out_k in supervised learning will be given by the supervisor of the network, whereas the network tries to establish relations between input and output layers by changing synaptic weights W_{ij} of each neuron j in the hidden layer and weights W_{Bj} and W_{Bk} of the bias neurons (perceptrons) B. The weights W_{ij} store the knowledge of nonlinear relations between input and output dataset as a black box model. Although processing time restricts the number of neurons in the hidden layer, basically there is no bounding constraint to determine the number of neurons in the hidden layer. Thus, this number can be determined experimentally. The bias weights W_{Bk} are added to force the learning process and prevent stopping in a local minima (Köker *et al.*, 2004).

While constructing NN, the available data is randomly split in two groups as training and test data, as the test data is used to measure the estimation power of the network trained with training data. Another alternative used in MATLAB tool box is to split the data in three groups, namely training, validation, and test. The NN toolbox of MATLAB investigates each iteration and applies the network weights on validation dataset and interrupt training phase if any overfitting phenomena is suspected. Thus, the main purpose of using validation data is to avoid "overfitting phenomena", which is a case that the

network fits the weights to the training data and works very well on training data, however if a new data set is presented to the network large errors occur (Morelli *et al.*,2004).

The network's learning process can be described in two separate steps, namely forward pass and back propagation of error. One complete cycle of forward pass and back propagation steps is called one epoch whereas number of epochs may differ for various types of problems. By repeating epochs the NN tries to reduce the error to an acceptable level. In the first step the inputs are multiplied with the initial weights and initial biases are added to these values as it is expressed in (2). NET values are then applied to an "activation function (AF)", which should be selected according to available dataset and problem type, whereas in this study a log-sigmoid activation function is used. The resulting Out_j values will be the input values for the output layer, while these outputs values Out_k of the output layer will be calculated in the same manner, as formulated in (3), (4) and (5) (Köker *et al.*, 2004).

$$NET_j = \sum_{i=1} I_i W_{ij} + W_{Bj}^{NEW} \tag{2}$$

$$Out_j = AF_1(NET_j) \tag{3}$$

$$NET_k = \sum_{i=1} I_i W_{ik} + W_{Bk}^{NEW} \tag{4}$$

$$Out_k = AF_2(NET_k) \tag{5}$$

In the back propagation step, the Outk values will be matched with the output dataset, while the difference between target values and NNs output values Outk is defined as system error. The error values are used to recalculate the weights by backward induction. In the error back propagation phase various different algorithm can be modeled and used, including Levenberg-Marquardt (LM), Gradient Descent (GD), Conjugate Gradient (CG), Quasi-Newton (QN), One Step Secant (OSS) back propagation. Again the main determinant of which back propagation algorithm is employed is the type of the problem and experimental try-and-fail strategy, yet the Levenberg-Marquardt has been accepted as one of most efficient algorithms (Köker *et al.*, 2005). This fact is also proved by experiments conducted for this study.

As the final word on NNs, the whole structure of the network, including selection of training algorithm, number of neurons, size and level of representativeness of the dataset etc., affect the performance of the network strongly (Montagna *et al*, 2003).

2.3. Neural Networks Application in Finance

Over the last 30 years there have been great efforts to develop models, which are capable of simulating nonlinear relations among dataset in finance non-parametrically (Hutchinson, 1994). Artificial neural networks are one of these techniques, which is more powerful and advantageous in many aspects in comparison to parametric models. Hutchinson, *et al*. (1994) lists three main advantageous points of NNs applications in finance.

- They do not rely on parametric assumptions, which restrict the model. Hence, NNs are more robust to errors of the parametric specifications.
- NNs are adaptive and respond to structural changes in data generating process
- They are flexible enough to deal with wide range derivative securities, yet they are relatively simple to implement.

On the other hand Hutchinson, *et al*. (1994) states that using nonparametric pricing method is highly data-intensive, requiring large quantities of historical prices to obtain a sufficiently well-trained network.

As it is stated in Arifovic and Gencbay (2001), NNs provide a rich, powerful and robust nonparametric modeling framework with proven and potential applications across sciences. Among many application areas given in Arifovic and Gencbay (2001) we can mention robotics, linguistics, finance, controlling systems and many others. Applications in Business area between 1988-1995 are summarized by Wong, *et al*. (1996). They reported in total 213 scientific papers dealing with NNs applications in business domain. As this study proves, NNs have been utilized by researchers in business extensively and become a standardized tool to model nonlinearity.

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Two of 213 papers, namely Trippi and DeSieno (1992) and Grudnitski and Osburn (1993), are of special interest, which aim to analyze the financial futures markets with NNs. Trippi and DeSieno (1992) designed a NNs tool, which is trying to capture the market behavior and generating daily trading decisions (buying or selling) on the S&P 500 Index Futures based on the daily open, high, low and close prices of the S&P 500 over a four year period. In Grudnitski and Osburn's (1993) work, again the S&P 500 index and gold futures are investigated and feasibility of employing NNs to forecast price changes based on the past price changes, and historical open interest patterns that are held to present the beliefs of a majority of the traders in these markets. As it is stated above both studies are dealing with S&P 500, which is a highly sophisticated market and closely resembling a perfect market. This shows the need of further research in application possibilities of NNs at developing derivative markets.

3. Empirical Study on Futures in TURKDEX

3.1. Dataset and Methodology

In this part an empirical analysis is conducted on the ISE-30 Index and TRY/Euro futures contracts traded in TURKDEX in years 2005 and 2006. The reason why especially this time period is selected can be reasoned that this period covers developing phase, first two years, of the Turkish derivative market. The number of contracts covered in this period and number of dataset is given in Table 2.

Table 2: Dataset used in empirical study

	Number of contracts	Number of dataset
ISE-30 Index futures	12	1314
TRY/$ Futures	12	1392

At the first step, the daily theoretical close prices calculated with (6) and (8) which are nothing but a reformulation of the equation (1) for index and currency futures contract based on the arbitrage free market assumptions.

$$F_{t,T} = S_t e^{r(T-t)} - \sum_{i=1}^{n} D_i . e^{r(T-t)} \tag{6}$$

where

- S_t Index value at time t
- D_i i th dividend payment of n payments in total

The formula for index futures in (6) can be simplified by an assumption that the dividends are paid during the corresponding year with a continuous rate of q (Hull, 2006, my translation) assuming that a stock basket representing perfectly the ISE-30 Index can be rebuilt and paying dividends. So, the equation (6) becomes

$$F_{t,T} = S_t e^{(r-q)(T-t)} \tag{7}$$

For TRY/Euro futures, (8) implies that the value of the futures contract at time t is a function of spot price at time t and which can be invested with an interest rate of $r - r_f$, which the difference between the interest rates of both currencies, for a time period of (T-t)

$$F_{t,T} = S_t e^{(r-r_f)(T-t)} \tag{8}$$

where

- S_t Index value at time t
- r_f Interest rate of the corresponding foreign country

In the second part same price estimation procedure is conducted with two NNs, (one for ISE-30 Index futures, one for TRY/Euro futures) where the daily futures prices P_t realized on the market are the target values. Since the performance of a NN may differ according to the initial weights and biases the network is designed to be trained 30 times within each cycle randomized dataset. Then, the performance of the network is measured on basis of the average values of 30 cycles.

Table 3: NN parameters

Training algorithm	LM
Max number of epochs	300
Activation function of hidden layer	Log-Sigmoid
Activation function of output layer	Linear
Mse goal	1e-5
Number of neurons in the hidden layer	20
% of training data	50%
% of validation data	10%
% of test data	40%
Learning parameter	0.05

Four input vectors are fed to the networks. For ISE-30 Index, the daily quotation of the index S_t, risk free interest rate r derived from Turkish T-bills on a monthly basis, time to maturity T-t, and dividend rate q. The dividend rate q is accepted as 1.8% for 2005 and 2% for 2006 based on estimation of the market makers in TURKDEX. For TRY/Euro futures the needed inputs are the daily TRY/Euro exchange rates $S_{t,ask}$ and $S_{t,bid}$,[1] risk free interest rate r derived from Turkish T-bills on a monthly basis, risk free interest rate r_f derived from EURIBOR rates on a monthly basis and time to maturity T-t. The network will map the inputs onto outputs.

3.2. Results

In the first step, the prices F_t calculated with (7) are paired with the realized prices P_t and the difference F_t-P_t is tested with a paired t-test for significant differences whit the assumption that the both dataset follow a normal distribution. In the second step a NN with aforementioned specifications is built, trained and tested with randomly selected data from the input dataset.

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[1] Since in a cash and carry (reverse cash and carry) arbitrage strategy the investor must acquire (sell or sell in short) the currency on the market, the ask- (bid-) quotation is relevant.

Table 4: Test statistics of ISE-30 futures

ISE-30 Futures	P_t	F_t	$F_t - P_t$	$F_{t,NN}$	$F_{t,NN} - P_t$
Stan dev	8.221	8.14	1.383	8.2132	0.5732
Number data points (n)	1314	1314	1314	1314	1314
Mean	43.500	45.294	1.795	1.7947	-0.0205
Min	29.825	30.036	-1.574	28.835	-2.398
Max	60.350	63.890	8.282	61.197	3.16
MSE			5.1325		0.3460
R^2			98.76%		99.74%
t-Statistics			5,464		-0.0051
Null hypothesis			Rejected		Accepted

The test statistics related with ISE-30 Index futures is given in Table 4. The result of the t-test imposes that the null hypothesis stating that F_t and P_t have the same mean and variance must be rejected for a significance level of 5%, whereas the same hypothesis must be accepted for with NN forecasted prices. The correlation coefficient and MSE values also confirm that the NN method is a better estimator of market prices in TURKDEX.
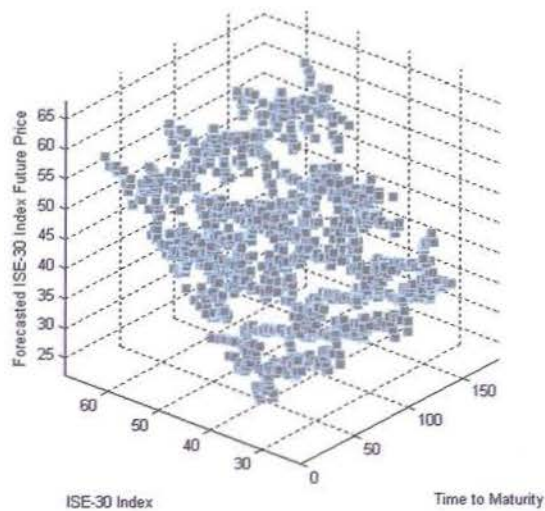

Figure 2: ISE-30 Index futures price forecasted with NN as a function of S and T-t
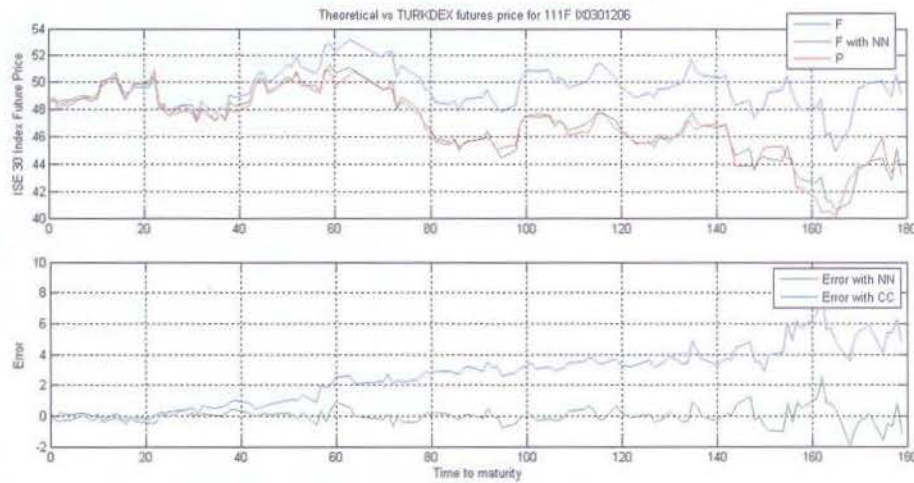
Figure 3: Comparison of NN forecasted ISE-30 futures prices with theoretical prices for 111F_IX0301206.

Two major indicators of futures price are spot price S_t and time to maturity T-t. The relation between these two variables and ISE-30 futures price forecasted with NN is depicted in Figure 2. In Figure 3 the with CC calculated prices F_t and with NN estimated prices $F_{t,NN}$ are compared with market prices P_t for a ISE-30 futures contract with an ISIN code of 111F_IX0301206 (as an out of sample dataset), as well as the estimation error of both methods is given. As it is depicted clearly, NN approach can generate better forecast of the prices on the market.

The same pricing process described above is conducted for TRY/Euro futures except two different futures prices, namely $F_{t,ask}$ and $F_{t,bid}$ are calculated with equation (8), depending on which arbitrage strategy out of the two is employed. Again a t-test for significant differences between values estimated with CC and NN and the prices prevailing on the market is applied. The statistics of the study related with TRY/Euro futures is given below in

Table 8. According to this for both arbitrage strategies NN technique produces slightly better results than the CC theory, when the correlation coefficients and MSE numbers and other indicators are compared.

Table 8: Test statistics of TRY/Euro futures

| TRY/Euro futures	P_t	cash and carry				reverse cash and carry			
		$F_{t,ask}$	$F_{t,ask}-P_t$	$F_{t,ask,NN}$	$F_{t,ask}-P_t$	$F_{t,bid}$	$P_t-F_{t,bid}$	$F_{t,bid,NN}$	$P_t-F_{t,bid,NN}$
Stan dev	0.154	0.148	0.020	0.1542	0.0177	0.148	0.020	0.1541	0.0173
Number data points (n)	1393	1393	1393	1393	1393	1393	1393	1393	1393
Mean	1.789	1.788	0.0015	1.7897	0.42	1,779	-0.0101	1.7896	3.4306e-004
Min	1.559	1.562	-0.062	1.5456	-0.1191	1.554	-0.148	1.5709	-0.1055
Max	2.357	2.248	0.138	2.2613	0.0893	2.237	0.052	2.3176	0.0891
MSE			4.0184e-004		3.1474e-004		5.0847e-004		3.1074e-004
R^2			99.20%		99.34%		99.20%		99.35%
t-Statistics			2.8462		-0.1165		-18.7081		-0.4219
Null hypothesis			rejected		accepted		Rejected		accepted
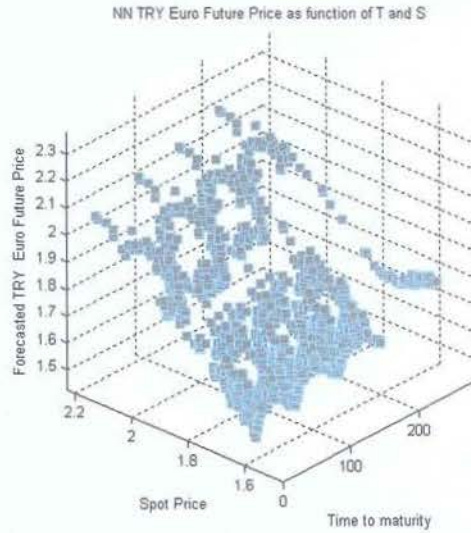
Figure 4: TRY Euro futures price forecasted with NN as a function of S and T-t

Figure 4 depicts again the relation between futures prices and two basic parameters namely, exchange rate on the spot market and time to maturity. The Figure 5 Figure 6 proves that NN forecasts are more accurate than the arbitrage free market theory prices, if the market prices of the future contract with ISIN code of 311F_FXEUR1206 in TURKDEX are taken as benchmark.
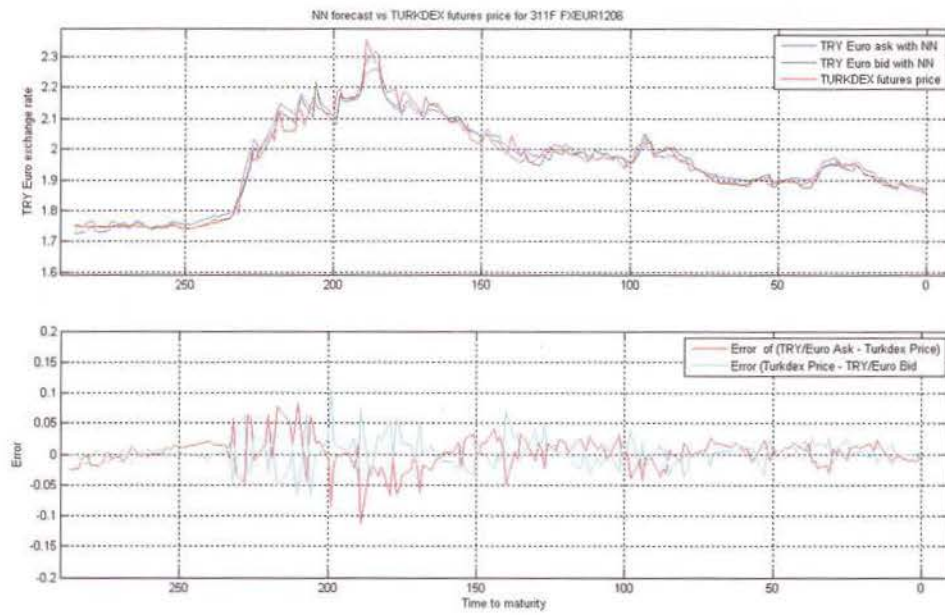
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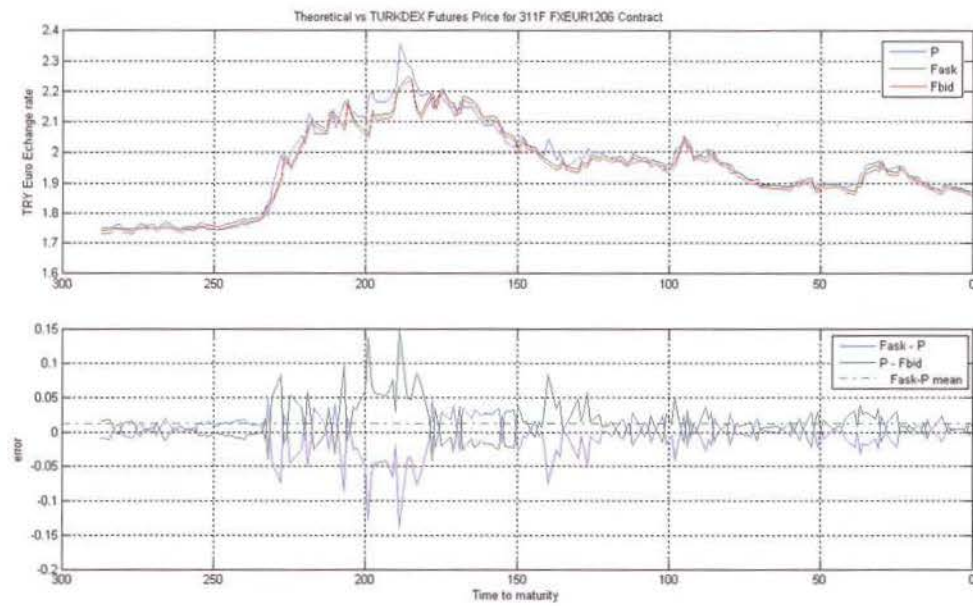Figure 5: Comparison of NN forecasted TRY Euro futures prices with market prices in TURKDEX for 311F_FXEUR1206

Figure 6: Comparison of with arbitrage free market theory calculated TRY Euro futures prices with market prices in for TURKDEX 311F_FXEUR1206

3.3. Summary

Derivative instruments have been gaining importance in finance area over the last 30 years as all developed economies have established regulated derivative exchanges. Although the need for derivative markets criticized by many researchers, developing countries offer their own derivative markets to attract foreign investments. The well known arbitrage free pricing theory applied when pricing derivative securities is based some assumptions, which may not be verified in many of those newly flourishing and volatile markets. This leads researchers to use new techniques to forecast derivative contract prices on imperfect marketplace. The multi layer feedforward NNs can be a promising alternative because of its power to model nonlinearity.

As the results of the study shows multi layer feedforward NNs may offer the investors a better pricing tool than CC approach as it is demonstrated on two different type of futures contract in TURKDEX, namely ISE-30 Index futures and TRY/Euro currency futures. However, it is worth to mention that this study does not try to falsify the arbitrage free pricing theory and CC approach; rather it proposes a way how to deal with market imperfection while pricing financial futures.

Future work in this area could focus on different types of NNs and effect of various training algorithms. Another promising topic would be application of NNs in commodity futures with low trading volumes.

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The Benefit Incidence Analysis: A Case Study from Turkey

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Abstract

After 1980s, Turkey who tries to be a part of global economy, started to conduct economic policies that are more liberal. International institutions such as IMF or World Bank have guided these policies. These institutions' "one size fits all" policies have included provisions for high public sector deficits and for sustainable foreign debt. After 2001 economic crisis, with the collaboration of different public institutions, a national rural development initiative was launched and DIS is the result of this policy implementation. However, recent studies in literature on DIS generally analysis this subject in the point of view of agricultural production. Evaluation of agricultural policy changes in Turkey is quite inadequate. Therefore, this study is going to be one of the first studies that employ benefit-incidence analysis to assess the impacts of DIS, through the primary data that is collected from four villages of Aydin province.

1. Introduction

After 1980s, Turkey who tries to be a part of global economy, started to conduct economic policies that are more liberal. International institutions such as IMF or World Bank have guided these policies. These institutions' "one size fits all" policies have included provisions for high public sector deficits and for sustainable foreign debt. Consequently debates on agricultural subsidies started: they would increase government expenditures. It was decided that Turkey should have followed international standards for agricultural policies by considering World Trade Organisation (WTO) and the size of agricultural subsidies should have gradually been decreased. In this period, Turkey sent letters of intent that remark agricultural policies, to IMF and tried to achieve agricultural adjustment. Today, direct income support as being a public policy is the result of these practices. Direct

income support was firstly mentioned in the LoI of 1999 to International Monetary Fund (IMF). The letter would say that:

> "Present agricultural support policies are not the most cost-effective way of providing support to poor farmers. They distort resource allocation by distorting market price signals, tend to benefit rich farmers more than poor ones, and lack coherence--given the fragmentation of the policy making process in this field among several ministries and public institutions. Above all, they have become quite onerous to the taxpayers with an average cost of about 3 percent of GNP in recent years. The medium-term objective of our reform programs to phase out existing support policies and replace them with a direct income support system targeted to poor farmers. This will first be done by setting up a pilot program for the crop year 2000, and, based on the results of that pilot, we will extend the direct support system nationwide in 2001 and we expect to complete it by end-2002. This system would be based on a farmers' registration system that would be completed by March 2001." (Letter of Intent to IMF, 29th Sept. 1999)

Indeed, there were problems with current support system. As the quote says, that system was far from reaching to the poor farmers. However, apart from economic reasons, inadequate and inaccurate registration of farmers would lay behind the agricultural policy failures. Under these circumstances, any subsidy policy could create inefficiency. Accordingly direct income support policy paralleled with Agricultural Reform Implementation Project (ARIP)[1] through the support of World Bank to Turkish Treasury. One of the components of the ARIP is establishment of the National Registry of Farmers and Land Registration and of Cadastre Office that would be under the administration of Ministry of Agriculture and Rural Affairs (MARA). Although it was an appropriate step in agricultural policies, it was again far from stating the actual condition of the farmers. This issue is going to be discussed in next parts to indicate why direct income support could not achieve expected results. As to the burden of agricultural policies to state's budget, it would be estimated both by State Planning Organisation and by IMF around 1- 2 % of gross national product (GNP) yearly (Ozkaya et al: 2001). Once the importance of agriculture in Turkish economy is considered, this percentage of subsidy (3% of GNP in LoI 1999) was overemphasized. Furthermore government has already agreed to not to reduce the share of agricultural supports under 1 % of budget.

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[1] For further information please see: (Last access: 20th of June 2009) http://web.worldbank.org/external/projects/main?menuPK=228424&theSitePK=40941&pagePK=64283627&piPK=73230&Projectid=P070286

Nevertheless, agricultural production's own characteristics give an important place to agricultural policies. Firstly, as a matter of subsistence, countries would like to achieve optimal agricultural production. In addition achieving of a less dependent and a more self-sufficient agricultural system is strategically desirable for countries. Apart from these very common concerns, Turkey's potential in agriculture so-called comparative advantage in economics, makes her more sensible about agricultural policies. Oncoming parts of this study will try to tell more about both agricultural production in Turkey and implementation of agricultural policies.

Another point of this study is human side of these policies; perspective of this study is not limited with economic aspects of the policies but what they, particularly the direct income support, mean to the people who live in this economy. A part of the literature on the agricultural policies is strongly dominated by an approach that regards the agricultural activities like a firm type cost-benefit system; focus is the production rather than the producers. The economic analyses that miss out social aspects of agriculture are far from reflecting what actually happens. Now this posture could not explain why some of agricultural producers refuse to benefit from direct income support even they fulfill all legal requirements.

In this context, this study will seek what direct income support has brought to agricultural producers through the benefit-incidence analysis. Accordingly, this part is devoted to give information about agriculture production and agricultural policies in Turkey and a review of past studies on this subject. Thus, this part reveals why this study is especially interested in agricultural policies. Second part is going to focus on empirical analysis of data that is collected primarily from Aegean region of Turkey and it is going to be the core of this study. In the last part, results of the analysis are going to be discussed.

2. An Overview of Turkish Agriculture

Agricultural production still has an important role in Turkish economy even its relative share in total output diminishes (Table-1). These agricultural products are used as consumption goods or as inputs in industrial production. Despite the gradual decrease of

the share of agricultural production in gross domestic product (GDP), the considerable share of employed population is still working in agricultural activities. Today statistics say that around 27% of employed population is involved in agricultural activities (Turkstat: 2008) and this population mainly lives in rural of Turkey. Mostly, insufficiency of off-farm activities lies behind this sort of employment. Then, higher rate of poverty is encountered in rural areas compared to urban (SPO: 2009).

Table-1: Employment and GDP by Sectors (percentage)

Sector	2003		2004		2005		2006		2007	
	Emp	GDP	Emp	GDP	Emp	GDP	Emp	GDP	Emp	GDP
Agriculture	33,9	9,9	34	9,5	29,5	9,4	27,3	8,3	26,4	7,5
Industry	18,2	20,9	18,3	20,3	19,4	20,3	19,7	20,1	19,8	19,8
Services	47,9	69,2	47,7	70,2	51,1	70,3	53	71,6	53,8	72,7
Total	100	100	100	100	100	100	100	100	100	100

Source: SPO, 2009 Annual Program, pp.163.

The decrease in relative share of agricultural production is generally related with the rise of relative shares of industrial and service productions in GDP. Indeed, Turkey has tried to achieve industrialisation since the foundation of republic: mainstream approach was that development could *only* be achieved with strong industrialisation. Giving priority to improvement of other sectors *in the sake of development*, then a limited government support to agriculture, brought about challenges both socially and economically.

As it is shown on the Table – 1, while the expansion of services is remarkable, it is hard to say the same to industry; changes are more stable. Services account for over half of the GDPs of all developed economies and constitute the largest sector in most under-developed economies. Main reasons behind this growth of the services include rapid urbanisation. Undoubtedly, the agricultural policies that were implemented by government contributed to Turkey's rapid urbanisation (SPO: 2009).

The agricultural and industrial productions constitute the real production of an economy. The mutual dependency of these two sectors should also be mentioned; excluding concerns on subsistence, agricultural activities provide inputs to industrial production. Hence, certain level of production and productivity in agriculture should be achieved. In

developed countries, share of these sectors in GDP is also lower than services, but their productivity level is high. Today Turkish agriculture still undergoes low levels of productivity, a steady level of agricultural production, notwithstanding, has achieved (SPO: 2007). Obstacles in front of the production and productivity could again be associated with the agricultural policies; owing to the recent years' vicious cycle of high inflation – high interest rates, required amount of public investments could not be achieved in agriculture, as well as in the other parts of the economy. The share of government's fixed investments in agriculture was only around 4% and this ratio of public investment was lower than the other sectors' (SPO: 2000). Once the low level of capital accumulation in agriculture is taken into account, it could be said that agricultural sector did not get due support from neither government nor the private sector. Yet, fixed investments would be required to complete agricultural modernisation and infrastructure that could increase production and productivity[2].

Figure 1. Rate of Fixed Investment in Agriculture
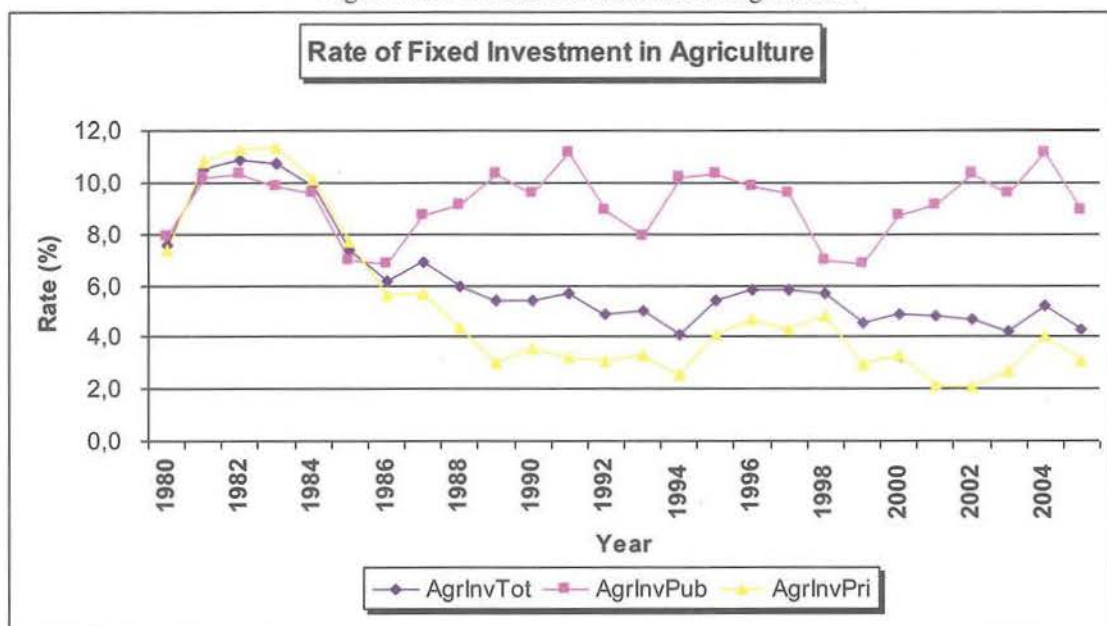
*Data from State Planning Organisation: Savings and Investments

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[2] Due to characteristics of the agricultural production, rise of productivity in agriculture is subject to debates. Regarding elasticities of supply and demand, increasing productivity could result in a decrease of prices of agricultural goods. It is already known that gains from primary goods that include agricultural products are lower. Then a price change could result in an income transfer from farmers who form generally the poorer part of the society in underdeveloped countries, to the other sectors. Hence, rise of agricultural productivity or of optimal level of agricultural production needs comprehensive social and economic analysis. Furthermore, in the existence of any distortion, political willing should be ready to compensate and regulate distortionary impacts on welfare.

To understand recent years' rate of investments (fixed) in agriculture, it could be referred to the Graph-1. In this graph, the blue curve represents the rate of total investment in agriculture, as the pink curve represents the rate of public investment in agriculture and the yellow curve, the rate of private investments. Time range starts with 1980s –turning point of liberalisation in Turkey- and ends with 2005 due to data availability. At a glance it could be seen that rate of private investments has had a downward movement. At the beginning of 1980s, the share of agricultural investments from savings was around 11%. However, in mid-1980s, eruption of government deficit and decrease of abroad net factor income and of export income brought about devaluation of Turkish Lira (Boratav: 2003). The private investment in agriculture was also affected by the devaluation that reduced savings rapidly: after 1986, the rate of private investment in agriculture could not pass the benchmark of 6%. Therefore, rate of total investment, which is weighted mean of rate of public and of private sectors' investments, followed a similar path with the rate of private investment in agriculture. Yet volatility of the rate of public investment in agriculture is striking and is providing indication how agricultural policies have been subject to political rent seeking. For instance, one of the highest rates of the public investment is in the year of 1991 that is also the year of general election. The period of 1994-1998 is also known as the years of political instability. The governments that were ever ready for the elections, paid attention to keep the farmers who constitute the majority of voters satisfied about government policies through the public spending. Once more, the year of 2002, which represent another increase of rate of public investment in agriculture, was the year of general elections and 2004 was the year of local elections.

Impacts of public policies on agriculture could also be evaluated through foreign trade. Turkey is traditionally one of the leading countries in agriculture and is still a net exporter. However, in recent years Turkey has started to import considerable amount of agricultural product (MARA: 2006). Turkey's agricultural exports mainly consist of vegetables and fruits rather than agricultural goods that are used as industrial input. Cultivation of industrial crops (cotton, sugar beet and tobacco) has dramatically declined. This situation, strikingly, emerged with liberalisation in agricultural policies (Odekon: 2005). As a

consequence, today, cotton, oil seed and cereal have a share of more than 50% in total agricultural import (SPO: 2007).

Figure 2. Agriculture in Foreign Trade
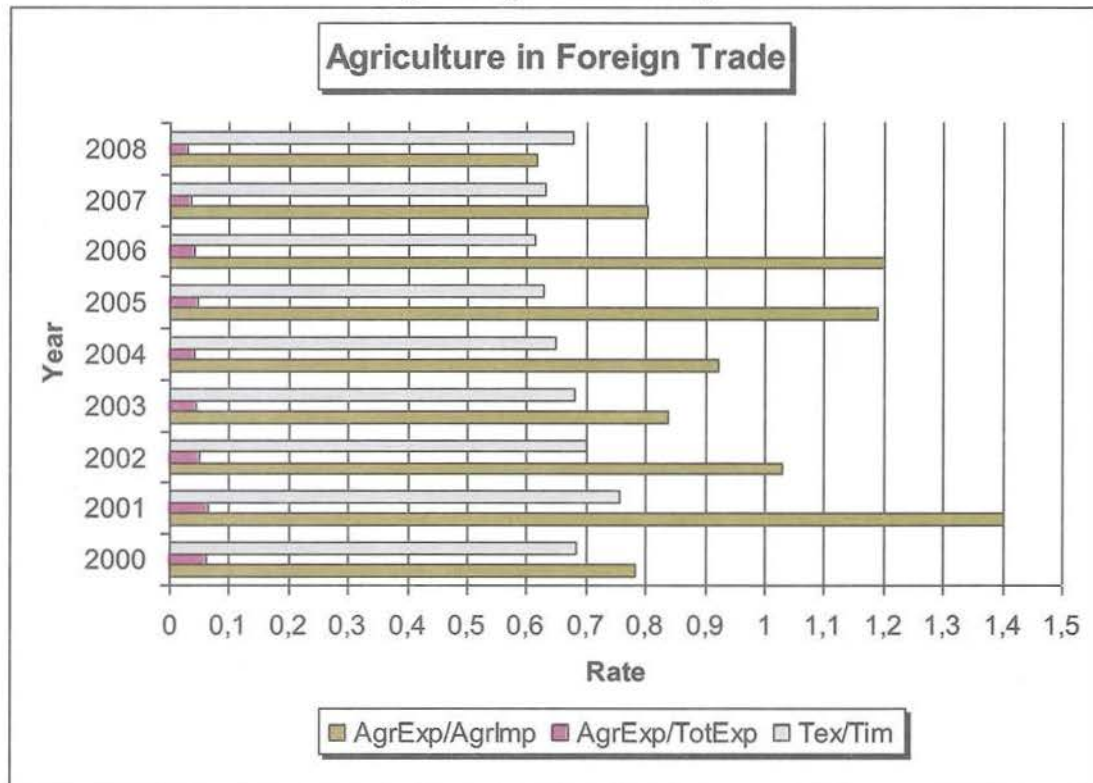
*Data from Undersecretariat of Treasury: Foreign Trade Indicators

Graph –2 provides more information about agriculture and foreign trade. Firstly, it is important to see that Turkey, as being a typical *developing* country, has trade deficit without any exception, in time range of 2000 - 08, this is represented by the ratio of import coverage of export (Tex/Tim). This ratio says that Turkey's exports could only cover around 60-70 % of her imports, between 2000 and 2008. On the other hand, agricultural exports covered at least around 80% of agricultural imports between 2007 and 2000. Particularly in the years of 2001, 2002, 2005 and 2006, agriculture contributed to narrow Turkey's total trade deficit by overbidding: (AgrExp / AgrImp) ratio that is illustrated by green columns in the graph, is over 100 % in those years. Because of being the year of economic crisis, in 2001, both the (agricultural) ratio of import coverage of export (AgrExp / AgrImp) and the (general) ratio of import coverage of export (Tex/Tim) rose up (actually they were the highest ratios amongst others); the import level decreased due to

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income loss and this lifted those ratios up. Impacts of economic crash down would be felt in 2002 and again agricultural ratio of import coverage of export would be over 100 %. Concerning the years of 2005 and 2006, with the assistance of recovery, of foreign exchange rate and of high levels of production[3], agricultural export rose. When calendar shows the year of 2007, agricultural sector started to suffer from drought such that Turkey's some regions were stated as the regions of natural disaster and additional support policies was provided to those regions by MARA[4]. The drought's impact could be conjectured through the graph; in 2007, the (agricultural) ratio of import coverage of export came about 80%. Following, in 2008, because of high input (oil and fertilizer) prices and inadequacy of public policies to protect agricultural producers from these price fluctuations and worsening economic conditions resulted in a lower growth rate of agriculture then a lower share in export. Nonetheless, the share of agriculture in total export that is illustrated by (AgrExp/TotExp) ratio, it tends to decrease gradually and is always below 10% of total export. Needless to say, Turkey's liberal transformation depresses the share of agriculture in total export and instead increases the share of services firstly and then the share of industry (SPO: 2007).

3. An Overview of Agricultural Support Policies

Agricultural support policies should be featured as a component of rural development policies. Being the public policies have economic aspects, they are useful to understand how development perspective is figured. Hence, recent years' transformation of agricultural support policies points out that Turkey has experienced a perspective change in development. The economic crises that were encountered particularly the one in 2001 have had an important role in this transformation; a market-oriented rural development policy was preferred instead of recent years' state-led rural development policies (SPO: 2007). In other words, agricultural producers, who constitute majority of rural inhabitants, would have learnt how to stand on their own feet in market conditions. Simultaneously, with the

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[3] Indeed, agriculture sector's growth rate was more than 4% in average in this two-year period and GDP, around 8% (Treasury, Economic Indicators: 2009).

[4] In 2007, while the GDP growth rate was around 5%, agriculture sector's growth rate was around -7%.

collaboration of different public institutions[5], a national rural development initiative was launched and as it has been mentioned in introduction, DIS is the result this policy implementation. However, on the way of a market-oriented development, government needs more, so the privatisation of State Economic Enterprises (SEEs)[6] was started.

Table -2: Some Ratios Based on OECD Agricultural Support Indicators (percent)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total Support Estimate/GDP	5.70	7.00	6.45	5.27	2.71	4.27	5.00	3.92	4.12	2.93
Budget Transfers/Total Support GDP	43.98	39.36	46.72	46.15	96.44	48.37	23.32	23.72	29.77	47.24
Budget Transfers/GDP	2.51	2.76	3.02	2.43	2.62	2.06	1.17	0.93	1.23	1.38

Source: SPO: Main Agricultural Indicators, May 2008, pp.35

As it is illustrated in Table-2 after 2001 (is the year that DIS was started to be implemented) the ratios of budget transfers to total support GDP and budget transfers to GDP, considerably declined. As to the total support estimate to GDP, despite of the fluctuations, it tended to decrease in compare to 1990s.

On the other hand, many countries started to experience the same policy implementation on agriculture; the decline of agricultural support is not peculiar to Turkey. Once the Table -3 is seen, it could be noticed that, OECD countries have tried to decrease the supports to agriculture.

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[5] For further information on these institutions, please see : (Last Access: 23rd of July 2009) http://ekutup.dpt.gov.tr/bolgesel/strateji/UKKS-i.pdf

[6] Those were the institutions established after 1960s in Turkey to supply basic needs to public without rent seeking, but by having monopoly power in the markets. For the agriculture, tobacco and sugar beet production were dependent to SEEs. However, after 2001, to finance the state budget and to decrease the burden on it, those institutions were started to be privatised (SPO: 2007).

Table- 3: OECD Countries and Supports to Agriculture

	1986-88	2005-07
New Zealand	10,3	1,0
Australia	7,3	5,2
United States	22,1	12,2
Mexico	28,2	13,8
Canada	35,8	21,0
Turkey	16,2	22,4
OECD total	37,1	25,7
EU total	40,0	29,5
Japan	63,7	50,4
Switzerland	77,2	59,9
Korea	69,8	61,8
Norway	70,3	62,0
Iceland	76,3	66,0

Source: OECD Factbook 2009: Economic, Environmental and Social Statistics - ISBN 92-64-05604-1 - ©
OECD 2009 Public finance - Support and aid - Agricultural support estimates

4. An Overview of Recent Studies

Recent studies in literature on DIS generally analysis this subject in the point of view of agricultural production. Evaluation of agricultural policy changes in Turkey is quite inadequate. Therefore, this study is going to be one of the first studies that employ benefit-incidence analysis to assess the impacts of DIS.

Nonetheless Eraktan *et al.* (2004) prepared one of the most comprehensive studies on DIS. The study is analysing the DIS in a very different aspects. The study includes both theoretical backgrounds of DIS and presents the results of implementation empirically. Then, Demirci (2000), before the implementation of DIS, prepared a literature survey. In this study, Demirci (2000) explained the other countries experiences that implemented DIS before Turkey. In 2001, Bayaner *et al.* published a report on pilot program implementation of DIS. In this report, Bayaner *et al.* (2001) mainly used the perspective of agricultural economics and analysed results of DIS through agricultural production. A study of Yilmaz *et al.* (2008) focused on Isparta province and analysed the demographical, agricultural and social characteristics of the agricultural producers who get DIS rather than assessing the DIS through the benefit incidence.

4.1. Introduction

In the first part, Turkish agriculture's important issues have been discussed with reference to the macroeconomic indicators. Then agricultural support policies have been revised. Although these discussions are necessary to see the whole picture, there are still some questions: Would really DIS be a satisfactory policy for the agricultural producers? Once policy-maker institutions announced implementation of this support policy, their claim was that it would be advantageous for poor farmers who could formerly not reach supports efficiently. So could the poor farmers really reach to the DIS and benefit it appropriately? These questions could be answered by different ways; this study is going to use *benefit incidence analysis* to respond the question.

Benefit incidence analysis is frequently employed by policy-makers, researchers to indicate effects of a particular public policy on distribution of welfare. For this study, particular public policy is DIS. Origins of the analysis could be traced back to 1970s (Selden *et al*: 1992). Nonetheless, analysis is subject to debates on the unit of evaluation, on the period of analysis and on the grouping the households through their income[7] (Selden *et al*: 1992). Public policy-makers generally want understand impacts of the policies through individuals whereas in economics unit of analysis is generally households. The assumption that says adults of the family makes decisions about family's economic activities is one of the reasons. In addition, it could sometimes be quite complicated to decompose the impact of each individual's contribution to the decision making process (Selden *et al*: 1992). The other issue about public policies is that their impact could spread to future incomes. In this case, to analyse the benefit, it could be required to know about lifetime income of units of analysis or it could be inferred towards the current data. Obviously, lifetime data is a challenging issue particularly for developing countries and inferences would be again based on some simplifying assumptions that could affect quality of data. As to the grouping the households through their income, there is risk of arbitrary determination of income levels. These income levels could represent the poor, the middle income or the rich, but, according to what those thresholds are crossed is generally not

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[7] The fact that, study of Selden et al. (1992) discusses the challenges of benefit-incidence analysis in a more detailed way. However, for this study, particularly these three issues are crucial so they are expressed here.

clear. Nonetheless, in the literature on benefit incidence analysis, groups of incomes of the units of analysis is frequently represented through deciles.

On the other hand, to conduct the analysis, this study is used primary data that was collected from the villages of Aydin that is a province of Aegean region of Turkey. As far as the primary data is advantageous, there are again some challenges. Although primary data definitely meets need of researcher, in some cases, primary data could not be as comprehensive as the secondary data because of several reasons (financial, ethical limitations etc.). Moreover, it saves time that would otherwise be spent collecting the data. However, once the data that would be used in analysis does not exist, primary data collection is inevitable. The fact that, for this study, unavailability of data led the researcher collects primary data.

In this context the following parts of this part is going to provide much detailed information about the primary data of this study and about its collection process. Soon after, implementation of DIS in this region the employment of the benefit-incidence analysis is going to be explained and the result of the study is going to be presented.

4.2. The Data

As it is expressed above, the data that is required to conduct the analysis was collected from villages of Aydin province and this city is located in Aegean region of Turkey. According to SPO regional development reports (2003), the region comes second in regional development amongst the seven regions of Turkey and its share from GDP is around 17%. As to Aydin province, amongst the 81 provinces of Turkey, she is twenty – second and is third developed city in her region. However, the urbanisation is around 50% and it is lower than Turkey's average urbanisation rate that is around 65%. Besides, employment statistics say that around 60% of the working population is involved in agricultural activities and this ratio is again 13% higher than Turkey's average. The second economic activity is being a paid worker in tourism and other services. As to the industry, its share in Aydin's total output is around 7% and this is less than the half of Turkey's average. According to agricultural production ranking of the 81 provinces, Aydin is tenth

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and has a particular eminence in Turkish agriculture owing to produce 3% of country's total agricultural output on her own. In fact, this sort specialisation is a result of having comparative advantage in agriculture. Aydin's natural conditions let her to produce over 45[8] kinds of products according to MARA with having a possibility of multiple harvests in normal years. Therefore primary data collection was conducted in this city; in order to analyse impacts of public policies on agriculture, particularly DIS, Aydin[9] province is one of the most appropriate provinces in Turkey. On the other hand, primary data collection is conducted in 4 villages of Kuyucak district of Aydin province; they are Azizabad, Aksaz, Bucakkoy, Yamalak. In those villages, very important share of the income is earned from agricultural activities due to Menderes River runs through these villages and the River excessively helps irrigation of the land. In recent years, Kuyucak's[10] share from Aydin's GDP has realized around 2 – 2.5% and with this ratio, she is coming ninth amongst the 16 districts of Aydin province (SPO: 2003).

The data was collected with a questionnaire[11] after getting consent of the 76 participants. The questionnaire is mainly about demographic of participants and their economic transactions and about agricultural activity that they involved in period of 2006 - 08. Surely, during the data collection, some challenges arose but this is not expected to affect quality of data. Nevertheless, it affected the course of the questionnaire. Normally researcher would expect to collect the data about the taxes that participants pay, but participants were extremely sensitive about the question and refused to answer it. Otherwise, this study would be able to show net incidence of DIS. A shadow tax rate could not be used as well. Because indirect taxes that are collected from consumption, say VAT or excise tax, have the biggest share in Turkish tax system (Zenginobuz *et al*: 2006). Hence, to compute the right amount of tax for those participants, each consumer unit should precisely know their preferences that are in their consumption basket. Once it is taken into account that this study covers last 3 years of households' subsistence costs and

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[8] MARA indicates that this part of the country comes first in terms of variety of products and adds that it is quite common to find fresh agricultural products for 4 seasons.
[9] For other indicators (education, public health, population growth rate etc.) about Aydin province, please see the SPO's webpage: (Last access: 29th of July 2009) http://www.dpt.gov.tr/bgyu/ipg/ege/aydinPER.pdf
[10] For further information please see, Gross Domestic Product by Districts: http://www.dpt.gov.tr/PortalDesign/PortalControls/WebIcerikGosterim.aspx?IcerikRef=1678&WorkArea=ct 139 (Last access: 29th of July 2009)
[11] The questionnaire is on Appendix -1.

of productional costs (2006-08), it makes impossible to get precise data on taxes. On the other hand, primary data collection showed there were other challenges that reflect Turkish agriculture's structural problems. Agricultural production in Turkey is maintained by small-scale and fragmented agricultural holdings. They are still far from a completely capitalised and instutionalised structure. Consequently, the agricultural producers many times provide inadequate and/or inaccurate data about their supply function. This has already been stressed by SPO in recent years. Hence, while the researcher would expect to get observation over 100, because of the lack of the precise records that are particularly required to compute production costs and then the net disposable income per household, only 76 observations could be achieved. Furthermore, even the accuracy of registered data of producers was controlled by a well-established checking mechanism. Before going to the fieldwork, researcher got information from responsible agricultural consultant of these 4 villages. The products that are produced in the villages, required amount of seed, of fertilizer etc. for each product were learnt from consultant and their shadow prices of last 3 harvest years were gathered from sellers. By this way, when agricultural producer provides data of his costs and of land size that he uses and of the products, accuracy of data would be checked in approximate terms.

4.3. The Analysis of Some Indicators

The first part of the questionnaire is about demographical and social characteristics of the participants. Table – 3 indicates the average levels of age, of labour force participation and of social insurance on the basis of genders and it says that there is no remarkable difference between men and women. Table-4 indicates a comparison of households according to the villages' average levels of household size, of social insurance and of age. Accordingly, in these 4 villages, average number of individuals in a family is 3.43 and amongst the 76 households, 45 families have bigger household size, then 31 of them have smaller household size. The same interpretation could be done for social insurance and age.

Table -4: Demographic and Social Indicators According to Gender

	Num. of Individuals	Average Age	Social Insurance	Participation In Labour force
Villages	263	38,011	93,5%	97%
Women	127	35,679	96,85%	97%
Men	136	39,630	94,85%	97%

Table-5: Demographic and Social Indicators in Compare to Villages' Average

	Average Size of HH	Average Age	Average of Social Insurance
Villages	3,43	38,011	93,5%
Num. of HHs above the Villages' Average	31	36	89,48%
Num. of HHs below the Villages' Average	45	40	10,52%

Table – 6: Main Economic Indicators about Households through the Basic Statistics

	Income06	Income07	Income08	ELCpH	Fixed06	Fixed07	Fixed08	Invest.06	Invest.07	Invest08
Mean	46315,24	51242,6	63368,31	3,92	8987,45	9401,2	9854,355	2302,67	3428,95	4150,79
Median	25556,9	33202,6	44891	3,33	7200	7,680	7,800	0	0	0
Maximum	406361,8	313857	323127	8	60000	62000	66000	70000	75000	85500
Minimum	-4752	-4222,8	-1468,6	1,333	0	0	0	0	0	0
Standard Deviation	58396,6	57193,9	66548,3	1,634	9709	9936,04	10495,85	10773,92	12803,53	13511,85
Skewness	3,64	2,45	2,27	0,78	2,7	2,76	2,83	5,32	4,02	4,42
Kurtosis	20,8	9,8	8,3	2,7	13,7	14,2	14,4	30,9	19,1	23,8

Another social issue is that, a considerable amount of large-scale producers (these are the producers who are responsible to first 20%[1] of agricultural production amongst the households) *get also* involved in other economic activities such as collection and transportation of produced agricultural goods to the markets and working as intermediaries. The prevalence of these activities in this first 20% of agricultural producers is considerably high; according to the data collected, around 60% of those large-scale producers get income through the activities.

As to Table -6, it provides detailed information about participants' economic conditions. In the columns of the table, there are the names of indicators: "Income" represents the earnings of households from agricultural activities between 2006 and 2008. When "Fixed[2]" indicates fixed income of households and it only represents the income that is earned through non-agricultural activities in last three years, "Invest" shows the households fixed capital investment in same term. Finally, "ELCpH" is a welfare indicator of households and it shows the number of durable good ownership per head for each household. In the questionnaire, there are some questions aiming to determine the welfare of the households in most appropriate way: access to internet, having a dishwasher and a microwave, a central heating system or satellite access and number of durable goods of households are intentionally asked questions to the participants. Nevertheless, during the data collection period, it was experienced that having access to Internet is not a welfare issue. Because older households, even they have higher income, do not prefer having a computer and so the Internet. Yet these people have at least two televisions and their claim is that, it is not hard to *learn how a television is used or televisions without satellites are less complicated*. In addition to that, even the richest household does not have a dishwasher *because the women would be able to responsible to wash the dishes, be it as it may be, there would be division of labour*. Therefore, to get a welfare indicator, it is decided to compute number of durable goods per head without concerning what the participant's choice of durable good

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[1] The ratio of 20% could be supposed arbitrary. However, according to the collected data, there is a remarkable difference between first 20% and second 20% of agricultural producers in terms of agricultural income. Moreover, yearly income of first 20% is quite near to Turkey's average income of urban areas.

[2] It is called "fixed" because, it mainly consists of retirement payments and permanent income that is earned by a non-agricultural activity.

is. In other words, having a durable good is not only determined by income, so it could not be an appropriate indicator of welfare.

On the Table – 6, it could be noticed that during these 3 years, income of the agricultural producers increased. The means, the medians, maxima and minima of the income of the 3 years have already indicated this case. On the other hand, skewness that is the measure symmetry of a distribution, says that (as it is expected) participants who are from lower income levels have had majority amongst the all participants. Besides the participants has become more homogenous in terms of income in three years. It could be realised through the skewness; its value has converged to zero. The same things could be said for investments. As to the fixed income, even it has tendency to increase in this period, population, which is subject to analysis, has become more heterogeneous. Kurtosis values supports this observation as well, distributions have become more flat.

4.4. The Benefit Incidence of DIS

Until now, it has been tried to realise participants' socio-economic characteristics. Now this part is devoted to understand the DIS through the benefit-incidence analysis. DIS was conducted between 2001 and 2007.

Table – 7: Unit Price of DIS per Decare according to the Years

	2001	2002	2003	2004	2005	2006	2007
Unit Price of DIS per Decare (in TRY)	10TL	13,5TL	16TL	16 TL	10 TL	7 TL	7 TL

Table – 7 indicates the unit price of DIS payment per decare between 2001 and 2007. The agricultural producers, who got registered to National Farmer's Registry System, could get the payment over these prices for each decare that they owned. The amount of DIS was computed in the harvest year and payments were made the following year, for instance, if an agricultural producer has 10 decares of land, in 2007, he got 70 TL of DIS payment in 2008. This would be another disputable issue of DIS payments. The amount of payment depreciated due to inflation rates.

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When DIS first announced, policy-makers said it would be beneficial to the poor agricultural producers. Could it be true? At least once in their lives, would be the poor agricultural producers supported by the government? This part of the study is devoted to find an answer to this question. Hence, first, it is required to answer this question: *What does increase the possibility of taking DIS payments from government? Moreover, what does determine the amount of DIS payment?* Since to conduct the benefit incidence analysis, the monetary equivalent of public service should be known. In this study, this question is answered by probit estimation:

Estimation[3] - 1

Dependent Variable: DIS
Method: ML - Binary Probit (BHHH)
Sample: 1 228
Included observations: 228
Convergence achieved after 9 iterations
QML (Huber/White) standard errors & covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-2.850528	1.599483	-1.782156	0.0747
DPI	-2.92E-05	3.47E-05	-0.841634	0.4000
FX	4.04E-05	7.51E-05	0.537250	0.5911
ELCPH	0.243987	0.346155	0.704849	0.4809
TP	0.000143	0.000390	0.366923	0.7137
CST	1.68E-05	2.79E-05	0.601589	0.5474
SIPH	0.878584	0.829926	1.058630	0.2898
TLS	0.174322	0.042359	4.115331	0.0000

Mean dependent var	0.868421	S.D. dependent var		0.340279
S.E. of regression	0.193692	Akaike info criterion		0.420095
Sum squared resid	2.551130	Schwarz criterion		0.665435
Log likelihood	-7.963614	Hannan-Quinn criter.		0.518145
Restr. Log likelihood	-29.59267	Avg. log likelihood		-0.104784
LR statistic (7 df)	43.25811	McFadden R-squared		0.730892
Probability(LR stat)	2.97E-07			

Obs with Dep=0	30	Total obs		228
Obs with Dep=1	198			

In this model, number of observation is 228; there are 76 households and their three-year data on DIS provides 228 observations for the estimation. There are 30 agricultural

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[3] For estimation, E-views 5.1 is used.

producers who could not get the DIS payments, mainly for these 2 reasons: They are not registered as agricultural producers in National Farmer's Registry System. Second reason is that even they produce agricultural products, because of not having a land registry, they could not demand this payment. The dependent variable of the estimation process is probability of getting DIS from government, which is represented by "0" or "1". As to the independent variables:

- C is the constant term.

- DPI is the average income of these three years and it is inflation-corrected.

- FX is the average fixed income of households. The fixed income is earned by non-agricultural activities and it mainly consists of retirement payments and permanent income that is earned by non-agricultural activities. It is also inflation-corrected.

- ELCpH is the welfare indicator that has already been explained.

- TP is total productivity of each household. It is computed by dividing the total production of each household into the land size that is used in production.

- CST is the average cost of production of these three years and it is inflation-corrected.

- SIPH is another welfare indicator of this analysis and it represents social insurance rate of households. It is computed by dividing the total number of individuals whom are covered by at least one social security program, into size of households. Actually, this indicator has a crucial role. It is contribution to households' welfare could not be measured in monetary terms, but, it ensures free health services.

- TSL is the land which is used in production. The DIS payments were allocated by total land size of each household. If the total size of the land is smaller than 5 decars, the household would not be able to get DIS. And the upper limit of land size which is subject to DIS payments was 500 decars per household between 2002 and 2007 and 200 decars in 2001.

As it is seen on estimation table, the only significant independent variable is total size of land (TSL). In other words, getting DIS payments from government was only determined by the ownership of the land and payments' amount was computed through the land size. Besides, pseudo-R2 (McFadden R2) shows that, this model's independent variables could

illustrate what affects the possibility of getting DIS, with a remarkable ratio around 73% (Wooldridge: 2002) .

Figure 3: Benefit Incidence Graph of DIS
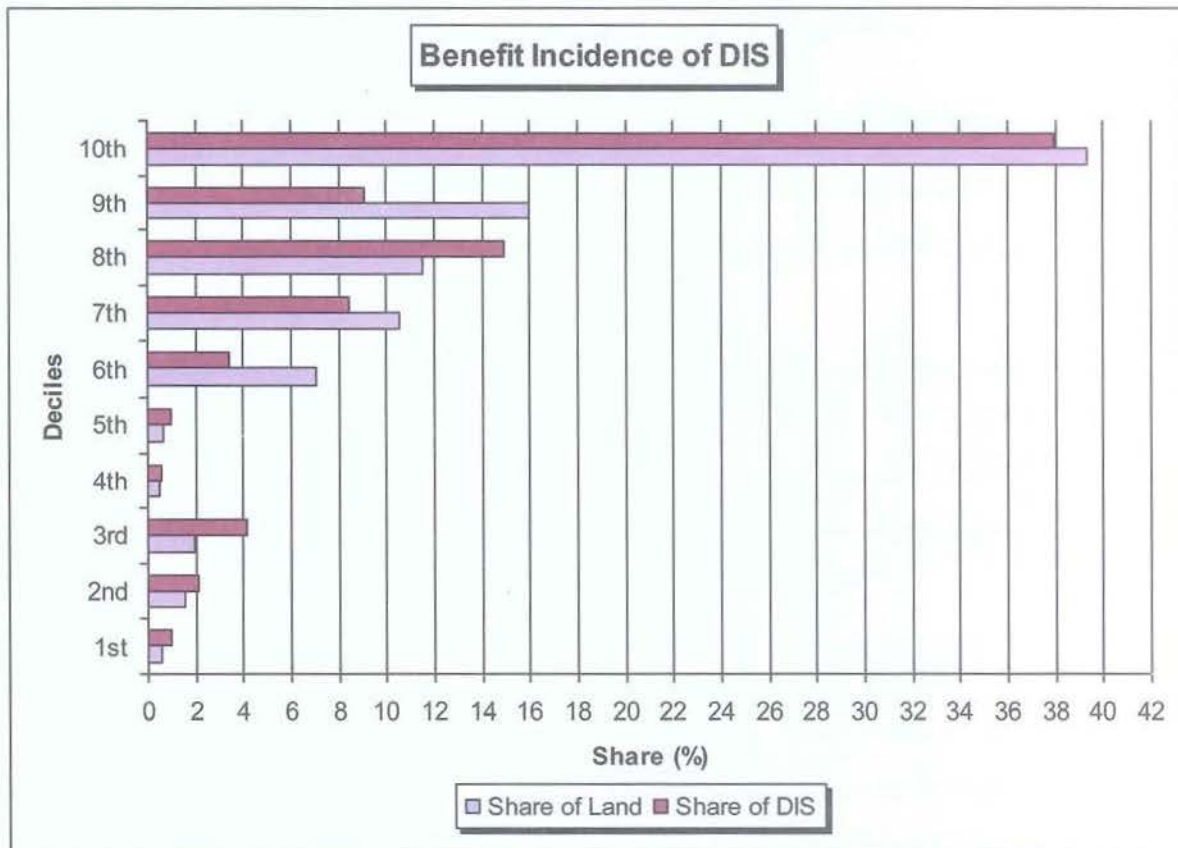
On the Graph-3, while 1st deciles represents the poorest part of the farmers the 10th deciles represents the richest part of the farmers. The poorest part's share of land from the total is less than 2% and the share of DIS that is paid to the poorest from total amount of DIS is also less than 2%. On the other hand, the richest part's share of land from the total is around 40% and their share of DIS from total amount of DIS payments is around 38%. Although policy-makers claimed that DIS would regard the poor, unfortunately, at least last 3 years of this policy over seven-year-implementation process, supported the rich. Obviously, the reason behind that, failure of analysis before the policy was implemented. Since the payments allocated over the land size, the poor agricultural farmers who have smaller size lands, could not take the advantage of getting DIS payment. In addition, at beginning of the DIS, to get the payment, there was no need to cultivate the land i.e. large

size lands' owners could get money without taking the risk of production. However, as to the small-scale agricultural producers, at least for a minimum subsistence level, they could not leave agricultural production. They should venture the risks of agricultural production otherwise they would migrate to urbanised areas, most commonly to sell their labour force in service sector as being disqualified employees.

Furthermore, with the tendency of decrease in other agricultural supports and with the increase of two of the most vital inputs, say oil and fertilizer, the small-scale agricultural producers have been on the edge retracting agricultural production.

Table – 8: Price Changes of Oil and Fertiliser (Urea) (percentage)

Commodity	2003	2004	2005	2006	2007	2008
Crude Oil($/bbl)	28,9	38,3	54,4	65,4	72,7	97,6
Increase per year (%)	N/A	32,8	42,1	20,1	11,2	34,3
Urea($/mt)	138,9	175,3	219,0	222,9	309,4	492,7
Increase per year (%)	N/A	26,19908	24,95176	1,785108	38,78704	59,25392

Source: Undersecretariat of Treasury: Foreign Trade Indicators

The Table – 8 shows the change is world commodity prices which affects the agricultural input prices. However, on Table -7, during this period, it could be seen that the DIS payments tended to be decreased and MARA tried to substitute other support policies to handle the problem (TUGEM, Agricultural Supports: 2009).

To sum up, both current and former policies could not solve the problems of Turkish agriculture; the economic crises, the draught that is encountered in 2007 increased the sufferings of Turkish agriculture. However, the point is that, Turkey is one of leading countries in agriculture, and recently the agriculture has fulfilling a very important responsibility for a developing country like Turkey: by overbidding, agriculture would help to decrease trade deficit. On the other hand, still an important part of the population is involved in agricultural activities. A failure in agricultural policies, thus, would cost to dear. Hence, once an agricultural policy is decided to be implemented, she needs to think twice.

5. Conclusion

After 2001 economic crisis, Turkish government tried to decrease government expenditures and supports to agriculture was one of the titles of government spending. On the other hand, as being a country that has comparative advantage in agricultural production, Turkey wanted to achieve a good place in global markets. To increase productivity and transform the agriculture, it was decided to implement direct income support policy (DIS). It is appropriate to mention that, before Turkey, several countries started to implement DIS; they are the USA, Mexico and Romania. In other words, world had an transformation of agricultural policies before Turkey

Once the policy-maker institutions announced the implementation of DIS, their claim was that, former support system was far from reaching the poor agricultural farmers and diversity of institutions that are responsible to agricultural policies would cause loss of efficiency. As a result, with the financial support of World Bank, Turkish agriculture's structural problems have been tried to be solved. Firstly, National Farmer's Registry System was launched and then agricultural producers start to get DIS payments according to their registered land size.

Nonetheless, DIS could not achieve the expected results. The support was far from reaching to poorer agricultural producers. On the other hand, before concerning based on individuals, macroeconomic indicators would warn Turkey to be careful. Because Turkey was traditionally good at agricultural production and any policy failure could harm that. The second part of the story is of whom benefited to these payments. To understand that, this study, employed benefit incidence analysis. The study used the primary data that is collected from four villages of Aydin province: Aksaz, Azizabad, Bucakkoy and Yamalak. Through a questionnaire, households' income, production costs, welfare level and amount of support were determined. Firstly, the data used to see social and economic indicators on households.

Then the estimation was conducted to see what affects the possibility of getting DIS and its amount through a probit model estimation with the program of E-views 5.1. The findings

would say that possibility of getting DIS is strongly related with total size of the land that is owned by household. Subsequently, benefit incidence was computed. The richest deciles of the households would get the outstanding amounts of DIS in compare to the poorest deciles of the households. Hence, policy-maker institutions had failed due to DIS. The program was far from saving the poor farmers and reaching to them most efficiently, in compare to former support system.

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Multilingualism Problematic within the European Union

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Abstract

"Unity in diversity" constitutes one of the main objectives of the European Union. However, it is questionable to what extent this unity in an atmosphere of various differences among member states can be actualized along with the languages of these member states as formal languages of the EU. Unity requires a common language; however, to reduce the number of official languages which is currently 23 to two or only one, based on the previous fact, does not seem to be a possible way to facilitate the creation of the unity desired. Considering that not all the EU citizens know English or French, the EU has to inform the EU citizens about itself through their own languages. On the other hand, the EU is supranational in character so necessitates a common language to get closer to its citizens and also to bring all EU citizens together. The study aims to discuss this problematic stated above from the perspectives of supranationalists and intergovernmentalists through a detailed explanation about the arguments of both sides regarding multilingualism within the EU while presenting the attitude and actions of the Commission towards the issue.

1. Introduction

The European Union hosts more than 450 million people from 27 different countries with distinct cultural orientations, diversified norms and values. Within the existence of this multiculturalism and pluralism in general and while there are distinctions in terms of social pattern within member states, it is not easy to assume the creation of a single European identity. As the focus of this study, the linguistic construction of the EU is rather complex. One of the characteristics of the EU is that it is multilingual, albeit in a fundamentally different sense, both quantitatively and qualitatively, compared to any other major international or supranational organisation such as the United Nations, the Council of

Europe or NATO. The connotation attaching, within the context of an ever expanding EU, to "multilingualism" clearly transcends that of the plain dictionary definition of the word: the concept of multilingualism stands out as one of the most prominent symbols of European historical, political and cultural diversity. (Athanassiou, 2006, pg. 5) The European Union does not possess a common official language but accepts 23 different languages as its official languages, which are Bulgarian, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hungarian, Irish, Italian, Latvian, Lithuanian, Maltese, Polish, Portuguese, Romanian, Slovak, Slovene, Spanish and Swedish. The pluralism of the EU in terms of languages is a result of its "sui generis" character and its function of uniting 27 nation states that have different though related cultural lives.

This situation has caused debate for long both among the European Union citizens and among those who are engaged in the EU posts or studies. The concern of the European Union citizens is about the fact that in case of a single official language, their native language will face the danger of extinction while the reason lying behind the debate between intergovernmentalists and supranationalists, that is, professionals engaged in studies on the EU has another origin. The supranationalists argues that such a supranational organization as the European Union should have a common official language as it resembles a nation-state in many aspects and it is just natural and necessary for member states to give their sovereignty in language as they do in many other fields in order to reach an organization above nation-states, namely a form similar to federation or confederation, while intergovernmentalists set forth that the European Union should maintain its pluralist nature and nation states should continue their sovereignty in their languages and unique cultures in order to keep the EU as an intergovernmental organization to a higher extent and with a lower level of integration.

Here, multilingualism should be assessed from two different perspectives; multilingualism as people speaking several languages and multilingualism as the existence of several languages in a state or organization. In this respect, another party inside the ongoing debates is European Commission which embraces multilingualism as people speaking several languages and asserts that it is a key tool for further integration. European Commission does not have a say about the possibility of a single official language as

proposed by supranationalists because it seems quite unrealistic in terms of its chance to be implemented while linguistic pluralism can be discussed being a factor that prevents further integration. The important point is the fact that the wish and readiness of nation states, more specifically the European Union citizens, to actualize further integration. This aspect also includes many debates within itself and the wish for a closer EU does not seem so high as many of the EU citizens are not even curious about what is going on within the organization because of the lack of awareness and other factors.

2. Multilingualism

First of all, it is necessary to provide a clear definition of multilingualism and its different aspects related to the argument of the study. Multilingualism both refers to the ability of people to speak several languages, and several languages spoken in a specific area. Therefore, multilingualism is one of the main components of the understanding of "Unity in Diversity". This term is used to express the collaboration and solidarity between people from different nation states within the European Union. "Unity in Diversity" covers awareness of differences and tolerance. The European Union adopted the motto of "Unity in Diversity" in May 4th 2000. The term has been changed to "United in Diversity" as it is the way the term is used in official EU websites.

The understanding of "Unity in Diversity" paves the way for further integration as all the differences are accepted as natural and as they are while greater tolerance is shown. Regarding the EU integration, this supranational organization experienced diverse forms of integration and it is a multi-dimensional phenomenon however the study emphasizes on its social and cultural aspects. The success of the integration is assessed not only by the level of market formation but also by the changes in the lifestyle of people in the Union. While the European Union acquired a successful economic and relatively political integration, it is not possible to clearly demonstrate the level of social and cultural integration. It is a fact that there is a settled eurocentrism; on the other hand, the existence of eurorelativism is not refutable.

2.1. Languages of the EU institutions

Before the discussion of the current debate between three parties, namely supranationalists, intergovernmentalists and the European Commission which is also supranational by nature but constitutes a separate party in this debate because its understanding of multilingualism is different from those of other two parties, it is useful to explain that the European Union institutions have certain language regimes.

In the European Parliament as stated in The Application of Multilingualism in the European Union Context by Athanassiou, all documents of Parliament shall be drawn up in the official languages. All Members shall have the right to speak in Parliament in the official language of their choice. Speeches delivered in one of the official languages shall be simultaneously interpreted into the other official languages and into any other language the Bureau may consider necessary. Interpretation shall be provided in committee and delegation meetings from and into the official languages used and requested by the members and substitutes of that committee or delegation. At committee and delegation meetings away from the usual places of work interpretation shall be provided from and into the languages of those members who have confirmed that they will attend the meeting. These arrangements may exceptionally be made more flexible where the members of the committee or delegation so agree. In the event of disagreement, the Bureau shall decide.

Because the Council of the European Union is the defender of the interests of Member States, it is the institution for which the commitment to multilingualism is most important. In the functioning of the Council of the EU, regulations and other documents of general application cannot validly be adopted or enter into force unless they have been drafted in all the official languages of the EU. Except as otherwise decided unanimously by the Council on grounds of urgency, the Council shall deliberate and take decisions only on the basis of documents and drafts drawn up in the languages specified in the rules in force governing languages. Any member of the Council may oppose discussion if the texts of any proposed amendments are not drawn up in such of the languages referred to in the statement above as he or she may specify.

The European Commission uses English, French and German relatively to a lower extent as de facto working languages because of the concerns of speed and efficiency of the institutions. However, in its external relations, it is bound with the principle of multilingualism.

The European Court of Justice is another multilingual institution of the EU. The language regime of the ECJ differs from that of the other Community Institutions. Internally the ECJ operates in French only, French also being the language of its internal administration. The use of a single working language was no doubt intended to avoid extensive cross-translation, while at the same time ensuring a consistent use of vocabulary which has overtime acquired its own Community law meaning, thereby also contributing to legal certainty while the language of a case is any of the official languages of the EU and that this will be decided by the applicant, subject to a limited number of exceptions. Moreover, in proceedings involving a preliminary ruling, the language of the case is the language of the national court or tribunal which has requested the preliminary ruling and is to be used in written and oral pleadings by the parties and in supporting documents

2.2. Argument of Supranationalists

Supranationalism refers to decision-making model that is applied in political organizations with multiple nations and in which power and sovereignty of nations states are transferred in some areas to another authority. Supranationalists form the faculty who think that the European Union should be more supranationalists in character and transform into a federation through further integration.

Back to the debate covered in the study, it is logical to start with the argument of supranationalists. Supranationalists argues the creation of a uniform language system within the Union so the EU will obtain a great chance to be more integrated and turn out to be a federation. For them, English for the sake of globalisation, French for the sake of diplomatic relations or German for the sake of relative majority are languages that can be used as the exclusive language of the Union. Supranationalists even supported the use of Esperanto, an artificial language created in an attempt to overcome the communication

difficulties among people speaking different languages. It has been considered likely to be the common language of the EU by some including supranationalists.

Their argument seems to stand weaker against that of intergovernmentalists because it is not realistic in today's conditions, but it is more likely to express a utopia. Even if a single official language is declared to be used, people will not comply with it and a uniform language will not eradicate all other differences among the EU citizens. While nation states cannot prevent even regional languages other than the official language to be spoken, it does not seem reasonable for the European Union to actualize such a single official language system throughout the Union.

2.3. Argument of Intergovernmentalists

Jean Monnet, Robert Schumann and many others had supranationalist views for the future of the EU and the motivation behind these attitudes was largely the desire to prevent a possible European war. This concern was quite reasonable in those years while today it is not so easy to justify that such a concern is valid. In parallel with this view, intergovernmentalists believe that European states no longer need to be that close to each other, that is, they do not require taking joint actions against unwelcome situations, or do not necessitate determining and implementing common policies. According to intergovernmentalists, the interests of a country can be best achieved by the national governments. They have skeptical views about the fact that the EU is becoming supranational more than enough though it is not possible to set the level of supranationalism and they observe this fact as violence to nation states' rights. Intergovernmentalists argue that the function and authority of supranational institutions of the EU should be limited and the authority for decision-making should belong to national governments. In other words, intergovernmentalists oppose to further integration of the EU while minding interests of nation states.

When it comes to the argument of intergovernmentalists, they support pluralism in languages simply because they do not desire the EU to go beyond an intergovernmental organization any further. The intergovermentalists assert that the nation states should keep

their sovereignty in more areas rather than giving it to the EU. Beyond question, the language and culture that is partly created by a common language possess great importance for nation states as these two assets are crucial for the survival of states. Thus, the intergovermentalists are so strict in their point of view and supports multilingualism within the European Union. On the other hand they cannot provide with rational solutions to mitigate the concerns that such pluralism makes social and cultural integration more and more difficult.

2.4. European Commission

In terms of European Commission which is also a part of the debate as a supranational institution of the EU, it deals with multilingualism differently than supranationalists (although it is supranationalist in character) and intergovernmentalists of academic sphere. Whereas supranationalists and intergovernmentalists discuss over the plurality of official languages within the EU, European Commission handles multilingualism as the ability of people to speak several languages. Regarding the general attitude the European Commission possesses, multilingualism brings advantages to the society. The fact that there are many multilingual people in a society, several languages are spoken and taught in this society gives rise to cultural and linguistic prosperity. The spread of multilingualism supports business and economic relations.

According to Leonard Orban, the European Commissioner for Multilingualism, multilingualism is a vital tool for the integration of the Union. On individual base, the existence of multilingual citizens across the EU creates a bridge for a further closer integrated union. Multilingual EU citizens mean a more cohesive union and they obtain social cohesion to this supranational organization in social terms. Multilingualism also increases business skills and competitiveness of individuals and organizations working with multilingual people. Nowadays, it is not enough to be bilingual or to know English as the only foreign language because from personal perspective, it is necessary to speak at least two foreign languages in order to get jobs. Moreover, people who do not appropriate linguistic skills are losing business and money. So, such a cultural phenomenon as

language is directly related to economics and monetary issues, therefore it becomes more and more important for the EU institutions.

Multilinguals can understand and live in diversity, so they can catch the necessary tolerance and understanding to form unity within this diversity. Being multilingual serves both for the individual and the society s/he lives in. Thanks to languages, people can witness and comprehend diverse ways of living and as a result intercultural tolerance rises. Multilingualism also facilitates intercultural communication among the EU citizens.

Currently, the number of multilinguals is not high enough to bring about cohesion for the whole union, so European Commission focuses on the promotion of multilingualism. (Appendix) For Leonard Orban, promoting multilingualism is costly and some candidate states were sensitive about losing their identity through losing their language before becoming Member States. Citizens did not like being challenged regarding their languages by other ones as an attempt to protect their language so their culture and social identity .However, they stop worrying after being convinced that their own language would be one of the official languages of the European Union as through the accession to the EU, they would acquire official recognition for their language, they would have the chance to preserve and promote it. The European Commission tries to ensure the existence of a single union along with different cultures and languages.

At the same time, the European Commission does not undermine the possible problems likely to emerge as a result of multilingualism and sees translation and interpretation as a tool to resolve these inconveniences. Leonard Orban states "The European Commission attaches special importance to translation. Literary translators in Europe enjoy the support provided by the Culture program. The Commission is ready to explore all avenues enabling it to do more in this area." Therefore, translation activities are quite important for the functioning of the EU and along with the existence of multilingualism within the Union, obstacles arising from the nature of different languages can be overcome by translation and interpretation.

According to him, "Europe today is a bastion of diversity. And language is a fundamental part of this. Through it, we construct our identity. Diversity has sometimes been seen as an obstacle to European unity. Today, on the contrary, it seems a beneficial right. It is one of the ties that bind our union. The European Union fully recognizes that linguistic diversity is a treasure that needs to be cherished as it deserves. And as you know, this also includes regional and minority languages. We will continue to support and promote this diversity, with due respect for the principle of subsidiarity..."

The European Commission has adopted a multilingualism policy which covers the promotion of language learning, a multilingual economy and access for all EU citizens to the EU legislation in their own languages. The European Commission gives greater importance especially to language learning and education. The reasons for learning languages are largely about practical reasons such as opportunities to use the skills at work or to work abroad while to use foreign languages on vacations and for personal satisfaction composes other factors whereas the motives not to learn foreign languages are expense of the learning process, lack of time and motivation. In regard with education, it is an indispensable part of promoting multilingualism. Europeans learn languages at school to a great extent. As a result, all these factors mentioned above are the key issues that the European Commission focuses on.

The European Commission has an integrated program named Lifelong Learning Program including educational initiatives. Lifelong Learning Program has been especially formed to promote language learning. The program supplies support for languages in early language teaching, school education, vocational education, higher education and adult education. The European Commission is aware of the fact that languages are learned faster at younger ages and through Comenius program, the European Commission provides teachers with professional mobility. Furthermore, with Leonardo program, it assists language learning methods and materials while the student mobility is actualized through Erasmus program. The European Commission has started Gruntvig program in order to support adults to improve their language skills through which they can compete in the business market. Moreover, the Lingua Connections Guide is another program designed by the Commission that provides instructions and useful tools to promote language learning.

The year 2008 was declared the European Year of Intercultural Dialogue. And multilingualism as an instrument to improve mutual understanding and integration gained attention.

Among the ambitions of the Commission for 2010 and further, the language learning objective takes its place, which covers the fact that every EU citizen should have the ability to speak two foreign languages other than their native language as also set in the Council of Ministers meeting in Barcelona in 2002.

Regarding the multilingualism policy of the EU, it has three main elements; promoting language learning and linguistic diversity in society, promoting a multilingual economy; and promoting social integration though extensive knowledge of and tolerance to diverse languages.

Multilingualism reflects on the motto of the EU, "Unity in Diversity" .The European Commission considers the diversity of languages as an asset rather than a burden. So, along with the promotion of multilingualism, the European Commission also supports the EU citizens to speak their own languages.

3. Conclusion

In conclusion, a single language that will be common to all Europeans has been discussed for years and it is still an ongoing debate between supranationalists and intergovernmentalists while it is necessary to bear in mind the attitude of the European Commission towards the multilingualism although the perspectives are different.

Supranationalists support the acceptance of a common language and even the creation of an artificial language, which would push the EU to a more integrated structure and bring it closer to be a federation. On the other hand, their argument has been challenged by the fact that it seems unrealistic to actualize. A common language for the EU may be somehow declared, however, the implementation by the EU citizens cannot be guaranteed.

On the other side, intergovernmentalists that are defenders of the sovereignty of nation states argue that a common language for all the EU is unacceptable for the nation states as it would pose a danger to the presence of their own language, so their culture and social identity. Nevertheless, as long as the linguistic pluralism exists in the EU, the concerns about the obstacles for further integration will continue.

While the debate between these two parties continues, another entity that is engaged in multilingualism is the European Commission which handles multilingualism as the competence of people in several languages different than other parties and sees it as a vital medium for the integration of the European Union. The European Commission takes steps to encourage multilingualism.

One language that dominates and replaces the others is not acceptable for the nation states. None of the official languages of the EU can impose itself to other Member States. The solution found by the EU is multilingualism. Every citizen speaks his/her own language and when necessary translation activities make sure that the communication is precise while language learning is promoted in meanwhile. No language can be used at the expense of other official languages and the respect to all languages is crucial for the equality of Member States, as a result for the European Union.

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D48b-d Which languages do you speak well enough in order to be able to have a conversation excluding your mother tongue?
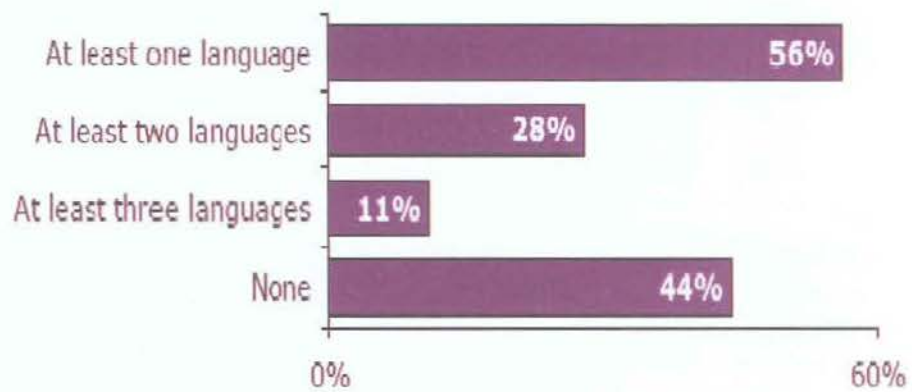
An Evaluation of the Scientific Approach in International Relations Discipline

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Abstract
Finding the most appropriate method to study social sciences in general and International Relations in particular, is the main purpose of this paper. This study also aims to elaborate the fundamental methodological debates in social sciences by a focus on the scientific approach. After a short overview of the characteristics of these main methodological debates, the fundamental assumptions of scientific along with reflectivist camps will be examined. In the conclusion, some recommendations will be made to avoid the methodological arguments which, in no sense may be as important as the epistemological problems, to divide the discipline into two different camps.

1. Introduction

The main arguments advocating the use of the natural sciences' methods in social sciences started as a result of the great success of natural sciences particularly after the seventeenth century. This spectacular development in natural sciences such as physics or chemistry caused the emergence of a trend in social sciences whose advocates argued that by using the same methods of natural sciences, it would be possible to achieve the same success as well as the definite rules of social sciences and even make some predictions. Although there are slight differences among these scientific approaches, such as empiricism, positivism, behavioralism, naturalism and logical or empirical positivism, they all have some common assertions like the necessity to use quantitative methods and statistics, the belief on the analogy of social and natural sciences and also the importance of reaching prediction or verification. Nevertheless, as a natural characteristic of history, another trend, namely, traditionalism, reflectivism, anti-positivism or anti-naturalism defending the

opposite views of the first camp appeared. Now the debate related to the efforts on finding the best method of social sciences still goes on.

Hollis and Smith evaluate this methodological distinction elaborately in their illuminating book: Explaining and Understanding International Relations (1990). As the authors maintain, social sciences has developed on two intellectual traditions. While one of them is founded on the great success and rise of the natural sciences, the other originates from the nineteenth-century ideas of history and in particular, writing the history from the *inside* (emphasis added). To say in a brief way, "explaining" is the key term in the first tradition whereas "understanding" in the other. They also hold that both of these traditions are necessary for the study of International Relations (IR). Moreover, while on the one hand; for the understanding scholars, an "inside" story is needed in order to understand the desires, beliefs and resulting actions of the actors, on the other hand; as the "outside" model is based on the methods of natural sciences and is usually described as a search for cause, in order to explain an event or a state of affairs, the reasons which caused it should have to be found (Hollis and Smith, 1990). This distinction will be analyzed in detail in the following parts of this study, but here, it will be pertinent to note that this methodological distinction unnecessarily divided the scholars of the social sciences.

As Chernoff notes, the earliest theories on the methodological question of the twentieth century were reactions against the dominant neo-Kantian and Hegelian idealism which mixed metaphysics with science. To him, early twentieth-century empiricists regarded the unobservable entities as unfit for scientific duty. Chernoff clearly summarizes this period as follows: Within a few years, logical empiricists and logical positivists, whose influence grew quickly, came to include explanation in their account of science. Through the second half of the twentieth century, IR adopted standard social-scientific conceptions of 'explanation' and 'prediction'. As he rightly points out, the view of logical positivism spread particularly through the English-speaking world during and after the Second World War and dominated the Anglo-American scene through the 1960s (Chernoff, 2005). Richardson also holds that logical empiricism -which is interchangeably used with logical positivism by many, provided the working framework of most philosophers of science from 1930s to the 1960s. Moreover, the analysis or explication of important scientific and

metascientific terms (confirmation, explanation, and so on) constituted the main issues placed at the heart of philosophy of science by the logical empiricists. Some writers such as Richardson even argued that philosophy of science as a discipline distinct from epistemology would not exist without the impetus of logical empiricism (1996).

The term positivism was, in fact, first used by Saint-Simon (1760-1825) before the logical positivists of the early twentieth century to refer to the extension of the scientific method to philosophy. The term was then appropriated by Auguste Comte to designate what in his system of thought was to be the last and highest stage of knowledge the stage of science: descriptions of sensory experience formulated in terms of mathematical formulas. In the early and middle parts of the twentieth century, the term positivism was usually associated with logical positivism sometimes referred to as logical empiricism or scientific empiricism, that is, the philosophical movement that advocated the theory that only statements of mathematics and logic along with the statements of empirical science are cognitively meaningful. The logical positivists' theory of meaning was based on the empirical verification and despite their differences, it is worth mentioning that there were three common doctrines that positivists tended to embrace: The first is that science is the only source of valid knowledge and theology, mysticism, as well as poetry as sources of valid knowledge were therefore, rejected by them. Second, any kind of metaphysics and metaphysical speculation must be rejected. Finally, only procedures for verification that are reducible to scientific verification are acceptable.

The term "logical positivism" was actually coined in the 1920s to characterize the standpoint of a group of philosophers, scientists and mathematicians who gave themselves the name of the Vienna Circle which came into being in the early 1920s. Ayer emphasizes that at the beginning, Vienna Circle was more of a club than an organized movement. However, after finding that they had a common interest in, and a similar approach to a certain set of problems, its members met regularly to discuss them. Ayer held that the club began to resemble a political party in 1929 with the publication of a manifesto entitled "*Wissenschaftliche Weltauffassung, Der Wiener Kreis*", that is, *The Vienna Circle; Its Scientific Outlook* which gave a brief account of the philosophical position of the group

and a review of the problems in the philosophy of mathematics and of the physical and social sciences that they were chiefly concerned to solve (Ayer, 1959).

In 1936, Weinberg asserted that in the first official statement of the Vienna Circle, the two principal aims were set out as follows: First, to provide a secure foundation for the sciences, and second, to demonstrate the meaninglessness of all metaphysics and the method used to realize these aims is the logical analysis of all concepts and propositions. Weinberg held that although there have been other philosophical movements devoted to similar purposes such as the nineteenth century positivism, the exclusive use of logical analysis to demonstrate positivistic theses constituted the unique characteristic of the philosophy of the Viennese Circle (1936). This attitude of positivism which focused on the observable and objective facts largely used the model of natural science for its purposes. Logical positivists sought to identify and eliminate that which lacks genuine meaning, including metaphysics and moral, social and religious philosophy. Further, early positivists emphasized verification and verifiability as the key to meaningfulness, later preferring 'confirmability'. Logical positivism, which later evolved into logical empiricism, led by Reichenbach (1938), advocated the hypothetico-deductive (h-d) model, wherein the proffered hypothesis is subjected to empirical testing. Deductive consequences are derived from the hypothesis and compared to the results of the empirical tests (Chernoff, 2005).

Chernoff regard logical positivism, which argued for both foundationalism and empiricism as the most influential school of philosophy in the early twentieth century. He notes that logical positivists asserted that "verification" along with the fact-value distinction was the central feature of science since they thought that arguments over moral or value judgments could not be settled on empirical and logical grounds. They also believed that the inclusion of value judgments in any field of study would prevent progress. Finally, they strongly supported the idea of a single method for all sciences because to them, all scientific knowledge is developed with the same sort of enquiry, observation, and analysis (Chernoff, 2007).

Martin defines positivism as the position that the methodology of the social sciences is not fundamentally different from that of the natural sciences. Like Chernoff, who held that

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logical positivism is but one form of empiricism and naturalism (Chernoff, 2007, p. 180), Martin also maintained that it is closely identified with what has been later called naturalism or the naturalist approach which maintains that the social sciences should approach social phenomena in the same way the natural sciences approach natural phenomena. That is to say that, social sciences should attempt to explain and predict under a set of laws. Although the defenders of naturalism admit that laws are more difficult to discover in the social sciences than in the natural sciences, Martin asserts that this approach holds that the difference is merely one of degree (Martin, 1999, pp. 41-42).

As obvious from the above explanations, some of the most important social sciences as well as International Relations questions are methodological in nature. This great methodological distinction that I have elaborated so far has intensified after the Second World War and transformed itself as the Behavioralist-Traditionalist debate. Jackson and Sorenson argue that self-consciousness about concepts and terminology was first emphasized in the 1950s and 1960s by the behavioral development in political science. As their precedents such as logical positivists, Behavioralists believed that social science is not fundamentally different from natural science and the same analytical methods can be applied in both areas. The defenders of this approach also argued that by collecting data which can lead scientific explanation, it would become possible to provide empirical explanations of political behavior. This behavioral trend was actually a reaction to the traditional or "classical" approaches which emphasized history, philosophy, and law and which also rejected the view that there can be one correct or valid scientific analysis of international politics. Instead, they argued that theories are limited by history and culture (2003).

2. The Main Methodological Debates in Social Sciences

It may be argued that the search for a "scientific" international relations discipline actually is composed of the debates between the scholars of IR who regard social sciences as different from natural sciences and thus contend that different methodologies should be applied and the other scholars who advocate the idea that there is no essential difference between two of them and therefore, the same methodology have to be used. All of these

scientific approaches and the main methodological debates on social sciences that I have summarized in the introduction will be elaborated under the following titles.

2.1. The Scientific Approach

As Lakatos points out, "for centuries, knowledge meant proven knowledge –proven either by the power of the intellect or by the evidence of the senses. As he notes, the proving power of the intellect or the senses was questioned by the skeptics more than two thousand years ago; but they were browbeaten into confusion by the glory of Newtonian physics (1968-1969, p. 149). As already discussed in the introduction, this attitude towards the "scientific knowledge" has accelerated by the success of natural sciences. As Chernoff emphasizes, as a consequence of this great success of natural science, it seemed reasonable to many people to use these methods in an analogous way to guide the social sciences as well and therefore, they have been adapted for use in the social sciences by some scholars. He also emphasizes that the impact of Newtonian physics led the thinkers in many fields to believe that the use of similar, precise (mathematical) methods to their disciplines would produce similar results. This could also lead to the creation of a single theory, reduce divergence and dissent within the field and usher in a single view that would be accepted by consensus. Among those scholars, there were the ones thinking like Leibniz who hold that human behavior could be brought into a Newtonion-like system (2005).

Science is defined in terms of the approaches used to study the topic. Leary quotes from Stanovich who argues that three criteria must be met for an investigation to be considered scientific: systematic empiricism, public verification, and solvability. The first of these criteria, empiricism refers to the practice of relying on observation to draw conclusions about the world. Leary points out that scientists insist that conclusions should be based on what can be objectively observed, and not on assumptions, hunches, unfounded beliefs, or the product of people's imaginations but this does not mean that observation alone makes something a science since everyone draws conclusions about human nature from observations. But rather, scientific observation is *systematic* and scientists structure their observations in systematic ways so that they can draw valid conclusions from them about the nature of the world. Leary also argues that data obtained through systematic empiricism

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allow researchers to draw more confident conclusions than they can draw from casual observation alone. The second criterion for scientific investigation is that it be available for public verification. In other words, research must be conducted in such a way that the findings of one researcher can be observed, replicated, and verified by others. Leary asserts that there are two reasons for this: First, the requirement of public verification ensures that the phenomena which scientists study are real and observable, and not one person's fabrications and second, public verification makes science self-correcting. The findings obtained from scientific research are not always correct, but the requirement of public verification increases the likelihood that errors and incorrect conclusions will be detected and corrected. As noted above, the third criterion for scientific investigation is that science deals only with *solvable problems*. Researchers can investigate only those questions that are answerable given current knowledge and research techniques. In other words, science does not deal with questions beyond the scope of scientific explanation (Leary, 2001).

As discussed earlier, according to some scholars, the social sciences work in a way parallel to the natural sciences, and the scientific method could be applied to IR. This use of scientific methods, thus, has an essential importance in studying social sciences as well as IR. Logical positivists who accepted the related doctrine of logical empiricism are one of the most significant defenders of this assertion. Chernoff itemizes the key claims that both logical positivists and early logical empiricists accepted:

1. *Foundationalism*. Science was built upon a firm foundation of objective observation and strictly logical reasoning.
2. *Verification*. Theories in the natural sciences are different from others in that results from scientific reasoning can be verified and tested.
3. *Progress*. The idea is that theories are compared to one another, and the best theories move us forward from inferior theories, producing progress over time.
4. *Objective comparisons of units*. Once the observations are made, different competing theories may be compared on the basis of objective criteria so that we may see which one is correct.

5. *The objectivity of observations.* The progress that occurs is a result of our ability to observe the world in an objective way, that is, all investigators in the same situation would report observing the same things.

6. *Discovery of reality.* Scientific knowledge accumulates over time as one theory gives rise to a better theory, resulting in progress toward the true nature of reality.

7. *Objective facts versus subjective values.* Objective observation is in part possible because personal traits like moral values do not influence what is seen.

8. *What the world consists of.* Science adheres to the strictly observable and empirical and, in this way, separates itself from nonscientific methods and topics like religion and magic and deals with the reality of the world about which science theorizes. Ultimately the best theory is chosen, because it is the one best supported by the set of available observations and most closely describes reality (2007).

In order to better understand the fundamental characteristics of the scientific approach, it is also necessary to display the main features of natural sciences which are highly related to the above-mentioned key claims. According to Chernoff, these characteristics which fit together in the empiricist account of natural science include the following nine:

- Science is based on sensory observation, and the senses are generally reliable, although not perfectly so.
- Characteristic one requires that the world display regular patterns of behavior.
- The regular patterns of characteristic two can be quantified.
- Scientific theories involve causal explanations and causal mechanisms.
- By creating different conditions artificially, investigators can draw conclusions about the world outside of the experiments.
- Scientific theories make use of two different types of terms, "observation terms" that refer to entities directly observed, and "theoretical terms" that do not refer to what is directly observed.
- The investigation is "objective" in the sense that what the behavior investigators observe is the same whether it is being observed it or not; that is, the observation does not alter the behavior.

- The domain is "objective" also in the sense that different investigators would make the same observations; what is observed does not depend on the personal traits, religion, nationality, or ideology of the investigator.
- Reliable (though not necessarily infallible) predictions will be justifiable from the theory (2007).

Chernoff investigates the connection between International Relations and the natural sciences and argues that those who have written about IR have made use of methods drawn from military strategy, ethics, legal theory, diplomatic history, and the like. Chernoff also argues that only a few people prior to the twentieth century applied the concepts and methods of modern science to problems of IR, however, beginning from 1960s, some scholars argued that the failure of this discipline stems from its failure to adopt the elements of scientific theory. Some theorists like J. David Singer even argued that it was the subjective elements such as the moral claims of IR as well as the other social sciences that have prevented progress. As Chernoff notes, Singer and others, therefore hold that the empirical theory that IR produces should be parallel to natural science theory, that is, it should be objective and free of moral judgments. The authors who agree with Singer on his proposition that the reasoning should be involved in social science theories, are called "naturalists" while some others authors who believe that there are fundamental differences between the proper study of nature and society includes "hermeneuticists," "interpretivists," "poststructuralists" and "Critical Theorists" which is one of the next topics of the study. Moreover, those who reject any parallel with the natural sciences are "anti-naturalists" (Chernoff, 2007).

2.1.1. Explaining-Understanding Distinction

Although explanation-understanding distinction has been already summarized in the introduction, since this distinction carries great importance in methodological debates of social sciences, it deserves more attention. As Hollis and Smith rightly emphasizes, before the seventeenth century, it was believed that five senses could give the men the knowledge of reality; however, starting from this period, the answer became the "Reason". This separation of explaining-understanding actually bases on Weber's distinction in *Economy*

and Society (for him, Erklären, *or the kind of causal* explanation *was proper to natural science, and* Verstehen, *the kind of* understanding *was proper to social science).* Like Weber, Hollis and Smith also argues that while *explaining or causal explanations are the best way to analyze natural sciences, as contrary to the natural world, understanding is the most proper way to analyze social sciences. They also maintain that there are clear differences between natural events and social actions which affect the IR theories in one way or another. To them, the social sciences study social action and in this sense,* Verstehen *has a first, primary sense of "empathy" or "direct understanding" while natural science works with a basic or datum language of physical behavior. According to these authors,* as contrary to the natural world, the most obvious fact about the social world is that what happens in it has meaning for the inhabitants. They further argue that there are four main reasons why the methods of natural sciences cannot be applied to the study of social sciences: First, people find meaning in their experience. Second, since language is the usual vehicle of expression, linguistic meaning is a crucial component of social life. Third, there is a wider question about action and its context which can be put as one about meaning. Finally, ideas have meaning for social actors. That is to say, what people mean by their actions depends on their ideas. Theories of IR, for instance, influence the foreign policy makers and many of the IR scholars, therefore, try to use their theories to improve policy-making.

Although it has been mentioned in the previous paragraph that *Verstehen* is a German term meaning "understanding," or "comprehension", as Martin notes, in late-nineteenth-century, it came to be associated with the view that social phenomena have to be understood "from within". This was a qualitative approach rather than quantitative and was opposed by positivists who stressed external, experimental, and quantitative knowledge. Martin also points out that although these positions have been modified over time, this controversy between the positivists and the anti-positivists nowadays called the naturalists and anti-naturalists has persisted. However, instead of appealing to *Verstehen* in describing their preferred approach, anti-positivists today speak about the interpretation of meaning, or of hermeneutical understanding. Although naturalists admit that the search for laws may be more difficult in the social sciences and that the laws produced may be less precise, statistical, or less well-supported, they argue that such differences does not represent any

fundamental difference between the natural and the social sciences. Positivists does not even make any sharp separation between explaining and understanding, while arguing that to understand a social phenomenon, one must subsume a causal law, that is to say that explaining the action causally by laws was adequate but explanation was not necessarily tied to understanding the action from the point of view of the actor. Anti-positivists, on the other hand, do not accept the positivist arguments. They assert that the study of social phenomena should not be approached in the same way as the study of nature, due to basic differences in the subject matter at hand. They also argue that the social scientists should use the method of *Verstehen* and understand social phenomena from the point of view of the actor. Further, instead of focusing on the causes, social inquiry should concentrate on the agent's reasons. They therefore, hold that the methodological distinction between the natural and social sciences is so great (Martin).

Two of the most important theorists of *Verstehen* approach, Wilhelm Dilthey (1833-1911) and Max Weber (1864-1920) also argued that the separation between the natural and social sciences was based on a difference in subject matter. They further held that, unlike purely physical phenomena, social behavior has an inner dimension. For Dilthey, understanding social behavior involves reliving the subjective experience of the actor whereas for Weber, understanding social behavior requires giving causal explanations that are subjectively meaningful. Martin regards Collingwood who maintained that historical events must be understood from the inside as the prime representative of the *Verstehen* approach in the English-speaking world (Martin).

The most famous critics of the classical *Verstehen* position were the positivists. Carl Hempel, one of the most famous logical positivists, maintained that *Verstehen* is neither necessary nor sufficient for scientific explanation. Martin also critically evaluates this method of *Verstehen* while holding that classical *Verstehen* theorists placed unacceptable limitations on social science. He accepts that the human behavior has a purposeful nature but to him, this does not mean the impossibility of a positivistic social science. He holds that neither the classical V*erstehen* position nor more recent interpretivists' variations of it are defensible because they presuppose a much too narrow view of the social sciences. Like logical positivists, he also maintained that *Verstehen* is not a method of verification

and since it is not a procedure reducible to scientific verification, it was not acceptable. To Martin, *Verstehen* can be defined as taking the subjective standpoint of the social actors. He notes that classical *Verstehen* theorists claimed that *Verstehen* is necessary for social scientific understanding while positivists famously claimed that *Verstehen* could be a method of discovery but could not be a method of verification. As Martin rightly states, although some more recent Verstehen theorists explicitly agree with the assumption that *Verstehen* is necessary for social understanding, other interpretivists do not use the term *Verstehen* and advocate a closely related thesis that interpretation of human action in terms of the meaning of the social actors is necessary for social scientific understanding (Martin). Based on the positivist trend, the reflections of the following Behavioralist-Traditionalist debate still retain itself. This great debate of 1960s deserves more attention since it constitutes one of the most significant methodological discussions in social sciences along with the International Relations discipline.

2.1.2. The Behavioralist-Traditionalist Debate

Tanrısever argues that historical and social conditions of the Cold War era should not be ignored in analyzing the reasons of the emergence of this debate. Since during this era, international relations practices were conducted on the basis of ideological polarizations, there was a tendency on presenting these fictions as objective but not as ideological truths, suggest Tanrısever. Technological developments should be regarded as another reason of the emergence of Behavioralist revolution. In particular, computers created an atmosphere of self-confidence among Behavioralist researchers who argued that data bases could now be analyzed more properly. Furthermore, some researchers like Charles McClelland claimed that by entering some data such as population, raw materials or memberships of the military alliances to the databases and by measuring those data, it would be possible to define the states' behavior objectively (2006). These developments led a search for a "scientific" IR although it was already a scientific discipline even without the appliance of natural science methods.

In 1957, Easton declared that a tremendous transformation was under way, not only within political science but in all the social sciences, particularly in the US. For him, this

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transformation was taking place from traditional approaches to the other approaches seeking the use of the methodology of the natural sciences (1957). In 1961, this time it was Dahl, who declared the victory of the Behavioralist approach; he stated that "the study of politics has been altered, permanently, by a fresh infusion of the spirit of empirical inquiry by, that is to say, the scientific outlook" (1961, p. 772). More than a decade later, Lijphart, being quite hopeful on the development of international relations discipline, also argued although traditional paradigm was transforming (1974). In his thought-provoking and polemical study, The Structure of Scientific Revolutions which was first published in 1962, Kuhn stated that scientific revolutions are the non-cumulative developmental episodes in which an older paradigm is replaced in whole or in part by an incompatible new one (1996). As Lipjhart rightly points out, "this pattern, applied to the field of international relations, leads to the prediction that the behavioral paradigm will eventually be victorious" (pp. 41-42).

In his prominent study of "Balance of Power, Bipolarity and Other Models of International Systems", Kaplan had already argued that "a pattern of repeatable or characteristic behavior does occur within the international system... and the theory of international politics can predict this characteristic or modal behavior within a particular kind of international system (1957, pp. 684-695). In 1961, he further stated that "in any event, the explanations or theories of social sciences can never have the authority of theory in physics, or its explanatory and predictive power. Therefore, the very difficulties of theory building and confirmation in international politics demand sincere dedication to scientific canons of procedure" (1961, pp. 23-24). In his article about the research methods in the systems framework, he also stated that empirical analysis of gross system behavior on a comparative basis and statistical studies about important system characteristics are needed (1963).

Brown and Ainley assert that the Behavioralists who were of this opinions were consisted of a comparatively large number of ex-natural scientists who were attracted to the field and whose aim was to make rigorous, systematic, scientific concepts and reasoning dominant (2005). However, the insistence of Behavioralist school on the study of international relations by the methods of natural sciences caused an intense reaction among traditionalist

scholars. According to those scholars, "people", constituting the subject of social sciences as well as international relations had distinguishable characteristics from nature in a qualitative sense. Hence, they regarded the interpretative methods as an indispensable place on the way to develop IR as a new social discipline. Moreover, while Traditionalists argued that a normative analysis was needed by all theories that demand to understand international relations, Behavioralist regarded it as an important obstacle on the progress of the discipline (Tanrısever).

In 1966, IR scholars witnessed the debate between Hedley Bull and Morton Kaplan; the foremost representatives of Behavioralist and Traditionalist camps. Bull characterized these two approaches as the classical and scientific approaches in his prominent article "International Theory: The Case for a Classical Approach" (1966). After this polemical essay, as a reply to Bull's writings, Morton Kaplan wrote the article; "The New Great Debate: Traditionalism vs. Science in International Relations" in the same journal of World Politics (1966). Griffiths argues that it is important to understand "Bull's distinction between tradition and science, and his claim that the latter is a threat to the former when its proponents seek to dispense with tradition as so much speculative 'wisdom literature'. This necessarily precludes the application of scientific methodological procedures in answering the questions central to theory as he conceived of it" (Griffits, 1992, pp. 144-145). Bull stated very clearly that by classical approach, he meant the theorizing that derives from philosophy, history and law. He also noted that if we continue ourselves to strict standards of verification and proof, there is very little of significance that can be said about international relations. On the other hand, Kaplan, in his response to Bull, noted that when one says that a system can be investigated by scientific methods; he/she does not mean that these systems can be analyzed by the procedures of physics. However, to him, "though theories, explanations, and tools used may differ from those of the physicist, they are part of the general arsenal of science. Just as mechanical and ultra stable systems differ, human psychological and human social and political systems also differ from each other." For Kaplan, it is the traditionalist arguments that caused confusion on the issue of these differences. He further argued that traditionalist did not only confuse the distinction between the facts of physical science along with the purposes of politics but they also confused the relationship between intuition and scientific knowledge. Kaplan also pointed

out that this confusion of traditionalists on the important issues of methodology led them to accuse the defenders of modern scientific approaches of using deterministic models, and mistake assertions about deductions of a model for statements about history (1966).

As discussed before, there has been quite a lot of discussion around Traditionalist and Behavioralist sides; however, neither it is possible to refer all of these arguments nor is it a necessary thing to do. Since all scholars, interested in the second debate of international relations make similar assertions, I preferred displaying only the conceptions of foremost thinkers of the Traditionalist and Behavioralist schools of thought. Tanrısever argues that because the polarization between Traditionalists and Behavioralist jeopardized the accumulation of knowledge in the discipline and caused the hardening of inter-disciplinary communication, both sides began to display a more conciliatory attitude against each other. Because both of them were inspired from a positivist science theory, there emerged a common mentality between the two sides of the argument that "the debate on search techniques must not threat the persistence of the discipline" (Tanrısever, pp. 111-114). This argument will be evaluated in detail in the conclusion part, however, here; it will be pertinent to state that this study shares the assertions of Tanrısever on this issue.

In 1969, Easton was informing about a new revolution that was under way in American political science which he preferred calling as the post-behavioral revolution. This new challenge was directed against the Behavioral approach and reflected a dissatisfaction of the efforts which aimed to convert the study of politics into a more rigorously scientific discipline using the methodology of the natural sciences (1969). Four years later than Easton's study, Beardsley supported the idea in his article "A Critique of Post-Behavioralism" that this latest challenge to Behavioralism was seriously inadequate as a rationale for social problem-oriented research, and therefore, political scientists should look elsewhere for philosophical support. For Beardsley, Easton's doctrine of post-behavioralism was based on the assumption that we must choose between "science" and "relevance" which he regarded as having no difference from the conventional Behavioralist position. To him, the only difference was that while Eastonian post-Behavioralists believed that science must occasionally be "sacrificed", the Behavioralists argued that it should not be "sacrificed" in any case (1977, pp. 97-98).

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While the majority of the scholars of the era named this period as post-Behavioralism; Lapid contends that the "third debate" in the field of IR constitutes a "post-positivist" era. For him, "the task" of the third debate was neither the discovery of some *ahistorical* and universal scientific method nor the attainment of some objectively validated truth about world politics but "it was rather a matter of promoting a more reflexive intellectual environment in which debate, criticism, and novelty can freely circulate" (1989). Jackson and Sorenson list these post-positivist approaches as critical theory, postmodernism, constructivism and normative theory and according to their interpretations, main difference of critical theorists and postmodernists from positivists is that they reject the possibility of academic detachment and objectivity. Moreover, while on the one hand, constructivists contend that the social and political world is not physical entity or material object that is outside human consciousness, on the other hand, normative theorists are content to preserve, transmit and augment the classical political theory of international relations. In am manner of speaking, this debate may be regarded as the continuation of Traditionalist-Behavioralist debate. However, post-positivists are not only against the idea of the need for empirical and observable data, they, in general, also hold that there is no objective way of interpreting international relations which cannot only be studied on a material context. Rather, normative issues should also be taken into consideration in the study of international relations.

So far, I have provided an introduction to the main scientific approaches of social sciences and International Relations along with their fundamental assumptions, and hereafter, these approaches which do not share the assumptions of the scientific camp will be analyzed in detail under the following title.

2.2. A Counter Argument: The Reflectivist Approach

Chernoff argues that there exist three important ways in which philosophers of social science and IR theorists have argued that the natural science analogy does not apply. These ways also explain why IR should be regarded as something radically different from any of the natural sciences. He lists the three approaches as interpretive constructivism,

poststructuralism, and Frankfurt School Critical Theory. To him, each of these theories or approaches is distinct from the others; however, they meet on a common ground on their criticism to the scientific approach. All three of these reflectivist theories, for instance, argue that the study of language provides a better model and a source of theoretical grounding. Further, they all share the "critical theory" idea that theories of the social world are not merely neutral descriptions of the way social actors. They also say that the nature of the subject matter of the social sciences in general and IR in particular, is so different from that of the natural sciences that a completely different sort of method is needed. As Chernoff points out, while Wendt refers to these anti-naturalist theories as "critical" theories, Keohane and Martin use the term "reflectivist theories" (Chernoff, 2007).

"The reflectivist label was introduced by Keohane to cover a diverse group of authors who shared a more historical or sociological approach to the study of institutions, with an emphasis on the informal sides of institutions: practices and norms, peoples' understandings and discourses" (Hansen, pp. 30-31). Hansen argues that particularly three branches of reflectivist approaches have an interesting insight when studying international institutions, namely, poststructuralism, the English School and constructivism. However, Keohane, one of the most prominent theorists who deeply analyzed reflectivist theories, does not recognize the latter approach which, according to him, displays the American habit of overlooking non-American IR. Hansen points out that poststructuralism is the most "radical" of these above-mentioned approaches since it emphasizes that *there is nothing beyond discourse* (emphasis added) and objects are only constituted as objects within a discourse. As Hansen points out, the defenders of this approach disagree with rationalism on the questions of ontology, epistemology and methodology. To Hansen, the English School which has a more historical approach was another reflectivist approach. The English School theorists argued that the main concept of their theory, namely, international society is mostly established by dialogue and consent, common rules and institutions for the conduct of their relations (Hansen).

The last reflectivist theory in Hansen's classification was constructivism whose most prominent theorist is Alexander Wendt although the term constructivism was first used by Onuf in relation to world politics. Wendt argues that the aforementioned critical IR

"theory" is not a single theory but rather, it is a family of theories that includes postmodernists, constructivists, neo-Marxists, feminists and others. "What unites them is a concern with how world politics is 'socially constructed' which involves two basic claims: that the fundamental structures of international politics are social rather than strictly material (a claim that opposes materialism), and that these structures shape actors' identities and interests, rather than just their behavior (a claim that opposes rationalism)" (1995, pp. 71-72.). In other words, constructivism argues that "international reality is socially constructed by cognitive structures that give meaning to the material world" (Adler, 1997, p. 319). Note that although Chernoff and Hansen present different aspects of reflectivist approach and give different names to label it, they both have some common ideas in describing the major characteristics of this approach.

Reflectivist theorists argue that we may not talk about an analogy between the natural and social sciences and one reason they give in order to support their argument is that the social sciences always involve *interpretation* while the natural sciences do not. Further, the natural sciences are based on scientists' ability to gather objective facts whereas in the social sciences, unlike in the natural sciences, the "facts" that are used to stimulate, test, and compare theories are fundamentally different and are not objective at all. *Interpretive theorists thus oppose the claim of objectivity in the scientific approach.* Interpretivists argue that facts are identified by constructed interpretations and there might be many good interpretations. They also hold that the lack of clear, uninterpreted facts make the identification of regularities among the facts impossible and to quantify the regularities which means that if there are no truly "observational terms", then there can be no clear distinction between observational and theoretical terms. As Dilthey pointed out, the way the objectivity is found in the natural sciences is fundamentally different from the way it is found in the social sciences. Reflectivist theorists, therefore, disagree with the application of a foundationalist theory of knowledge to the social sciences, since knowledge is developed in a circular and not linear way (Chernoff, 2007).

Reflectivist theorist further note that "the best we can do in studying the social world is to try to *understand* the behavior of leaders and states after the fact, and that can be best done by trying to devise a set of rules that will allow us to interpret the meanings of their

actions. Since the study of IR can provide a set of rules of grammar or syntax that can allow us to interpret actions most effectively, it also helps us understand the meanings of actions that cannot be well understood without the sort of careful study that produces interpretive frameworks (Chernoff, 2007, pp. 138-139). As Chernoff emphasizes, *one major difference* between naturalists and reflectivist theorists is the *role they give to "causation" in the social world*. "All of the reflectivist theorists stress on the crucial importance of drawing a sharp distinction between one event *causing* another, where the two can be described independently of one another, and one event description *constituting*, at least in part, another event. In a causal relationship, we can always describe the two events and imagine either event occurring without the other. There is then a crucial difference for reflectivist theorists between *constitutive* and *causal* relationships" (2007, p. 140). Reflectivists, thus, would object that the core idea of "causation" in the natural sciences should also be taken as a core idea in the social sciences.

According to Chernoff, a *second important difference* between naturalism and reflectivist theories in the social sciences *deals with "reflexivity."* To him, "the concept of reflexivity separates IR and the social sciences from the natural sciences by emphasizing that IR theory requires that people study the actions of people. That is, human beings are both studying and being studied. Many scholars agree that the study of IR is reflexive in the sense that the theories they develop might change the subject matter they are studying by affecting the decisions leaders make" (2007, pp. 140-141). A *third major difference* between rationalist and reflectivist theorists, especially poststructuralists, is the *emphasis on how we analyze language*. Scholars such as Lacan and Wittgenstein argue that "to learn a language is to learn a set of rules, which brings the learner into a specific view of the world, namely, the world created by those rules. This is because using the words and sentences of the language have effects in the real world; use of the language allows a person to do things" (2007, p. 157). A *fourth difference* is the above-mentioned poststructuralists' *emphasis on reflexivity*: "While traditional naturalist scholars pursue scientific-style IR and regard the object of their study as the real world of international politics, poststructuralists regard the object of their study as both the world of power politics and the academic world of theories that legitimize power politics" (2007, pp. 162-163). Moreover, reflectivist theorists argue that all theories, in one way or another, serve

political purposes. *A fifth difference*, therefore, is about the reflectivist belief that theorists *must be focused on choosing to acquire knowledge and produce theories that serve moral purposes* (2007, p. 164).

3. Conclusion

It is believed by the scientific approach which comprises of slightly different schools of though such as positivists, Behavioralists, logical positivists and/or logical empiricists that there is a methodological analogy between the natural and social sciences which makes the use of the same methods possible. This asserted analogy emphasizing observable events involves the use of statistics, experiment, measurement and quantitative methods. These theorists also believe that some characteristics of the natural science such as the necessity of verification, observation, explanation and prediction should be used as a guide to the scientific method in social sciences. According to this camp, the purpose of an International Relations theory is to explain the observables and in this manner, as the proponents of the reflectivist theory emphasizes, interpretation and reinterpretation of events are overlooked. However, the aim of social sciences is not to predict, nor it means that the unit of analysis in the social sciences may act in accord with a set of rules. Further, it is this abovementioned definition and characteristics of the scientific theory that arouses suspicion about the availability of using the natural sciences' methods in the different fields of social sciences.

Apart from those two important methodological debates that occupied the agenda of social sciences as well as international relations for long years, there are also some other sub-divisions in the discipline such as relativists who, in general, hold that some cultural or historical aspects are relative and thus objectivity and absolute truths are impossible to reach. For me, all of these debates seem not as a science versus non-science debate as some may claim, it is only a debate of methodology that searched different methods to analyze and explain international politics. Thereby, even to discuss the argument that "IR scholars should give up trying to create a science of international relations" would be a wrong attitude. Because by doing this, one also accepts that International Relations has not

become a scientific discipline yet. However, IR, as a discipline has always satisfied the qualities of being a science from the very beginning.

To me, these scientific approaches that I have listed so far did not provide much contribution to the International Relations discipline on epistemological concerns, but rather, they caused the emergence of a mentality that IR does not meet the requirements of science without the appliance of the methods of natural sciences. Sharing much of the ideas of the reflectivist camp, I find it quite impossible to employ the exact methods of natural sciences to social sciences and in particular, to international relations since not all the information is observable and measurable in politics or state affairs. Although positivist or Behavioralist attempt may seem a commitment to reach a "scientific" International Relations discipline, as I have discussed before, IR was already a scientific discipline since its emergence after the First World War. Moreover, the term "positivism" was an indispensable part of International Relations since its emergence as an independent discipline in the interwar period.

This study maintains that the scientific approach ignore the normative and cultural components of international relations. Those elements are not only an important and indispensable part of domestic politics which deeply affect state affairs but also a part of IR and there is no way to measure the impact of those factors on policy making. The scholars on the scientific camp also ignore the roles of identity, religion, and language together which constitutes the very essence of culture. Furthermore, they do not deal with the historical and cultural ties among states; for instance, they cannot explain why 500 British nuclear weapons are less threatening to the United States than 5 North Korean nuclear weapons. For Wendt, it is because the British are friends of the United States and the North Koreans are not, and amity or enmity is a function of shared understandings. Being one of the foremost constructivist theorists, Wendt also argues that even the Cold War was a structure of shared knowledge that governed great power relations for forty years, but once the two superpowers of the era stopped acting on this basis, it was "over". Therefore, not just the behavior itself, but why the states behave in certain ways are the necessary factors to be analyzed (1995). This assumption of Wendt is also a subject matter that is constantly ignored by the scientific scholars. Although the scientific approach

defends the analysis of the actors' motives or the causes of events, obviously, this does not mean that they do it by trying to understand those factors from "inside."

The analysis of William Tow on terrorist attacks of 11 September in his article "Apocalypse Forever? International Relations Implications of 11 September" supports my arguments. In this article, Tow argues that Behavioralists contend that we can measure how acts of terrorism influence the wider Islamic faith and those parts of the developing world that may have particular reason to oppose the West. According to him, focusing on observable phenomena, Behavioralism tends to obscure cultural and "non-linear" or unpredictable aspects of international relations. It would thus be hard put to answer such questions as how the feelings of resentment harbored by newer generations of poor and disenfranchised ethnic and religious minorities may translate into confrontation (2003). Behavioralists, by their obsession on measurable and observable data, cannot properly explain terrorism phenomenon and its global effects, because some issues of international relations should not be studied by an ignorance of historical and cultural backgrounds of the facts.

Although I am not in a position to deny the importance of using empirical data in explaining the dynamics of international relations, it is not solely the empirical variables that determine the foreign policy decisions of states; it is also psychological and moral aspects of the statehood or the wrong interpretation of the intentions of other states. The use of the scientific method and empirical studies in social sciences is absolutely a great necessity but the findings of this method do not indicate every aspect of reality. That is to say that while you can easily measure the military or economic capabilities of a state, there is no way to measure the intention of that state on using these capabilities. Here, what would be definitely wrong is to use only the methods of one camp and one camp only.

However, as Hollis and Smith so briefly displays, although in social sciences, the concept of positivism has often been used very loosely for any approach which applies scientific method to human affairs, current usage tends to be more precise. Here, the stress is on experience (on observation and testing) as the only way to justify claims to knowledge of the world, and hence on methods of verification as the key to the meaning of scientific

statements. When "positivism" is so construed, it is opposed to realism and insists that theory is a guide to prediction rather than a source of substantive hypotheses about what could not, even in principle, be observed. As they emphasize, it is the logical positivism that has a mentality of hard-headed empiricism. The empiricism here is not so tight that all theoretical terms and assumptions must refer directly to observables, but all substantive hypotheses must be able to be confirmed or falsified. Since only behavior can be observed and measured, only behavioral data can provide a proper scientific basis.

As contrary to the arguments of the scientific camp, Wendt rightly holds that there is no fundamental epistemological difference between the natural and social sciences. For him, these methodological arguments can only lead to the impoverishment of our collective efforts to make sense of international politics, and given the disciplinary dominance in IR of Explainers, to the professional marginalization of Understanders. Wendt tries to develop a distinction between Explanation and Understanding not in science vs. non-science sense, but rather, by asking different questions. He suggests that while Explainers ask "causal" questions (why and how?), Understanders ask "constitutive" ones (how possible? or what?). Wendt accepts that because of the ontological differences of natural and social worlds, we cannot study ideas in exactly the same way that we study physical facts. Furthermore, ideas are not the kinds of phenomena that are even indirectly observable. On the other hand, he contends that this occasion does not necessitates different epistemologies for the natural and social sciences since it is wrong to think that material conditions imply causal theorizing and ideas simply constitutive theorizing. Both kinds of stuff have both causal and constitutive effects. Indeed, some of the most important theories in the natural sciences are constitutive rather than causal: the double-helix model of DNA, the kinetic theory of heat and so on. Displaying an opposite attitude against the distinction of epistemologies in social and natural worlds, he simply argues that things get caused in society just as much as they get constituted in nature (1998).

In regarding International Relations discipline, scientific approach is not by itself adequate to analyze the dynamics of the international system. Consequently, in studying IR, a synthesis utilizing the findings of empirical studies but at the same time not ignoring the existence of unobservable data has to be reached. In other words, it must be our main

objective to develop an attitude of mind in social sciences that covers both observation and interpretation and also that attaches importance both to explanation and understanding of the facts. It is beyond any doubt that cooperation and reconciliation between these scientific and reflectivist camps may avoid the division among the scholars of international relations discipline and by uniting them on a common ground, it may contribute to the development of the discipline. Scholars of both scientific and reflectivist approach should act together to achieve such a unification.

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Evaluation of the EU in terms of Maastricht Criteria and the Theory of Optimum Currency Areas: A Panel Evidence

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Abstract

In this paper we investigate whether the European Monetary Union fulfills the well-known Maastricht criteria. In order to find an answer, descriptive and econometric analyses have been applied to the panel groups of EU-5 and EU-12 for the period of 1997-2009. Panel unit root tests developed by Levin, Lin, and Chu (2002); Im, Pesaran, and Shin (2003) and Fisher-type tests that use ADF and PP tests [Maddala and Wu (1999), Choi (2001) and Hadri (2000)] have been implemented to test the convergence among the member countries in terms of the Maastricht Criteria and panel cointegration tests introduced by Pedroni (1999, 2004) have been used to understand whether inflation and unemployment rates are cointegrated which is one of the conditions for the theory of optimum currency areas. Different panel groups are investigated so as to see the effect of the enlargement process of the EU.

1. Introduction

European Union (EU) is generally considered one of the most successful economic integrations of the century. However, following the enlargement periods there are numerous claims that even the members of the EU fail to satisfy the well-known Maastricht Criteria which constitute the economic criteria of the union and that the union is not a promising one in terms of the optimum currency area theory initially introduced by Mundell (1961), McKinnon (1963), and Kenen (1969). By bearing in mind the fact that the members of the EU should act in accordance with the common economic policies, one may see the necessity that the members would have similar economic climates.

European Central Bank (ECB), constructed in 1999, is the only institution directing and coordinating the monetary policy in Euro area. ECB and the central banks of the member states in the Euro area are together referred to as the *Eurosystem* which has been maintaining the coordination of monetary policies of the members since 1999.

Maastricht convergence criteria can be considered as the measures of readiness of the countries for joining European Monetary Union and thus for the adoption of the euro. The criteria are defined in the Treaty, known as the Maastricht Treaty, on European Union of 1992. The Maastricht criteria include five conditions which should be satisfied to get the full membership to the union:

- an inflation rate no more than 1.5 percentage points above the average of the three countries with the lowest inflation rates,
- nominal long-term interest rates not exceeding by more than 2 percentage points those for the three countries with the lowest inflation rates,
- no exchange rate realignment for the last two consecutive years,
- a government budget deficit not in excess of 3 percent of each country's GDP,
- a gross debt to GDP ratio that does not exceed 60 percent.

In the literature, there are many studies on this topic. Afxentiou (2000) concludes that the European Monetary Union uses the five Maastricht convergence criteria in order to satisfy a monetarily and fiscally stable environment and guarantee the membership in an economically integrated Europe. Polasek and Amplatz (2003) apply regime shift models and show that inflation rates and interest rates converge in the countries which are members of the Euopean Monetary Union. Lavrač (2004) claims that there are requirements concerning real convergence like catching-up in economic development or related structural and institutional adjustments together with Maastricht criteria. Soukiazis and Castro (2005) test for convergence using panel data approach in living standards, productivity, investment and unemployment among the countries which are also members of the European Union. To the findings, the Maastricht criteria cannot be ignored in the studies on growth because the criteria give rise to some restrictions in economic policy applications and institutional orientations. Saraçoğlu and Doğan (2005) investigated by

using panel data techniques whether the income levels of the member countries and candidates converge. They conclude that the member countries do not converge to their group average. However, according to their findings they converge to France which is chosen as a reference country.

There are vast number of papers that investigate both the member and candidate countries to find out whether they satisfy the abovementioned Maastricht criteria. Czech National Bank (2006) investigated the fulfillment of the Maastricht convergence criteria of the Czech Republic. Another good example is Kılıç, Cin and Lopcu (2006). They claim in their study that Turkey should decrease inflation rate and domestic debt rate in order to fulfill the Maastricht criteria. Another detailed paper on Maastricht convergence criteria is Lipinska (2008). Lipinska (2008) used a dynamic stochastic general equilibrium model of a two-sector small open economy in order to show how Maastricht convergence criteria modify optimal monetary policy. One of the most important results of this paper is that the Maastricht treaty sets restrictions on debt and deficit policy of the candidate countries. After the construction of the European Monetary Union, some researchers start to investigate whether it is possible for different countries to construct a currency union. For example, Azali *et al.* (2007) investigated whether there is convergence among the countries of the East Asian region (Malaysia, Thailand, Singapore, Indonesia, and the Philippines). They used the Maastricht criteria as a benchmark. According to their findings, the East Asian region fulfills the Maastricht criteria.

In the literature, there is also a good deal of studies concerning the trade-off between inflation and unemployment rates in the European Union. As known, a similar standard for inflation and unemployment rates in the member countries is of the requirements of the theory of optimum currency areas. For this reason, many researchers have investigated the aforementioned relationship in the European Union [see Calmfors (1998), Lundborg and Sacklén (2001, 2003), Hein (2002), Martin (2004), Grauve and Senegas (2004), Campolmi and Faia (2006), Karanassou, Sala, and Snower (2007)]. In these studies, member countries of the European Monetary Union are examined individually.

2. Data and Econometric Methodology

In panel data analysis, cross-section data are summed up within a time period (Baltagi; 2002). Inflation rates (percentage change in CPI, consumer price index), long run interest rates, government budget deficit/GDP ratio, gross debt/GDP ratio and unemployment rates are used in order to test the cointegration between inflation and unemployment rates. The properties of the data can be seen at table 1.

Table 1: Information about the Data Used in This Paper

Data	Period
Inflation Rate	*1997–2008*
Long Run Interest Rate	*1998–2009*
Budget Deficit/GDP	*1997–2007*
Debt/GDP	*2001–2006*
Countries	
EU-5	*France, Germany, Italy, Netherlands, and Spain*
EU-12	*Austria, Belgium, Finland, France, Germany, Greece, Italy, Ireland, Luxembourg, Netherlands, Portugal, and Spain*

The data is obtained from the World Bank Online and EUROSTAT Database. In this paper, two different panel groups (EU-5, EU-12) are constructed by using the data for 12 member countries.

2.1. Panel Unit Root Tests

Panel-based unit root tests are generally considered more powerful compared to those based on individual time series. These tests are simply multiple-series unit root tests which can be applied to panel data structures. In this study, panel unit root tests developed by Levin, Lin, and Chu (2002) and Im, Pesaran and Shin (2003) and Fisher-type tests which use ADF and PP tests [Maddala and Wu (1999); Choi (2001) and Hadri (2000)] have been

implemented to test the convergence among the member countries in terms of the Maastricht Criterion. The null hypothesis in this testing procedure is generally formulated as "unit root/non-stationarity" while Hadri's approach adopts the null of "no unit root/stationarity".

2.2. Panel Cointegration Tests

In this study, the procedure developed by Pedroni (1999, 2004) that consists of seven different tests is used. The null of "no cointegration" is tested against the alternative hypothesis. Pedroni has developed the critical values to test the models with an intercept or with an intercept and trend or without the trend and intercept.

3. Findings

Panel unit root and panel cointegration test results are shown in this subsection. The findings are classified as follows: panel unit root test results according to the average of the panel group, panel unit root test results according to the average of the reference country, and panel cointegration test results for inflation and unemployment rates. Findings are reported for both EU-12 and EU-5.

3.1. Findings According to the Deviation from the Group Average

Deviations from the group average are calculated for each series. To this end, in the first step, an average value for each country is computed. In the second step, panel group average is calculated and in the final step, deviations from the group average are calculated for each series. Group average values can be seen in table 2.

Table 2: Group Average

Data	Group Average
Inflation Rate (EU-12)	2.39
Inflation Rate (EU-5)	2.16
Budget Deficit/GDP (EU-12)	-0.76
Budget Deficit/GDP (EU-5)	-1.30
Long Run Interest Rate (EU-12)	4.48
Long Run Interest Rate (EU-5)	4.38
Government Debt/GDP (EU-12)	62.88
Government Debt/GDP (EU-5)	63.59

In table 3, panel unit root test results for inflation rates are shown. To the findings, while the country group EU-12 converge the group average, the country group EU-5 do not behave the same way.

Table 3: Panel Unit Root Test Results (Inflation Rate)

Inflation Rate, (EU-12)			
Unit Root Test	t-Statistic	Probability	Decision
Levin, Lin and Chu	-14.0294	0.0000	Stationarity
Im, Pesaran and Shin	-4.96903	0.0000	Stationarity
ADF-Fisher	61.2688	0.0000	Stationarity
PP- Fisher	47.2669	0.0031	Stationarity
Hadri	3.91899	0.0000	Non- Stationarity
Inflation Rate, (EU-5)			
Unit Root Test	t-Statistic	Probability	Decision
Levin, Lin and Chu	-1.61055	0.0536	Non-Stationarity
Im, Pesaran and Shin	-0.76682	0.2216	Non-Stationarity
ADF-Fisher	11.3191	0.3332	Non-Stationarity
PP- Fisher	6.49304	0.7723	Non-Stationarity
Hadri	2.60984	0.0045	Non- Stationarity

The panel groups converge to the group average as far as the budget deficit/GDP ratio is concerned.

Table 4: Panel Unit Root Test Results (Budget Deficit/GDP)

Budget Deficit/GDP, (EU-12)			
Unit Root Test	t-Statistic	Probability	Decision
Levin, Lin and Chu	-7.89795	0.0000	Stationarity
Im, Pesaran and Shin	-2.63641	0.0042	Stationarity
ADF-Fisher	51.6594	0.0009	Stationarity
PP- Fisher	48.6258	0.0021	Stationarity
Hadri	3.85498	0.0001	Non- Stationarity
Budget Deficit/GDP, (EU-5)			
Unit Root Test	t-Statistic	Probability	Decision
Levin, Lin and Chu	-7.08992	0.0000	Stationarity
Im, Pesaran and Shin	-3.09082	0.0010	Stationarity
ADF-Fisher	30.6840	0.0007	Stationarity
PP- Fisher	22.0815	0.0147	Stationarity
Hadri	3.72523	0.0001	Non- Stationarity

Neither EU-12 nor EU-5 converges to the group average when it comes to long run interest rates (see table 5).

Table 5: Panel Unit Root Test Results (Long Run Interest Rates)

Long Run Interest Rates, (EU-12)			
Unit Root Test	t-Statistic	Probability	Decision
Levin, Lin and Chu	0.94470	0.8276	Non-Stationarity
Im, Pesaran and Shin	1.05961	0.8553	Non-Stationarity
ADF-Fisher	10.8607	0.9900	Non-Stationarity
PP- Fisher	21.7363	0.5950	Non-Stationarity
Hadri	3.54784	0.0002	Non- Stationarity
Long Run Interest Rates, (EU-5)			
Unit Root Test	t-Statistic	Probability	Decision
Levin, Lin and Chu	0.82559	0.7955	Non-Stationarity

Im, Pesaran and Shin	*0.92206*	*0.8218*	*Non-Stationarity*
ADF-Fisher	*3.69250*	*0.9602*	*Non-Stationarity*
PP- Fisher	*5.02260*	*0.8897*	*Non-Stationarity*
Hadri	*2.64282*	*0.0041*	*Non- Stationarity*

A similar finding is obtained for government debt/GDP ratio. Neither EU-12 nor EU-5 countries converge to the group average (see table 6).

Table 6: Panel Unit Root Test Results (Government Debt/GDP)

Government Debt/GDP, (EU-12)			
Unit Root Test	*t-Statistic*	*Probability*	*Decision*
Levin, Lin and Chu	*-0.13191*	*0.4475*	*Non-Stationarity*
Im, Pesaran and Shin	*-0.68113*	*0.2479*	*Non-Stationarity*
ADF-Fisher	*37.9171*	*0.0354*	*Stationarity*
PP- Fisher	*17.4276*	*0.8299*	*Non-Stationarity*
Hadri	*5.35289*	*0.0000*	*Non- Stationarity*

Government Debt/GDP, (EU-5)			
Unit Root Test	*t-Statistic*	*Probability*	*Decision*
Levin, Lin and Chu	*0.02585*	*0.5103*	*Non-Stationarity*
Im, Pesaran and Shin	*-0.61728*	*0.2685*	*Non-Stationarity*
ADF-Fisher	*25.5363*	*0.0044*	*Stationarity*
PP- Fisher	*10.8248*	*0.3713*	*Non-Stationarity*
Hadri	*3.92537*	*0.0000*	*Non- Stationarity*

3.2. Findings According to the Deviation from the Average of the Reference Country

At this point, a reference country that has the appropriate fit to the Maastricht criteria is determined, and then deviations from this reference value are computed. (See table 7 for details).

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Table 7: Reference Country and its Average

Data	Reference Country, Average
Inflation Rate (EU-12)	Germany, 1.58
Inflation Rate (EU-5)	Germany, 1.58
Budget Deficit/GDP (EU-12)	Finland, 3.93
Budget Deficit/GDP (EU-5)	Netherlands, 0.32
Long Run Interest Rate (EU-12)	Germany, 4.21
Long Run Interest Rate (EU-5)	Germany, 4.21
Government Debt/GDP (EU-12)	Luxembourg, 4.25
Government Debt/GDP (EU-5)	Germany, 41.24

Panel unit root test results for inflation rates are shown at table 8. The findings suggest that the country group EU-12 converges to Germany, however the country group EU-5 does not.

Table 8: Panel Unit Root Test Results (Inflation Rate)

Inflation Rate, (EU-12)			
Unit Root Test	t-Statistic	Probability	Decision
Levin, Lin and Chu	-12.5257	0.0000	Stationarity
Im, Pesaran and Shin	-4.66106	0.0000	Stationarity
ADF-Fisher	60.7924	0.0000	Stationarity
PP- Fisher	51.2932	0.0010	Stationarity
Hadri	3.91686	0.0000	Non- Stationarity
Inflation Rate, (EU-5)			
Unit Root Test	t-Statistic	Probability	Decision
Levin, Lin and Chu	-1.61055	0.0536	Non- Stationarity
Im, Pesaran and Shin	-0.76682	0.2216	Non- Stationarity
ADF-Fisher	11.3191	0.3332	Non- Stationarity
PP- Fisher	6.49304	0.7723	Non- Stationarity
Hadri	2.60984	0.0045	Non- Stationarity

As seen at table 9, the country group EU-12 converges to Finland and the country group EU-5 converges to Netherlands.

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Table 9: Panel Unit Root Test Results (Budget Deficit/GDP)

Budget Deficit/GDP, (EU-12)			
Unit Root Test	t-Statistic	Probability	Decision
Levin, Lin and Chu	-13.6540	0.0000	Stationarity
Im, Pesaran and Shin	-3.20033	0.0007	Stationarity
ADF-Fisher	55.3037	0.0003	Stationarity
PP- Fisher	49.0137	0.0019	Stationarity
Hadri	3.33197	0.0004	Non- Stationarity
Budget Deficit/GDP, (EU-5)			
Unit Root Test	t-Statistic	Probability	Decision
Levin, Lin and Chu	-6.36419	0.0000	Stationarity
Im, Pesaran and Shin	-1.47050	0.0707	Non- Stationarity
ADF-Fisher	19.4289	0.0351	Stationarity
PP- Fisher	8.26491	0.6030	Non- Stationarity
Hadri	1.33320	0.0912	Stationarity

Long run interest rates in EU-12 and EU-5 do not converge to Germany (see table 10).

Table 10: Panel Unit Root Test Results (Long Run Interest Rate)

Long Run Interest Rate, (EU-12)			
Unit Root Test	t-Statistic	Probability	Decision
Levin, Lin and Chu	0.94470	0.8276	Non- Stationarity
Im, Pesaran and Shin	1.05961	0.8553	Non- Stationarity
ADF-Fisher	10.8607	0.9900	Non- Stationarity
PP- Fisher	21.7363	0.5950	Non- Stationarity
Hadri	3.54784	0.0002	Non- Stationarity
Long Run Interest Rate, (EU-5)			
Unit Root Test	t-Statistic	Probability	Decision
Levin, Lin and Chu	0.82559	0.7955	Non- Stationarity
Im, Pesaran and Shin	0.92206	0.8218	Non- Stationarity
ADF-Fisher	3.69250	0.9602	Non- Stationarity
PP- Fisher	5.02260	0.8897	Non- Stationarity
Hadri	2.64282	0.0041	Non- Stationarity

Country group EU-12 do not converge to Luxembourg and country group EU-5 do not converge to Germany so far as the government debt/GDP ratio is concerned (see table 11).

Table 11: Government Debt/GDP, Panel Unit Root Test (EU-12)

Government Debt/GDP, (EU-12)			
Unit Root Test	*t-Statistic*	*Probability*	*Decision*
Levin, Lin and Chu	*-0.13191*	*0.4475*	*Non- Stationarity*
Im, Pesaran and Shin	*-0.68113*	*0.2479*	*Non- Stationarity*
ADF-Fisher	*37.9171*	*0.0354*	*Stationarity*
PP- Fisher	*17.4276*	*0.8299*	*Non- Stationarity*
Hadri	*5.35289*	*0.0000*	*Non- Stationarity*
Government Debt/GDP, (EU-5)			
Unit Root Test	*t-Statistic*	*Probability*	*Decision*
Levin, Lin and Chu	*0.02585*	*0.5103*	*Non- Stationarity*
Im, Pesaran and Shin	*-0.61728*	*0.2685*	*Non- Stationarity*
ADF-Fisher	*25.5363*	*0.0044*	*Stationarity*
PP- Fisher	*10.8248*	*0.3713*	*Non- Stationarity*
Hadri	*3.92537*	*0.0000*	*Non- Stationarity*

3.3. Panel Cointegration Test Results

Inflation and unemployment rates for the period 1997-2007 are used. Panel unit root tests are applied for each series. Test results are summarized in table 12 for EU-12 and in table 13 for EU-5.

Table 12: Unit Root Test Results (EU-12)

Variable	*Unit Root Test*	*Level*		*First Difference*		*Decision*
		t-statistic	probability	t-statistic	probability	
Inflation Rate	Levin, Lin and Chu	-11.2470	0.0000			
	Im, Pesaran and Shin	-5.44004	0.0000			I(0)
	ADF-Fisher	74.7654	0.0000			
	PP-Fisher	56.9325	0.0002			
	Hadri	2.76472	0.0028			
Unemployment Rate	Levin, Lin and Chu	-3.21109	0.0007	-3.35316	0.0004	
	Im, Pesaran and Shin	-0.98615	0.1620	-1.04739	0.1475	
	ADF-Fisher	41.2475	0.0156	30.7872	0.1600	
	PP-Fisher	16.0097	0.8877	34.6261	0.0741	I(1)
	Hadri	3.86996	0.0001	1.53704	0.0621	

Table 13: Unit Root Test Results (EU-5)

Variable	Unit Root Test	Level		First Difference		Decision
		t-statistic	probability	t-statistic	probability	
Inflation Rate	Levin, Lin and Chu	-3.54327	0.0002	-6.58303	0.0000	I(1)
	Im, Pesaran and Shin	-1.41225	0.0789	-2.42639	0.0076	
	ADF-Fisher	16.9545	0.0754	24.7642	0.0058	
	PP-Fisher	10.9302	0.3630	24.7485	0.0058	
	Hadri	1.49725	0.0672	1.79202	0.0366	
Unemployment Rate	Levin, Lin and Chu	-2.67895	0.0037	-1.45138	0.0733	I(1)
	Im, Pesaran and Shin	-0.96674	0.1668	-0.47986	0.3157	
	ADF-Fisher	21.9280	0.0155	11.5323	0.3176	
	PP-Fisher	4.47656	0.9233	16.0713	0.0976	
	Hadri	2.65227	0.0040	1.25360	0.1050	

Panel cointegration test is not applicable to the group EU-12 due to the fact that the series are not integrated of the same order (see table 12). The finding for EU-5 is just the opposite. As shown in table 13, inflation and unemployment rates are integrated of order 1. For this reason, cointegration procedure is applicable to this group.

Table 14: Panel Cointegration Test Results (EU-5)

Cointegration Test Statistic	t-Statistic	Probability
Panel v-Statistic	0.592804	0.3347
Panel rho-Statistic	-0.601768	0.3329
Panel PP-Statistic	-0.985773	0.2454
Panel ADF-Statistic	-1.448670	0.1397
Group rho-Statistic	0.444037	0.3615
Group PP-Statistic	-0.475073	0.3564
Group ADF-Statistic	-1.014474	0.2385

Panel cointegration test results can be seen in table 14. According to the findings, the null of no-cointegration cannot be rejected.

4. Conclusion

The members of the European Monetary Union fulfill the Maastricht criteria to a large extent. However, their performance in monetary criteria is higher compared to the fiscal criteria. For this specific reason, a common fiscal policy may be a

preferable aim for the European Monetary Union to come one step closer to the full integration. In addition to these, one can claim that the European Monetary Union is still far away from fulfilling one of the most important criteria that would enable her to be an optimal currency area: inflation-unemployment trade-off is not similar in member countries. So, common monetary policy may give rise to asymmetric effects. A more detailed research is needed to assess the success and future performance of the European Monetary Union.

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Turkey's Competitiveness in Human Capital Intensive Products:
A Causality Analysis

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Abstract
Most countries in today's world tend to increase their specialization and competitiveness in human capital intensive products as they develop. This paper focuses on the long-run relationship and causality, in the sense of Granger's definition, between Turkey's human capital accumulation and international competitiveness in human capital intensive products. In order to do this, cointegration and Granger causality tests applied to the gathered education and trade data. As a result, we found significant long-run relationship and two-way causality between the series we considered. On the other hand, we found stronger evidence that trade competitiveness Granger causes human capital accumulation in Turkey.

1. Introduction

In today's information society, knowledge and the ability to absorb new technologies are seen as the engine of growth and development. In order to integrate these factors into economy, the most fundamental way for a country is to increase its human capital accumulation. By applying policies which will increase human capital accumulation; a country will increase its specialization in human capital intensive products which are high value-added goods and thus will have stronger exporting power in the international market. As a result, most countries in today's world tend to increase their specialization and competitiveness in human capital intensive products as they develop.

Human capital accumulation's effects on economy have been investigated in many studies, both theoretically and empirically. Solow (1956), Cass (1965) and Barro and Sala-i Martin (1995) and others constructed models those explain the positive relationship between human capital accumulation and growth. On the other hand, Findlay and Kierzkowski (1983) and Bond, Trask and Wang (2003) provided theoretical framework of human capital accumulation's effects on the patterns of trade between countries. These studies emphasized that the differences of human capital accumulation between countries determine the pattern of the trade and the country that has more human capital accumulation exports the human capital intensive products. Studies by Branson and Junz (1971), Baldwin (1971), Keesing (1966) and many others empirically tested this relationship and the results were consistent with the theory.

The objective of this paper is to analyze whether there is a long-run relationship and causality, in the sense of Granger's definition, between human capital accumulation and competitiveness in human capital intensive products in Turkey in 1985-2007 period. We used total enrollment in secondary education to measure human capital accumulation, and Balassa's (1979, 1989) well-known measure, Revealed Comparative Advantages (RCA) to measure Turkey's competitiveness in human capital intensive products. In order to analyze long-run relationship between the two series we used Johansen (1988) cointegration test. After we revealed the results, we investigated the causal relationship between the series using Granger (1969) causality tests. These tests can provide useful information on whether knowledge of past human capital stock investments improve short run forecasts of current and future movements in trading volume and competitiveness, and vice versa.

As a result, we found that Turkey has got remarkable progress in both human capital accumulation and competitiveness in human capital intensive products in the period we considered. Our econometric analysis showed that there is a statistically significant long-run equilibrium path in Turkey for competitiveness in human capital intensive products and human capital accumulation. In a similar manner, we also found that there is statistically significant Granger causality in both ways between the two time series. On the other hand, the results we found showed that there is stronger causal relationship from

trade competitiveness in human capital intensive products to human capital accumulation in Turkey.

The second section provides the motivation for the analysis through an examination of the relevant literature of human capital accumulation's effects on international trade and growth. The third section explains the empirical methodology that we used to analyze the relationship between the two series. Finally, we presented our empirical results in the fourth section.

2. Human Capital and International Trade

Human capital is defined as the stock of competences, knowledge and personality attributes embodied in the ability to perform labor so as to produce economic value. In general terms, human capital is a kind of investment that people make in themselves to enhance their economic productivity. Directly, it increases human qualities and skills for economic production and market exchange. Indirectly, it enlarges individuals' opportunity sets which give them new possibilities to enrich their lives. The concept of human capital includes activities such as schooling, computer training course, expenditures on medical care, a firm's expenditures on training its employees, scholarships for students and so on. However these activities do not generate a physical outcome, they make improvements on human such as increase of knowledge, skills and health conditions. These improvements make human more productive, hence, these activities can be named as investments on human. In the information society, the most fundamental factor of the production process is knowledge and technological accumulation, in other words, human capital. The most effective source of human capital accumulation is education (Becker, 1993). In the last decades, almost all countries increased their education expenditures due to obtain technological innovation and its absorption.

There are large number of studies on human capital and its effects on economy. While most of these studies focus on growth and development issues, there are many studies focus on human capital accumulation's effects on income distribution and international

trade as well. Since trade competitiveness is strongly related with growth, we will also review the related literature on growth and human capital association in our study.

Neoclassical growth theory developed by R. Solow and I. Swan in 1950s and Solow (1956), Cass (1965) and Barro and Sala-i Martin (1995) emphasized that the accumulation of physical capital and spending on education and health were seen as a drain on the accumulation of the productive assets. Neoclassical growth models show that as the capital stock increases, growth and economy slows down. Only technological progress keeps the economy growing, and it is exogenous to the system. In the same context, Eicher (1996) presented a model in which the rate of economic growth and movements in relative wage are sensitive to the interaction between accumulation of human capital and absorption of new technology.

Based on this theoretical background, Barro (2001), Psacharopoulos (1985), Mankiw, Romer and Weil (1992) and several others provided empirical support for the importance of human capital to economic growth in cross-sectional studies. In these studies, authors made empirical analysis on different countries in different periods, and the results were consistent with each other. For instance, evidence in support of the role of human capital for the case of Taiwan is found by Tallman and Wang (1994) who calculate that increase in the stock of human capital accounted for fully 45% of output growth over the considered period.

In a similar manner, the effect of human capital on Turkey's growth is empirically tested in several studies as well. Canpolat (2000) presented evidence on positive effects of human capital on growth. Çoban (2004) showed the long term relationship between human capital and growth. Serel and Masatçı (2005) found significant relationship and causality between the series in question. In their work, they investigated the causality between human capital and economic growth using cointegration and causality tests. As a result, they found that, in the long run human capital accumulation causes economic growth in Turkey.

Even though it's not common as growth, there are many studies in the context of human capital accumulation's effects on international trade. As we shall see, there has been

considerable work, both theoretically and empirically emphasizing international differences in labor quality and its effects on international trade.

Findlay and Kierzkowski (1983) presented theoretical background of the interaction between human capital and international trade. In their study, they constructed a model that incorporates the formation of human capital into the two-factor, two-good model of international trade with respect to Heckscher-Ohlin (H-O) theory. In order to establish their general equilibrium model, they considered the basic aspects of education and skill formation and differentiated the accumulation of human capital from physical capital by considering an environment in which education requires time, which impacts the decisions of finitely lived agents. In this context, they analyzed the effects on human capital with differentiating the labor force as skilled and unskilled labor and defining a product class called skill-intensive products. As a result, they found that if there are two economies with identical technology for goods and education there would be no possibility of trade. In other words, the differences of human capital accumulation between countries determine the pattern of the trade and the country that has more skilled labor force exports the skill-intensive products.

Bond, Trask and Wang (2003) developed a two-country endogenous growth model with accumulation of both physical and human capital. In their study, they analyzed the short and long-run determinants of the pattern of trade with respect to their endogenous growth model. They established the existence of balanced growth equilibria in which the static and dynamic version of H-O hypothesis hold true. On the other hand, they also showed the existence of unbalanced equilibria in which H-O hypothesis can be violated. They emphasized that if an open economy were to switch its investment toward human capital, it could adjust its output to produce more human capital intensive products and export more. Thus, this will result as increasing export specialization of the country in human capital intensive products.

The implications of the models explained above are consistent with the extensive empirical research on the role of human capital in the explaining patterns of comparative advantage. Branson and Junz (1971) tested the relationship between the share of exports to value

added in each sector of manufacturing industry and measures of human capital intensity. They found strong positive association between human capital intensity and exports. Baldwin (1971) classified the products which are subject to trade into six skill groups and showed that most of USA's human capital is accumulated in the exporting industries more than import-competing production industries. In his work, he empirically showed the positive correlation between net exports and average years of education in selected industries. On the other hand, he emphasized that the correlation is weakened by the large export surplus of USA in the agricultural sector, where educational requirements are low. He explained this result with the relatively abundant supply of land in the United States. Works by Keesing (1966) and several others have also confirmed the powerful influence of human capital in explaining trade.

In conclusion, as shown by many theoretical and empirical studies, a country's human capital accumulation has a positive effect on growth and trade competitiveness. In our study, we will test this relationship for Turkey's competitiveness in human capital intensive products.

3. Methodology

In this paper, our first purpose is to measure Turkey's competitiveness in human capital intensive products (will be denoted as HCIP from now on). After we reveal the results, we will move on to the next step and measure the long-run relationship and causality between human capital accumulation and competitiveness in HCIP.

In order to determine Turkey's competitiveness in HCIP, we used three-digit Standard International Trade Classification Revision.3 (SITC Rev.3) product classification. However this classification has detailed information on products' industry and materials used, it does not include factor intensity information. In their work, Hinloopen and van Marrewijk (2004, 2005) has provided a classification of SITC Rev.3 products in the factor intensity detail. Therefore, we used Turkey's trade data on the forty-three HCIP based upon this classification. For our analysis, we obtained Turkey's annual trade data for 1985-2007 period from United Nations Comtrade statistics database.

In order to calculate competitiveness, we used Balassa's (1979, 1989) well-known measure, Revealed Comparative Advantage (RCA-Balassa Index):

$$RCA_{xki} = \frac{X_{ki} / X_i}{X_{kw} / X_w} \qquad (1)$$

where, X_{ki} is the value of country i's exports of commodity k, and X_i is the value of country i's total exports in the same period. w denotes the world. The calculation of the index of RCA is based on the observed export data and it has a relatively simple interpretation. If a country's production structure matches that of the average of all other countries, then the index is equal to 1. An index greater than 1 reflects specialisation in that industry or vice versa. Higher value the RCA index takes, the country has stronger competitiveness in the international market. It should be noted that the Balassa index has no upper bound and the lower limit is 0.

After we reveal Turkey's competitiveness in HCIP by using RCA analysis, we will move on to the next step and measure the long-run relationship and causality between human capital accumulation and competitiveness in HCIP. Engle and Granger (1987) and Granger (1988) state that there is little need to pre-test the variables in the system to analyze long-run relationship and causality. One of these tests is to see whether the two series have cointegration between them or not. On the other hand, in order to calculate cointegration, both of the time series must be stationary (I(0)) or they must have same level process such as I(d). Therefore, unit root tests should be applied to the series to determine the processes they have. If two time series have the same level process we will be able to investigate long-run relationship and Granger causality between them.

As a result, we followed the econometric methodology that applied in several studies that measure long-run relationship and causality. This methodology includes three steps: (i) Augmented Dickey-Fuller unit root test (ADF), (ii) Johansen Cointegration test and finally (iii) Granger Causality test.

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In order to calculate whether the series have the same process or not, we used ADF test presented by Dickey and Fuller (1979). This test relies on a null hypothesis of non-stationary process for each variable with the following model:

$$\Delta x_t = \mu + \lambda x_{t-1} + \sum_{i=1}^{p} \alpha_i \Delta x_{t-i} + u_i \tag{2}$$

where the null hypothesis is $\lambda = 0$. If we cannot reject the null hypothesis, this will mean that the series has unit root and thus non-stationary. In our analysis we used Schwartz Information Criterion (SIC) to determine the lags.

After we calculate the unit roots with ADF test, we will investigate if there is a cointegrated vector between the two series. We used Johansen's (1988) method with the following models:

$$J_{trace} = -T \sum_{i=r+1}^{n} \ln(1 - \hat{\lambda}_i) \tag{3a}$$

$$J_{max} = -T \ln(1 - \hat{\lambda}_{r+1}) \tag{3b}$$

where T is the sample size and $\hat{\lambda}_i$ is the ith largest estimated eigenvalue. The trace test tests the null hypothesis of r cointegrating vectors against the alternative hypothesis of n cointegrating vectors. The maximum eigenvalue test, on the other hand, tests the null hypothesis of r cointegrating vectors against the alternative hypothesis of $r+1$ cointegrating vectors. If we find a cointegrated vector between the two variables, this will mean that there is a long-run equilibrium path between the series.

Finally, after we determine the unit roots and long-run equilibrium path between the two series, we will investigate if there is Granger causality between them. The notion of Granger causality is based on a criterion of incremental forecasting value. A variable X is said to "Granger cause" another variable Y, if "Y can be predicted from the past of X and Y together than the past of Y alone" (Pierce, 1977). Granger (1969) approaches to the question of whether x causes y to see how much of the current y can be explained by past values y and then to see whether adding lagged values of x can improve the explanation. y is said to be Granger-caused by x if x helps in the prediction of y, or equivalently if the

coefficients on the lagged x's are statistically significant. We used following two models to measure Granger causality:

$$\Delta X_t = \alpha_x + \sum_{i=1}^{k} \beta_{xi} \Delta X_{t-i} + \sum_{i=1}^{k} \gamma_{xi} \Delta Y_{t-i} + \varepsilon_{xt} \tag{4a}$$

$$\Delta Y_t = \alpha_y + \sum_{i=1}^{k} \beta_{yi} \Delta Y_{t-i} + \sum_{i=1}^{k} \gamma_{yi} \Delta X_{t-i} + u_{yt} \tag{4b}$$

for all possible pairs of (x,y) series in the group. We calculated the F-statistics for the joint hypothesis $\sum_{i=1}^{k} \gamma_{xi} = 0$ and $\sum_{i=1}^{k} \gamma_{yi} = 0$. The null hypothesis states that y does not Granger-cause x in the first model and x does not Granger-cause y in the second model. As a result, one can find no evidence of Granger causality or one-way or two-way Granger causality between the two time series.

4. Empirical Results

In this paper, we analyzed the causal relationship between Turkey's competitiveness in HCIP and human capital accumulation in Turkey based on education policies with the methods explained in previous section. First, we will review Turkey's performance in human capital accumulation based on observed educational data, second, we will calculate Turkey's competitiveness in HCIP and finally we will apply econometric analysis to the calculated results to find out causal relationship between the two series.

In order to determine Turkey's human capital accumulation, we used total students enrolled in secondary education which includes vocational and technical schools and high schools. This approach is used as representation of human capital accumulation in many studies such as Mankiw, Romer and Weil (1992) and Serel and Masatçı (2005). Mankiw, Romer and Weil (1992) states that individuals who attend secondary education are people who can work instead. The reason that people continue their education is that they want to increase their knowledge and skills, thus, have a higher income in the future. Therefore, these individuals are investing their human capital by continuing their education instead of

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working. We obtained the relevant enrollment data from Turkish Statistical Institute's (TÜİK) Statistical Indicators 1923-2008 report.

As we analyze the enrollment data, we can see that Turkey has got appreciable progress in human capital accumulation in the last two decades. Turkish Statistical Institute's Statistical Indicators 1923-2008 Report shows that total number of students enrolled in the secondary education has risen from 1.244.661 to 3.245.322 which means 160.7% increase in 1985-2007 period. Turkey has also got relatively high schooling ratios in primary education with 96.2% and in secondary education with 86.6% by the year of 2007. Despite the recent improvements in enrollment rates at all levels of education in Turkey, these rates are still lagging behind the OECD and EU averages. Therefore Turkey seems to continue applying policies to improve education in the manner of increasing human capital accumulation. 2010 Annual Programme of T.R. Prime Ministry State Planning Organization (DPT) states that measures will be taken in order to reduce drop-outs in primary and secondary education. In a similar manner, it has been stated that secondary education system will be modified into a flexible structure and improvements will be made to establish a more modular and flexible system in vocational and technical education.

Our analysis of competitiveness is based on Balassa's RCA measure which is described in the third section. Equation 1 applied to the annual export data of Turkey in 1985-2007 period. As a result, we found that Turkey has got remarkable progress in HCIP in the matter of competitiveness. When we look at the general picture, we can see that Turkey had RCA indexes higher than 1 -which means that she has comparative advantage in the international market- in 13 HCIP in 1985. This number increased to 21 by the year of 2007. Turkey's total exports in HCIP were 1,34 billion $ in 1985, in 2007 this value was 36,85 billion $ with an increase of 2678%. In a similar manner, the share of HCIP in Turkey's total exports increased from 17% to 34% during the period we considered.

In detailed analysis, we found that Turkey almost always got strong exporting power in industries such as iron or steel ingots and other primary forms of iron or steel (SITC 672), wire products (SITC 693), household equipment of base metal (SITC 697), TV receivers (SITC 761) and road motor vehicles (SITC 783). On the other hand, Turkey showed

appreciable performance in many products that she didn't have comparative advantage in the past, but now she has. Articles of rubber (SITC 629), motor cars and other motor vehicles principally designed for the transport of persons and goods (SITC 781 and 782), jewellery, goldsmiths' and silversmiths' wares (SITC 897) and parts and accessories for tractors, motor cars and other motor vehicles (SITC 784) can be showed as examples of the industries that Turkey has got comparative advantage in the period we analyzed. Detailed results of competitiveness analysis can be seen from Table 5 in Appendix 2.

In order to start our econometric analysis to find out the long-run relationship and Granger causality between the two series, first we will test whether the series have the same level process or not. In this context, we used Dickey-Fuller's ADF unit root test explained in the third section. The model presented in equation 2 applied to the competitiveness and enrollment data. As a measure of Turkey's competitiveness in HCIP we used the average mean of RCA indexes -calculated by equation 1- of forty-three HCIP for each year in 1985-2007 period. Using average mean of RCA indexes represents the average competitiveness and exporting power of Turkey for all industries those produce HCIP. Table 1 shows the results of ADF unit root tests for the two time series.

Table 1. Augmented Dickey-Fuller Unit Root Test Results

Variable	Level		First Lag		Result
	t-Statistic	Prob.[1]	t-Statistic	Prob.[1]	
lrca	-1.001	0.7339	-5.849	0.0001*	I(1)
lhc	-1.293	0.6138	-4.616	0.0018*	I(1)

1 MacKinnon (1996) one-sided p-values.
* Indicates 1% significance level

In our analysis, we used natural logarithms of both average mean of RCA (*lrca*) and human capital accumulation (*lhc*) data. From Table 1, we can see that both series are non-stationary in their levels. On the other hand, when we take the first lags of variables, we can reject the null hypothesis that the variables are non-stationary at %1 significance level, which means that both series are I(1). Engle and Granger (1987) states that if both series are stationary in the same level such as I(*d*), one can investigate the long-run relationship between them. Since we calculated that the time series we analyze are both I(1), we can move further analysis.

After showing that the series are I(1), now we are able to analyze whether there is a long-run relationship between human capital accumulation and competitiveness. In order to do this, we applied Johansen cointegration test which is explained in the third section by using models in equations 3a and 3b. Results of this test can be seen from Table 2.

Table 2. Johansen Cointegration Test Results

Eigenvalue	Trace test	p-value	Max test	p-value	H_0	H_1
0.50876	16.783	0.0301**	15.638	0.0280**	r=0	r≥1
0.050705	11.448	0.2846	11.448	0.2846	r=1	r≥2

** Indicates 5% significance level

Table 2 shows that we reject the null hypothesis of there are no cointegrating vectors for the two time series at the 5% significance level. On the other hand we fail to reject that there is more than one cointegrating vector at the 5% significance level. Therefore there is one cointegrating vector for the time series we analyze. As a result, we can say that there is a combined long-run equilibrium path in Turkey for competitiveness in HCIP and human capital accumulation.

Finally, we investigated whether there is a causal relationship, in the sense of Granger's definition, between human capital accumulation and international competitiveness of Turkey in HCIP. Granger causality test can provide useful information on whether knowledge of past trading volume and competitiveness in HCIP improve short run forecasts of current and future movements in human capital accumulation, and *vice versa*. In order to analyze this relationship we used Granger causality test which we explained in the third section by using models in equations 4a and 4b. The results of Granger causality test can be seen from Table 3.

Table 3. Granger Causality Test Results

Null Hypothesis:	F-Statistic	Prob.
LHC does not Granger Cause LRCA	4.84457	0.0403**
LRCA does not Granger Cause LHC	9.89602	0.0053*

* Indicates 1% significance level
** Indicates 5% significance level

Table 3 shows that there is statistically significant Granger causality in both ways between competitiveness in HCIP and human capital accumulation in the %5 significance level.

When we analyze the results, we can see that human capital accumulation Granger causes trade competitiveness in the 5% significance level. On the other hand, trade competitiveness in HCIP Granger causes human capital accumulation in the 1% significance level. In the same significance level, we fail to reject that human capital accumulation Granger causes trade competitiveness. Therefore, we can say that there is stronger causal relationship from trade competitiveness in HCIP to human capital accumulation in Turkey. In other words, trade competitiveness' current and past values provide stronger evidence to forecast future values of human capital accumulation. As a reason for this, we can say that as the industries those produce HCIP increase their investments and thus the competitiveness of Turkey increases, demand for skilled individuals with relatively high wages will increase as well. This causes more individuals tend to invest on their human capital in the future. Therefore human capital accumulation increases in the future by the increase of trade competitiveness in current period.

5. Conclusion

This paper examines whether there is a long-run relationship and Granger causality between human capital accumulation and competitiveness in human capital intensive products in Turkey for 1985-2007 period.

We found consistent results with the theoretical framework and previous empirical studies which examines the relationship between human capital accumulation and its effects on international trade patterns. We empirically showed that there is a statistically significant long-run equilibrium path in Turkey for competitiveness in human capital intensive products and human capital accumulation. In a similar manner, we also found that there is statistically significant Granger causality in both ways between the two time series. On the other hand, the results we found showed that there is stronger causal relationship from trade competitiveness in human capital intensive products to human capital accumulation in Turkey. Therefore, Turkey should continue her investments in the industries those produce human capital intensive products, which will lead human capital accumulation increase in following periods. In a similar manner, Turkey can obtain stronger exporting

power in human capital intensive products in the following periods by applying education policies to increase her skilled-labor force.

We are aware of the limitations of the period that we considered. The main reason for this is unavailability of detailed trade data for Turkey; since education data is provided annually we could not extend the time series' frequency as well. On the other hand, we believe that this study is consistent with the main tendency in the extensive field that studies human capital accumulation's effects on international trade patterns. Despite the relationship between human capital accumulation and growth have been investigated by many studies for Turkey, human capital accumulation's effects on international trade have not empirically tested by any studies. In other words, this study presents a general picture of this relationship for Turkey example. We believe that the results of this study can be strengthened by applying cross-sectional country and industry analysis to the series we considered.

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United Nations, UN Comtrade, United Nations Commodity Trade Statistics Database http://comtrade.un.org/db/

Appendix 1

Table 4. List of Human Capital Intensive Products with SITC Rev.3 Codes

SITC code	Product Description
531	Synthetic Organic Coloring Matter And Color Lakes And Preparations Based Thereon
532	Dyeing And Tanning Extracts, And Synthetic Tanning Materials
533	Pigments, Paints, Varnishes And Related Materials
551	Essential Oils, Perfume And Flavor Materials
553	Perfumery, Cosmetics, Or Toilet Preparations, Excluding Soaps
554	Soap, Cleansing And Polishing Preparations
621	Materials Of Rubber, Including Pastes, Plates, Sheets, Rods, Thread, Tubes, Etc.
625	Rubber Tires, Interchangeable Tire Treads, Tire Flaps And Inner Tubes For Wheels Of All Kinds
629	Articles Of Rubber, N.E.S.
641	Paper And Paperboard
642	Paper And Paperboard, Cut To Size Or Shape, And Articles Of Paper Or Paperboard
672	Iron Or Steel Ingots And Other Primary Forms, And Semi finished Products Of Iron Or Steel
673	Iron Or Nonalloy Steel Flat-Rolled Products, Not Clad, Plated Or Coated
674	Iron And Nonalloy Steel Flat-Rolled Products, Clad, Plated Or Coated
675	Alloy Steel Flat-Rolled Products
676	Iron And Steel Bars, Rods, Angles, Shapes And Sections, Including Sheet Piling
677	Iron And Steel Rails And Railway Track Construction Material
678	Iron And Steel Wire
679	Iron And Steel Tubes, Pipes And Hollow Profiles, Fittings For Tubes And Pipes
691	Metal Structures And Parts, N.E.S., Of Iron, Steel Or Aluminum
692	Metal Containers For Storage Or Transport
693	Wire Products (Excluding Insulated Electrical Wiring) And Fencing Grills
694	Nails, Screws, Nuts, Bolts, Rivets And Similar Articles, Of Iron, Steel, Copper Or Aluminum
695	Tools For Use In The Hand Or In Machines
696	Cutlery
697	Household Equipment Of Base Metal, N.E.S.
699	Manufactures Of Base Metal, N.E.S.
761	Tv Receivers (Including Video Monitors & Projectors) Wheth R Nt Incorp Radiobroadcast Receivers Or Sound Or Video Recording Or Reproducing Apparatus
762	Radio-Broadcast Receivers, Whether Or Not Incorporating Sound Recording Or Reproducing Apparatus Or A Clock
763	Sound Recorders Or Reproducers; Television Image And Sound Recorders Or Reproducers
781	Motor Cars And Other Motor Vehicles Principally Designed For The Transport Of Persons (Not Public Transport), Including Station Wagons And Racing Cars
782	Motor Vehicles For The Transport Of Goods And Special Purpose Motor Vehicles
783	Road Motor Vehicles, N.E.S.
784	Parts And Accessories For Tractors, Motor Cars And Other Motor Vehicles, Trucks, Public-Transport Vehicles And Road Motor Vehicles N.E.S.
785	Motorcycles (Including Mopeds) And Cycles, Motorized And Not Motorized; Invalid Carriages
786	Trailers - Semi-Trailers; Other Vehicles, Not Mechanically Propelled; Specially Designed - Equipped Transport Containers
791	Railway Vehicles (Including Hover trains) And Associated Equipment
885	Watches And Clocks
892	Printed Matter
896	Works Of Art, Collectors' Pieces And Antiques
897	Jewelry, Goldsmiths' And Silversmiths' Wares, And Other Articles Of Precious Or Semiprecious Materials, N.E.S.
898	Musical Instruments, Parts And Accessories Thereof; Records, Tapes And Other Sound Or Similar Recordings
899	Miscellaneous Manufactured Articles, N.E.S.

Source: Hinloopen-Marrewijk: ETA center; Factor Intensity.
http://www2.econ.uu.nl/users/marrewijk/eta/intensity.htm (accessed on 20 November 2009)

Appendix 2

Table 5. List of Turkey's RCA Indexes for Human Capital Intensive Products in 1985-2007 period

	1985	1990	1995	2000	2007
531	0.663	0.175	0.067	0.216	0.291
532	0.248	3.715	2.897	3.699	3.793
533	0.906	0.210	0.447	0.573	0.734
551	1.057	0.523	0.376	0.431	0.230
553	0.049	0.094	0.216	0.558	0.697
554	1.028	3.634	3.805	3.726	2.094
621	0.477	0.636	0.955	1.485	2.010
625	1.179	0.814	2.264	2.317	1.866
629	N/A	N/A	0.510	1.074	2.006
641	0.102	0.153	0.245	0.152	0.227
642	0.862	0.510	0.416	0.860	1.647
672	4.040	5.619	9.480	4.159	2.843
673	6.082	9.348	0.632	1.665	0.859
674	1.512	0.824	0.232	0.547	0.771
675	0.809	N/A	0.011	0.031	0.182
676	0.008	0.013	9.622	9.607	8.841
677	0.500	0.887	0.008	0.022	0.094
678	1.820	2.278	0.894	1.154	1.136
679	0.054	0.408	2.354	2.500	2.022
691	0.577	0.320	1.117	1.625	2.694
692	1.579	0.488	0.641	1.148	2.011
693	0.536	3.036	2.037	4.807	3.878
694	1.461	0.723	0.561	0.697	0.813
695	1.114	0.121	0.225	0.329	0.318
696	2.503	0.840	0.337	0.213	0.451
697	1.480	1.570	2.059	2.872	3.109
699	0.989	0.228	0.512	0.660	1.062
761	0.069	3.063	1.997	6.253	3.489
762	0.001	0.397	0.008	0.005	0.017
763	0.004	0.005	0.002	0.008	0.102
781	0.026	0.058	0.237	0.441	1.356
782	0.011	0.088	0.207	0.334	4.164
783	1.685	0.741	1.877	3.553	4.842
784	0.303	0.177	0.358	0.690	1.086
785	0.010	0.043	0.244	0.223	0.205
786	0.505	0.090	2.121	0.771	0.958
791	N/A	0.005	0.112	0.080	0.055
885	0.033	0.016	0.011	0.047	0.053
892	0.548	0.084	0.135	0.205	0.270
896	0.001	0.001	0.009	0.340	0.005
897	0.063	0.105	0.760	3.749	3.431
898	0.348	0.504	0.625	0.121	0.075
899	0.534	0.218	0.288	0.361	0.336

Source: Author's own calculations based on UN Comtrade data

Sacrifice Ratio in Turkey

An Empirical Study of the Change in Inflation and Production Loss

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Abstract
This paper investigates the impact of the percentage change in inflation on the cost of production loss. A sacrifice ratio measures the costs associated with slowing down economic output to change inflationary trends. In other words, it is a ratio which gives us the elasticity of production and inflation. I examine how the disinflation period affects Turkey's economic output. I analyze whether economic policies applied to Turkish economy influences production loss in order to lower the inflation rate. My empirical findings demonstrate that there is no significant loss of output within the disinflation periods for Turkey.

1. Introduction

The output-inflation trade off has been a major controversial subject throughout years. Considerable differences exist between economists over the real costs of disinflation. Many discussion regarding disinflation policies involve the speed of disinflation, gradualism, and the flexibility of wage setting institutions.

New classical economists and monetarists share the view that inflation is a monetary phenomenon generated by excessive monetary growth. However, Keynesian economists consider that given gradual price adjustments, a deflationary impulse will inevitably lead to significant real losses which can be prolonged by hysteresis effects, that is, where a recession causes the natural rate of unemployment to increase (Gordon, 1988). Furthermore, new Keynesians estimate that a reduction in average inflation from 10

percent to 5 percent substantially alters short-run impact of aggregate demand (Ball, Mankiw and Romer, 1988).

The amount of lost output that an economy endures in order to reduce inflation is known as the "sacrifice ratio". This economic ratio measures the costs associated with slowing down economic output to change inflationary trends. Inflation damages the economic well-being of the society. High inflation and macroeconomic instability are correlated with less rapid growth of average income and lower equality (Romer, 1999).

The purpose of this paper is whether disinflation policies applied over 30 years in Turkey affect the gross domestic product, GDP. The second section following the introduction is the existing literature. The third section is the brief description of the data. The fourth part is the empirical study that involves the calculation and the results of sacrifice ratio. The fifth part concludes.

2. Literature

There are increasingly empirical studies over the discussion of output inflation tradeoff. Regarding the efficiency of disinflation policies, necessary researches have conducted in this area to reach the best efficient calculation of the sacrifice ratio. Ball (1993) developed a method for estimating the sacrifice ratio in individual disinflation episodes, and applied it to 65 countries in moderate-inflation OECD countries.

It cannot be seen the effects of policy changes in a single Philips curve equation. Lack of time variation in a traditional Philips curve, the Ball's method allows us to analyze how sacrifice ratio vary over time and for different conditions. He reached two general results: First, the sacrifice ratio is decreasing in the speed of disinflation, that is, gradualism makes disinflation more expensive. Second, the ratio is lower in countries with more flexible labor contracts. He also examined the effects of initial inflation, income policies and the openness of the economy that results ranged from negative to inconclusive.

Ball's study is based on three assumptions:

1. Output is at its trend or natural levels at the start of disinflation episode – at the inflation peak.
2. Output is at its trend level four quarters after the end of an episode.
3. Trend output grows log-linearly between the two points when actual and trend output are equal.

Ball identified disinflation episodes in which trend inflation falls substantially and defined trend inflation as a centered, nine quarter moving average of actual inflation. The sacrifice ratio is defined as the total deviation in output from its trend over the change in the trend inflation. Nevertheless, in his conclusion, he suggested that future research should check the robustness of the results to variations in his assumptions. Some economists did not share the view that output return to its potential level.

Zhang (2001) investigated the robustness of sacrifice ratio estimates by questioning assumptions about the path taken by potential output. In particular, theoretical and empirical evidence suggest that persistence effects are stronger than assumed by Ball (1993). Thus, the assumption that output returns to its potential level four quarters after the end of an episode may understate the cost of disinflation episode.

Zhang modified Ball's method relaxing the assumption that output returns to its potential level four quarters after the trough. Instead, he used the Hodrick Prescott filter to predict potential output. There are four main conclusions: First, sacrifice ratios with long lived effects are larger than sacrifice ratios that do not account for long-lived effects. Second, The U.S. sacrifice ratio is comparable to ratios of average European countries when persistence effects are taken into account by his new method. Third, the negative relationship from both random and fixed effect models is supported by strong empirical evidence. Fourth, the adjusted sacrifice ratio for the U.S. is in the middle among G-7 countries. So, there is no significant negative relationship between the sacrifice ratio and nominal wage rigidity.

In both Zhang's (2001) and Ball's (1993) studies suggested that there is no hysteresis effects, which can be considered as very strong persistence effects. There is an empirical study that covers different approaches developed to measure the sacrifice ratio. In this research, Ball's and Zhang's techniques were modified to estimate potential output and a standard HP filter approach (Çetinkaya and Yavuz, 2002).

In this study, three disinflation episodes have chosen for analyzing the short run effects of disinflations ignoring any hysteresis effect. The first episode was the short period that followed the Gulf Crisis in 1991. The second episode was a recovery period from the 1994 economic crisis. The third disinflation episode was the only one where decline in inflation was a result of the implemented monetary policies.

There are two major problems with the sacrifice ratio calculated for Turkey: The first problem is the large fluctuations in the inflation data. With large changes in trend inflation a 2 or 3 percent loss in GDP end up with very small sacrifice ratio. In developed countries, as inflation rates are much lower, the calculated sacrifice ratios are more reasonable and comparable with each other. The second problem is associated with the nature of the disinflation periods. The implementation of a disinflation policy is usually associated with a tight monetary policy, which, in turn, brings about a contraction in aggregate demand. However, we know that, shifts in aggregate supply also have significant effects on inflation.

The problems mentioned above justified the small and negative sacrifice ratios found for Turkey. Çetinkaya and Yavuz (2002) have found only two positive sacrifice ratios in the (3 x 3) matrix of 3 episodes and 3 techniques. But they are too small to be compared with each other or with the ones in other countries. Analysis of output losses in disinflations showed that, in Turkey disinflations are not characterized by huge losses in output and affected significantly by positive supply shocks.

In this paper, using HP filter approach, I have focused whether Turkey's disinflation policies affect the output inflation tradeoff.

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3. Data

For the inflation, I have used quarterly CPI Index with the base year of 1985, which is available from 1985 till today in quarterly format. I have composed an index from consumer prices with percentage change on the same period of the previous year to get rid of seasonality. (See Figure 1)

For the output, I have used the seasonally adjusted GDP with constant prices, which is available from 1985 till today in quarterly format. The data is measured in millions of US dollars. Inflation rates and GDP are obtained from the website of Organization for Economic and Co-operation and Development, OECD.

4. Empirical Study

My analysis is based on the impact of disinflation policies over the Turkey's GDP. Before this empirical examination, we should briefly explore Turkey's economic policies within 30 years. Although in pre – 1980, import substitution had dominated the Turkish economic policy, post 1980 period had introduced the liberalization episode. The short-term plans were the market stabilization, reducing the inflation and dealing with balance of payment problems. The long term plans were the privatization, the liberalization of foreign trade and the financial system liberalization. In this period of time, the flaw which had been made in conducting stabilization programs had inevitably led Turkey into financial crisis.

I have chosen three disinflation episodes which cover three financial crises in Turkey's 30 year disinflation period. Since Turkey had faced a chronic inflation within this period, it is expected that applied economic policies could be a remedy to this persistent process. The first episode is the period following the 1994 economic crisis. With the liberalization of capital movements in 1989, the speculative capital movements had made a mark on the world conjuncture. Besides the external instability, the volatility in public sector, in banking sector, in money market and in real economy had increased after this unregulated financial liberalization and had caused the 1994 economic crisis.

The second disinflation episode is the period which covers Turkey's shaking economy in 1999 and the financial crisis in 2001. Unfortunately, the stabilization program which was applied after 94-crisis was not a healing process, it contained restraining and parrying methods. The external crisis which had been realized in Asia and in Russia affect also Turkey's disinflation period.

The third disinflation episode is the period which involves the worst global economic crisis. After this global economic turmoil, the Central Bank had revised their inflation target and announced revised their disinflation policy. The authorities recognize that this adjustment carries potential risks such as leading to further deterioration of inflation expectations, undermining the credibility of the Central Bank, and increasing the inflation risk premium.

Table 1: Disinflation Episodes for Turkish Inflation Data

	Start	End	Duration	Trend Inflation Decline
Episode I	94 Q4	95 Q4	5 Quarters	107,51 points
Episode II	99 Q4	02 Q4	13 Quarters	102,86 points
Episode III	07 Q1	09 Q4	11 Quarters	9,23 points

The trend inflation declines for three disinflation episodes can be seen in Table 1. Turkey was dealing chronic high inflation which was the key factor of in Turkey's macroeconomic instability. As we can notice, stabilization programs had massive effects on disinflation periods. In the first two episodes, in order to get rid of high inflation rates, they attempted to realize huge inflation reductions by different stabilization programs and IMF Stand-By agreements.

For the first disinflation episode, following 1994 economic crisis, an economic recovery program called "5th April Decisions" had announced. This recovery program was supposed to deal with excessive speculative capital movements. As we can see, the program made it possible a huge decline in trend inflation. But this did not last so long.

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Turkey was handling great macroeconomic instability and this led inevitably to a new crisis period of time, which is the episode II for my study.

The second disinflation episode was one of the most problematic periods of Turkey. External crisis which had spread on all over the world and eventually had come to Turkey led the government to prepare a control program for high inflation. According to this program, the 50 percent target was set as an inflation target and a Stand-By agreement with IMF had signed. But unstable macroeconomic and political environment made it difficult to reduce inflation. At the end of 1999, a new exchange rate based stabilization program was put into effect. It had provided at first a surge in capital inflows and it was successful in reducing inflation with a considerable decline in interest rates and real exchange appreciation. Fragile banking sector was unable to continue with macroeconomic volatility. Thus, the stabilization program ended up in one of the most serious crises in Turkey's economic history in February 2001.

After the deepest crisis in 2001, a new program called "Transition to a Stronger Turkish Economy" was established. IMF had shown a considerable support. The main goal of economic policy is fighting inflation with tight fiscal targets, the introduction of floating exchange regime and structural reforms. The macroeconomic stabilization aspect of this new program was requiring a huge reduction in trend inflation. By 2002, the inflation rate would decline to single-digit levels. A tight and credible fiscal policy and a healthy financial system provided this successful decline in the post-2001 period.

For the third disinflation episode, the world has faced the most deepest and serious crisis in the world economic history. Unavoidably, Turkey was one of the countries exposed to enormous macroeconomic disorder. Fortunately, after 2001 crisis, the Turkish banking sector is in better shape. For this reason, the manufacturing and the industrial economy of Turkey had affected. The government has attempted to establish a program with IMF support. But the revision in inflation targeting was necessary after the post crisis period.

To measure the output gap, I have used the HP filter approach. I filtered the GDP data to obtain potential output. Subtracting the potential data from actual GDP data gives us the output gap. Different output gap is calculated for each disinflation episode. (See Figure 2)

Table 2: Results

	Trend Inflation Decline	Output Gap (% of GDP)	Sacrifice Ratio
Episode I	107,51	-1,14	-0,011
Episode II	102,86	0,18	0,002
Episode III	9,23	0,29	0,031

The results obtained from the calculation of sacrifice ratio technique have shown in Table 2. As we can see, there are no significant sacrifice ratios for each disinflation periods. For giant decline in trend inflation, the output gap for the first disinflation period is negative and has shown that there are no output losses despite enormous decline in trend inflation.

For the second and the third episode of disinflation, I have found positive sacrifice ratios due to positive output gaps, that are the cost associated with slowing down economic output with change in inflationary trends. In order to compare the 2001 and 2008 economic crises, we can prove that the recent economic crisis was the most intensive one in Turkish economic history over 30 years.

For the second disinflation period, one percent decline in trend inflation corresponds to 0.002 percent of output loss. But for the next episode, one percent decline in trend inflation signifies 0.03 percent of output loss. This examination shows us that whatever the time range is, the impact of recent global crisis had affected the Turkey's production loss more than any other crises.

5. Conclusion

Disinflation is a favorable and desirable economic policy, especially for developing countries. In general, the income distribution is disordered in countries which lived in a high chronic inflation periods. Low inflation can increase GDP per capita which leads to an increase in production and the income. The disequilibrium can end up. Full employment and growth can be granted.

The economic ratio to measure the cost associated with slowing down economic output to change inflationary trend has been calculated for three different disinflation episodes. My empirical findings have shown that there are no significant losses of output within the disinflation periods for Turkey. For the recovery program after 1994 crisis, that is the episode I, did not create an output loss. For the post disinflation period after 2001 crisis, there is an output loss due to the change in inflationary trends, but not in significant terms. For the recent disinflation episode, there is an output loss more than latest episodes. But there are too small to be taken into consideration.

Through economic policies covering institutional reforms and prudent macroeconomic policies in order to reduce the inflation could increase the economic well-being and facilitate the economic growth but unfortunately could not decrease the unemployment. It is very wrong debate that why the unemployment is not decreasing while we are facing an economic growth. The process of disinflation can lead a growth in the economy but could not reduce the unemployment.

This study can be expanded to the next level by investigating the relationship between unemployment rates and sacrifice ratios. Also, calculation of output inflation tradeoff can be developed for other developing and developed countries and could be compared.

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Disinflation Episode I

	Trend Inflation	Potential Output	Actual Output	Output Gap
Q4-1994	298,02	470113,6	455909,9	-14203,7
Q1-1995	201,60	475021,4	468704,8	-6316,6
Q2-1995	203,06	480995	477814,5	-3180,5
Q3-1995	195,70	487869,5	488397,6	528,1
Q4-1995	190,50	495448,4	491047,4	-4401

Total potential output during the episode	2409447,9
Total gap during the episode	-27573,7
Total gap as percentage of potential output	-1,14
Total decline in inflation	107,51
Sacrifice ratio	-0,011

Disinflation Episode II

	Trend Inflation	Potential Output	Actual Output	Output Gap
Q4-1999	167,39	568162,8	561012,7	-7150,1
Q1-2000	149,94	569144,9	570506,6	1361,7
Q2-2000	128,07	569925	589923,9	19998,9
Q3-2000	102,91	570299,9	597774,1	27474,2
Q4-2000	86,66	570266,2	599031,3	28765,1
Q1-2001	127,18	570095,4	571817,4	1722
Q2-2001	142,50	570346,6	550244,1	-20102,5
Q3-2001	164,05	571596,1	558343,2	-13252,9
Q4-2001	171,04	574219,2	542528,2	-31691
Q1-2002	114,42	578458,7	568658,6	-9800,1
Q2-2002	95,96	584240,5	586210,6	1970,1
Q3-2002	76,88	591392,3	597177,9	5785,6
Q4-2002	64,53	599761,7	607903,9	8142,2

Total potential output during the episode	7487909,3
Total gap during the episode	13223,2
Total gap as percentage of potential output	0,18
Total decline in inflation	102,86
Sacrifice ratio	0,002

Disinflation Episode III

	Trend Inflation	Potential Output	Actual Output	Output Gap
Q1-2007	23,12	812204,2	820775,8	8571,6
Q2-2007	17,36	818242,4	820224,9	1982,5
Q3-2007	19,86	822144,8	815038,3	-7106,5
Q4-2007	21,43	823758,6	839003,8	15245,2
Q1-2008	25,14	822859,6	880377,9	57518,3
Q2-2008	28,33	819376,3	841352,2	21975,9
Q3-2008	26,58	813812,1	818480,6	4668,5
Q4-2008	20,35	806890,4	784424,2	-22466,2
Q1-2009	13,85	799381,2	754937,9	-44443,3
Q2-2009	12,97	791829,9	775863,4	-15966,5
Q3-2009	13,89	784337,4	790213	5875,6

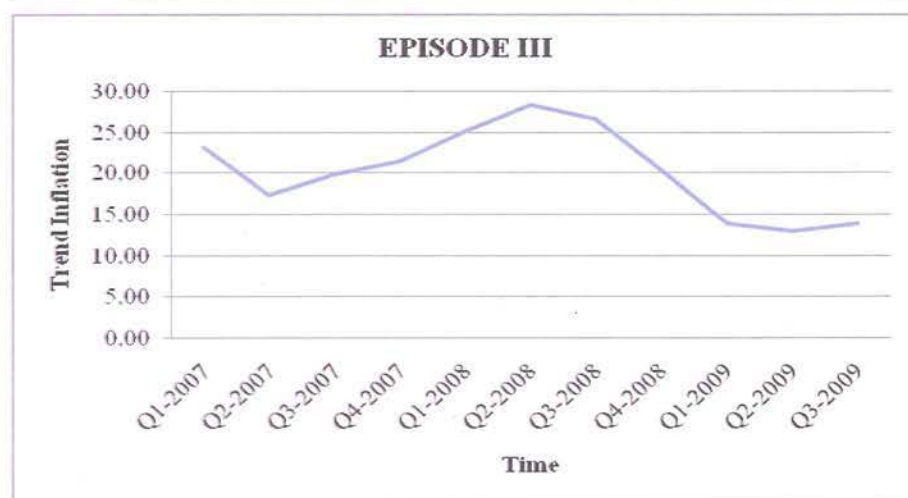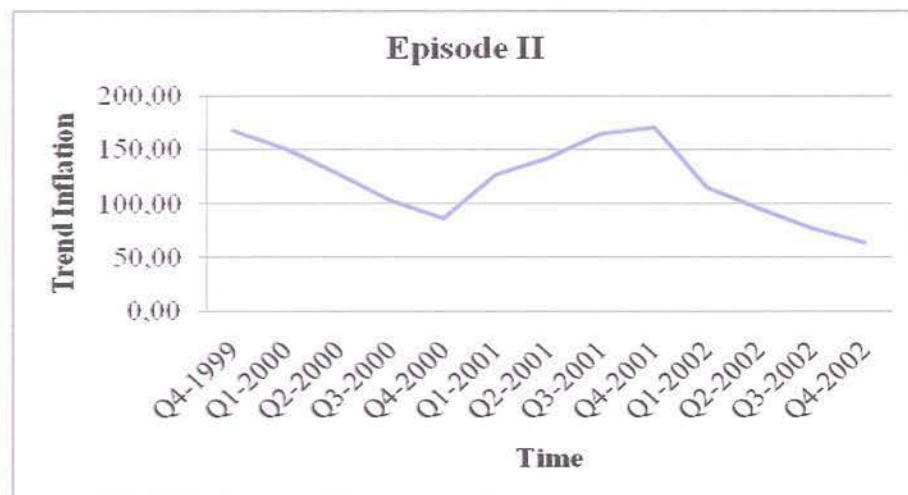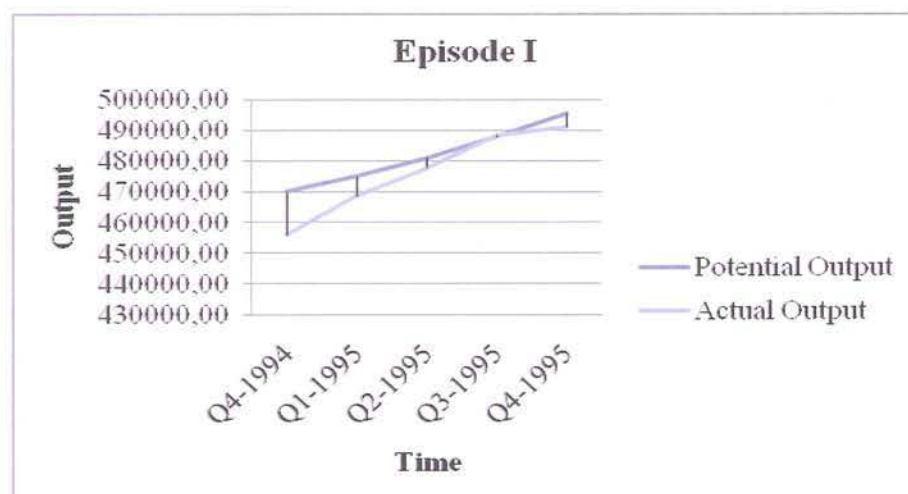|	
Total potential output during the episode	8914836,9
Total gap during the episode	25855,1
Total gap as percentage of potential output	0,29
Total decline in inflation	9,23
Sacrifice ratio	0,031

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Figure 1: Disinflation episodes and Decline in Trend Inflation
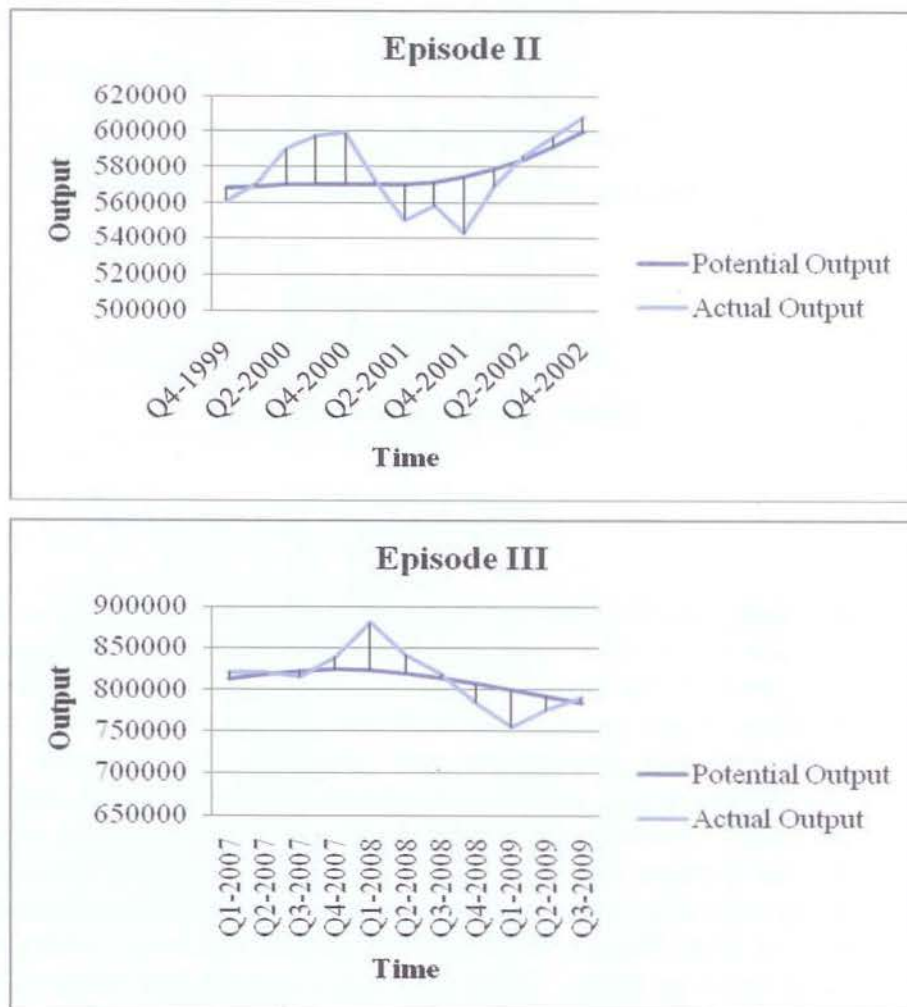

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Figure 2: The Output Gap In Each Disinflation Periods

Iceland's Banking Meltdown:

Analyzing the Portents of a Financial Storm

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Abstract

While no country has fully escaped the impact of the 2008 economic crisis, few have experienced as significant an impact as Iceland. After experiencing remarkable growth in its financial sector over the past years, in the fall of 2008 Iceland's three largest commercial banks all collapsed in a matter of days leaving the Icelandic government and ultimately the Icelandic citizens responsible for unwinding institutions unable to be deemed too big to fail. This paper attempts to perform an autopsy of these failed institutions aiming to uncover what portents or early warning signs there were of the crisis and conjecturing what steps these institutions might have taken to avoid collapse.

To understand these financial institutions in context, the firms' performance is analyzed by financial ratios. Using time series analysis, the recent growth of these financial institutions is examined and special attention is paid to the impact of significant changes in focus and strategy had on underlying bank performance. Cross-sectional analysis is used to compare these financial institutions to one another and benchmarking is used to compare these banks to similar institutions outside of Iceland that were able to weather the crisis. The shortcomings in the Icelandic financial institutions identified in this ratio analysis make up the basis for evaluating their risk management strategies.

While impossible to know what might have been in the past, a thorough analysis of what happened to the financial institutions of Iceland in the time leading up to their failure will identify both the strengths and weaknesses of those institutions and the regulatory frameworks of Iceland. In the aftermath of a financial crisis it is easy to cast blame and call for greater government oversight however indiscriminate it may be. Yet, unreflective action not supported by sober analysis of what actually happened often leads to unintended consequences. Therefore, thorough analysis of this or any post-crisis situation is warranted and is of great importance. With the knowledge gained from such an analysis the leaders of business and government can be better prepared to better manage the risks of financial institutions through more appropriate risk management and well-directed government regulation.

1. Introduction

The financial world was in crisis in the last quarter of 2008. Uncertainty ruled the day as the financial markets were in flux. The titans of the financial world were teetering on the brink of insolvency. Not all survived and many of those who did survive would not be recognized in their present forms. While the world has tentatively moved back from the edge of the precipice today, the effects of the financial crisis continue to be felt around the as various economies struggle with high unemployment and stagnant growth as they attempt to exit recession. As this crisis passes, the leaders of the business, political, and economic world have begun to look back and review what happened in an effort to draw lessons and prevent similar crises from occurring in the future.

One particular country seemingly has a lot to look back on and review. In that country, all of the following events occurred at the height of the crisis: against it the UK Anti-Terrorism, Crime and Security Act of 2001 was implemented, both foreign and national bank assets were frozen, the stock market collapsed, a democratically elected government collapsed, and it was necessary for an emergency IMF agreement to be arranged. In surveying the damage thereafter it is estimated that the total losses were over $100 billion or greater than $300,000 for every citizen (Lewis 140). While the events described above sound as if they were from a blockbuster disaster movie or perhaps the result of the stunts of a undisciplined, excessive risk taking, developing country, in reality they describe what happened to the hitherto unremarkable country of Iceland as a result of the Icelandic banking crisis of 2008.

It is shocking that this occurred in Iceland. A quaint country most known for fishing and the music of Björk would not at first glance seem to be an ideal candidate for such harrowing events. Conventional wisdom says that such events might be expected to occur in an excessive risk taking developing country with loose monetary and fiscal policies in Central America or Africa, but certainly not in an established, developed member of the European Free Trade Association. Even more paradoxically, in the same year in which Iceland's financial sector collapsed due to this crisis, it was ranked first on the United

Nations 2008 Human Development Index (HDI 138). In 2009, the year following the spectacular failure of the Icelandic banking system, Iceland was only demoted two spots to third (HDR 147). These rankings beg the question of how a country seemingly so developed can experience such a drastic a financial crisis. The objective of this paper is to understand how this could be: that is what the Human Development Index actually measures as well as what actually happened in Iceland.

The Human Development Index

According to the UN Development Programme, human development is defined as the "...the process of enlarging people's choices and enhancing their capabilities...Among the most basic and critical dimensions [of human development] are: a long and healthy life, access to knowledge, and a decent standard of living" (HDI 2). According to this definition, the Human Development Index is not simply a measure of standard economic indicators as one might assume. While including some standard economic information (i.e. GPD per capita), the Human Development Index also includes some "softer" data like life expectancy at birth and educational access. Iceland ranked 3rd in terms of life expectancy, 4th in terms of combined primary, secondary, and tertiary gross enrollment, and just 14th in terms of GDP per capita (PPP) for an over ranking of 1st. The data used in the 2008 Human Development Index was collected in 2006.

However, the title, "Human Development Index," is misleading because development is reflexively associated with economics. The most developed country is assumed to be the most economically powerful country. In an effort to expand the definition of development, the UN Development Programme includes not only the economic factor of GDP per capita but also other non-economic factors such as life expectancy and educational attainment. This expanded definition of development by the index results in rankings for countries with strong social services and moderately high GDP per capita that are inflated compared with indices using a more strict economic ranking. However, this ranking inflation does a disservice to these countries because it leads people to believe that they have more economic power than they do in reality.

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Table 1: The 2008 Human Development Index (Iceland in Context)

HDI Value 2006	Life expectancy at birth (years) 2006	Combined primary, secondary, and tertiary gross enrollment (%) 2006	GDP per capita (PPP US$) 2006
1. Iceland (0.968)	1. Japan (82.4)	1. Australia (114.2)	1. Luxembourg (77,089)
2. Norway (0.968)	2. Hong Kong, China (SAR) (82.1)	2. Netherlands (97.5)	12. Canada (36,687)
3. Canada (0.967)	3. Iceland (81.6)	3. Spain (96.5)	13. Netherlands (36,099)
4. Australia (0.965)	4. Switzerland (81.4)	4. Iceland (96.0)	14. Iceland (35,814)
5. Ireland (0.960)	5. Australia (81.0)	5. Libyan Arab Jamahiriya (95.8)	15. Austria (35,523)
6. Netherlands (0.958)	6. Spain (80.7)	6. France (95.4)	16. Denmark (35,125)
79. Turkey (0.806)	86. Turkey (71.7)	105. Turkey (71.1)	63. Turkey (12,955)
179. Sierra Leone (0.329)	179. Swaziland (40.2)	179. Djibouti (25.5)	178. Congo (Democratic Republic of the) (281)

Source: Human Development Reports; 2008 Statistical Update; The Human Development Index – Going Beyond Income, United Nations Development Programme, Web, 15 January 2010, table.

One assumes that economic power affords certain advantages. For example, in economically powerful countries such as the US and the UK, many banks, insurance companies, and automotive companies were deemed too big to fail by the government and in essence nationalized for a time to meet their short-term liquidity needs. This is a luxury available to only the most economically powerful countries in the world. If one applies this same logic, then one would assume that the country ranked highest on the UN Human Development Index would be able to yield their power to more comfortably weather a financial crisis. This was not the case in the example of Iceland. In this case, Iceland did not have the power and luxury that one would assume it did. In the midst of the crisis, Iceland was unable to deem its financial institutions too big to fail or to do anything to stop the collapse of its financial system.

While conventional wisdom attributes financial crises and economic difficulties more often with developing countries, this is not often the case in reality. Financial crises and economic difficulties occur wherever there is disequilibrium in the economy regardless of that economy's particular development level. Rather the advantage of developed countries in terms of financial crises is the ability and the relationships to mitigate the most acute

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effects of the crisis. Developed countries have the resources – institutional, relational, and geopolitical – to weather the storm more easily than developing countries.

2. Historical Background of the Icelandic Economy

In order to understand the recent crisis of the Icelandic economy, it is necessary to understand the context and historical background of the Icelandic economy. This section will examine the developments of the last half-century in Iceland. Iceland itself is a small island nation located in the North Atlantic. It has a population of about 307,000 people and a geographical area of just over 100,000 square kilometers (which is just about the size of Turkey's Aegean region). For the most part it is a country without natural resources aside from rich fisheries in the waters that surround it and abundant geothermal energy sources. As is obvious from the UN Human Development Index, the economy of Iceland is strong. It is very similar to the economies of other European countries with a significant social welfare system in place.

The Make-Up of Iceland's Economy

The transformation of Iceland from something resembling a quaint fishing village to an international financial center is a fascinating economic story itself. The pillar of Iceland's economy has traditionally been its fishing industry. The fishing industry accounts for one sixth of Iceland's GDP and one half of Iceland's exports (Arnason 26; Gylfason 23). Other industries of import include the manufacturing, agriculture, service, and finance industries. Seeking to capitalize on Iceland's abundant geothermal energy resources and environmental desires to produce aluminum in a more eco-friendly way, aluminum production has received much foreign and domestic investment in recent years. As these aluminum projects go online, the aluminum industry's capacity will greatly increase and likely play a more significant role in the Icelandic economy (Lewis 146).

In 1973, the economy of Iceland was fairly balanced with four sectors each making up approximately 15% each of the economy: the fishing and fish processing industries (15%), the finance industry (15%), the service sector (15%) and the manufacturing sector (13%).

Agriculture was approximately 5% of the economy, wholesale and retail trade 11%, and other sectors making up the remaining 26%. Figure one below shows Iceland's GDP by sector in 1973.
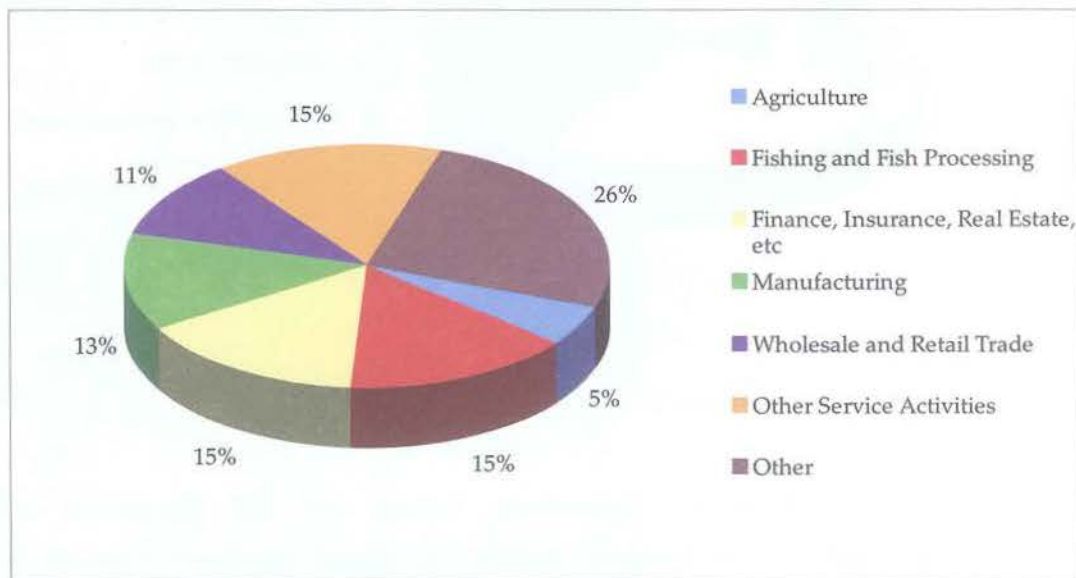

Figure 1: Iceland's GDP by Sector in 1973

Jumping forward 34 years to 2007, a significant shift in the make-up of Iceland's GDP is observed as can be seen below in Figure 2. The four sectors which previously balanced in the economy are no longer relatively equal. Finance now dominated the economy at 27% with the service sector not far behind at 22%. The other two sections (Fishing and fishing processing at 9% and manufacturing at 7%) are much smaller parts of the GDP comparatively.
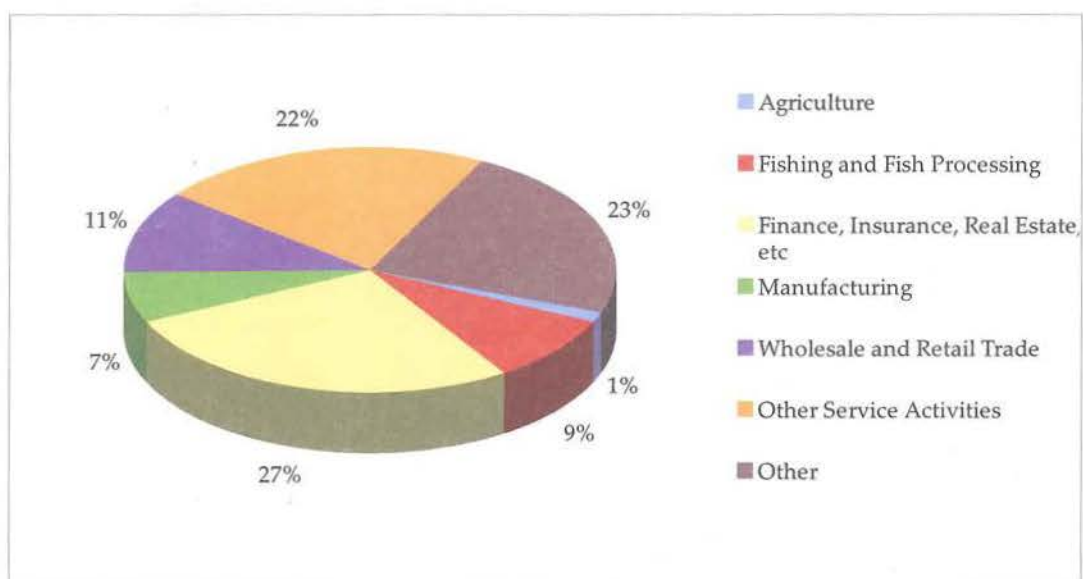
Figure 2: Iceland's GDP by Sector in 2007

For comparison purposes, the agriculture, fishing and fish processing, and the manufacturing sectors can be grouped together into a "real economy" segment. In 1973 this "real economy" segment was 33% of GDP while the financial sector accounted for only 15% of GDP in 1973. In 2007, those same "real economy" sectors only make up 17% of GDP. In contrast, the financial sector jumps to a whopping 27% of GDP in 2007. That is a substantial 48% decrease in the real economy sectors as a percentage of Iceland's GPD and a huge 80% increase in the financial sector. It should be understood that during the 34-year interim period the economy itself grew so, while the proportion of GDP represented did decrease, it is not the case that the absolute size of the "real economy" segment decreased. Rather, it should be understood that the other segments of the economy, most notably the financial and service sectors, experienced much greater growth that the "real economy" segment. These changes are illustrated in table two below.

Table 2: Changes in Iceland's GDP by Sector, 1973 and 2007 Compared

	1973	2007	Percent Change
Real Economy Sectors	33%	17%	-48%
Financial Sector	15%	27%	+80%

From Fishing Village to International Financial Center

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So how does a nation that is essentially a big fishing village become an international financial center in less than 40 years? The answer lies in how one views the fish. Few fishermen in the world have become rich. The names of famous, successful bankers, real estate tycoons, oilmen, and industrialists are well known, but that is not the case for fishermen. While the fisheries surrounding Iceland are among the richest in the world, they have only recently started to produce any sustained wealth. For the majority of the history of fishing the structure of the fishing industry has precluded the creation of wealth.

Traditionally, the structure of the fishing industry has been the common property structure which precludes the creation of wealth. The common property structure forces fishermen "to engage in wasteful competition with each other for shares in the obtainable catch. The waste manifests itself in excessive fishing capital, excessive fishing effort, and depressed stocks of fish" (Arnason 25). The livelihoods of individual fishermen depended on their personal efforts to maximize their individual catch. This led to a rat race of intense fishing effort with the latest of technology to out catch the competition to provide for one's personal needs inadvertently leading to the flooding of the market with excessive fish causing depressed the prices and requiring even more effort to make up for the missed revenue. The cycle continued without end resulting ultimately in inefficient allocation of capital resources and eventual depressed fish stock.

This problem was diagnosed in the work of Indiana University economist H. Scott Gordon who wrote a seminal paper on common-property resources. Gordon wrote, "there appears, then, to be some truth in the conservative dictum that everybody's property is nobody's property. Wealth that is free for all is valued by none because he who is foolhardy enough to wait for its proper time of use will only find that it has been taken by another" (Gordon 37). Gordon contended that while a theoretical optimum fishery utilization is possible, it is impossible to achieve that utilization under the common property structure. "The result [of the common property structure] is a pattern of competition among fishermen which culminates in the dissipation of rent on the intramarginal grounds" (Gordon 31).

The solution to this problem of the dissipation of rent on intramarginal grounds was to be found in the development of private property rights in fisheries (and other examples of

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common-property) around the world. In three phases in 1984, 1991, and 2004 Iceland implemented a new system of individual transferable quotas (ITQs) that entitled their holders to a portion of the total allowable fishing catch. The introduction of these ITQs increased some much need efficiency into the industry and created wealth because of the ITQ's value, security, and ability to be used as collateral to obtain financial credit.

The ITQs "led to the rationalization of the fisheries; they reduced fishing effort and fishing fleets, increased fish stocks, and improved coordination between supply and demand of catches" (Arnason 38). After the introduction of the ITQ system, Iceland experienced tremendous economic growth. Fishing is a labor-intensive industry, especially under circumstances of intense competition, and so as the fishing industry became more balanced under this new ITQ system, more workers were free to pursue other opportunities. The wealth generated by the ITQ system as well as the tax revenues there from led to opened new doors to education for more Icelandic citizens (as is reflected in the UN Human Development Index). According to Lewis, "Iceland's youth are paid to study abroad...and cultivate themselves in interesting ways" (Lewis 145). All this contributed to a growing Icelandic economy. "Although this economic growth primarily occurred in sectors of the economy other than the fisheries sector, most importantly, the financial sector, there is evidence that it was significantly assisted by the wealth initially generated by the ITQ system," (Arnason 36).

All of these changes beg the question: where does an increasingly highly educated workforce of a newly wealthy country turn to for work when they are no longer needed to work in the traditional economic sectors. The answer is the service and financial sectors as is illustrated in Figure 2 and Table 2 above which in turn sets the stage for the recent developments in the Icelandic economy.

3. Recent Developments in the Icelandic Economy

In our age of globalization, the interdependence of economies provides both an opportunity and a threat. In times of economic growth, the opportunities of economic synergy provided by economic interdependence are many. However, when one country experiences

economic turbulence, these same veins quickly spread the difficulties from one economy to others endangering economies that without this interdependence would not as significantly be affected by the economic turbulence of the original country. This contagion effect is amplified by the interdependence of globalization. As the most recent crisis illustrates, developed countries are just as able to disrupt the economy as developing countries and in certain ways the contagion effect of disruptions caused by developed countries is greater than that of developing countries because of their wider web of connections.

As the ITQ system was being implemented in the fishing sector, Iceland's financial sector was innovating as well. From the 1990s onward, the financial sector underwent a deregulation process and thereafter a fairly rapid process of privatization (CBI 24). Beginning in 1979 a liberalization program of the entire Icelandic economy occurred culminating in the privatization and consolidation of some thirteen separate, public financial institutions into three private commercial banks with global ambitions: Glitnir, Landsbanki, and Kaupthing Bank. The consolidation of the Icelandic banks is illustrated below in figure three.
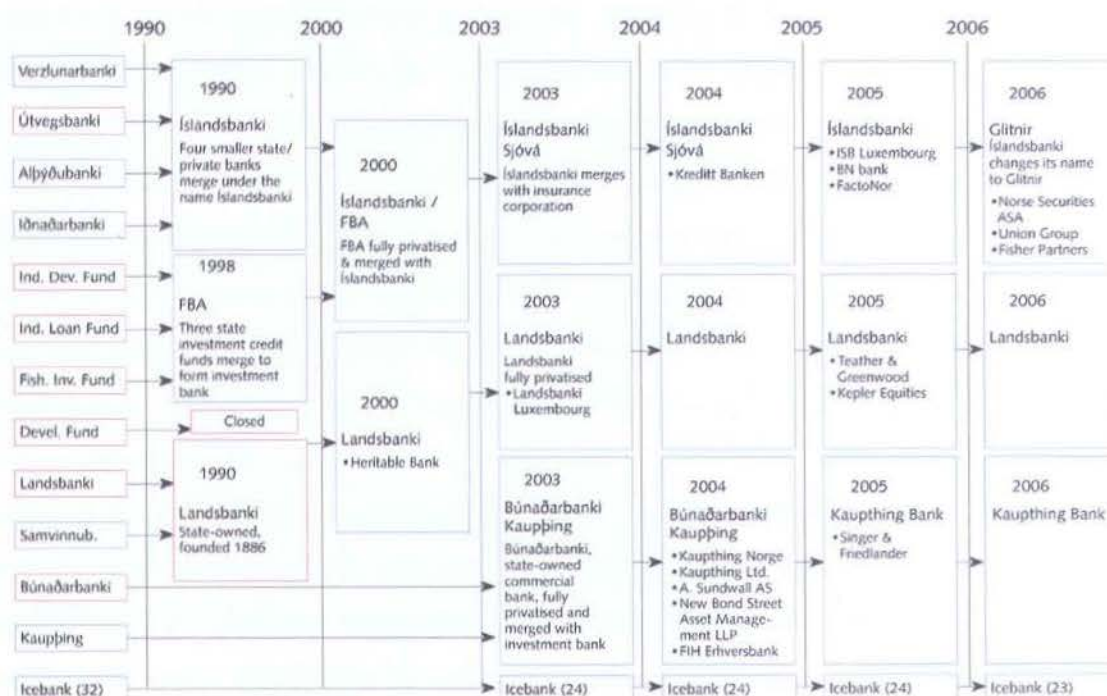

Figure 3: Consolidation of Iceland's Banking System
Source: Economy of Iceland 2008; Structure of the Economy; Financial Sector; Chart 4.7; The Central Bank of Iceland; Reykjavik: Gutenburg, 2008, 24.

In the early 2000s, Iceland took full advantages of globalization and the unique market conditions to expand the reach of its banking sector. Following the consolidation and privatization of the Icelandic financial system, Iceland's three commercial banks implemented a growth strategy dependent on foreign capital. Several factors worked in Iceland's favor at first: increases in wages, price growth, and inflation attributable to a tight labor market (Valgreen 3), high real interest rates (peaking at 8.72% in 2007 while averaging 4.36% from 2003 to 2009), and an appreciating Krona. All of these factors proved very attractive to Europeans willing to take on greater risk for compensate higher interest rates. The active search for more depositors by the Icelandic banks coincided perfectly with the search of Europeans for higher interest rate returns. "The Icelandic banks have understood that there is a large (especially relative to the size of the Icelandic economy) international market for high interest rate securities" (Aliber 20). This confluence therefore enabled the Icelandic banks to fund their growth externally and the Icelandic banks used most of the money received from these securities to purchase assets in the UK and Northern Europe (generally banks and financial service firms).

However, this banking model proved unsustainable in the long run. "The buyers of the liabilities of banks can be fickle friends…the Icelandic banks depend on the willingness of these investors to buy more of these liabilities when the existing liabilities mature" (Aliber 21). When the worldwide capital markets began to freeze up in late 2007, there was a flight of capital from investments presumed to be risky to those presumed to be safe. As these short-term liabilities were maturing, no longer were the Icelandic banks so easily able to find investors willing to buy more of these liabilities and as a result the ability of the Icelandic banks to meet their short-term liability needs decreased. This was further complicated by a currency mismatch. Most of Iceland's liquid assets were denominated in Icelandic Krona while most of their short-term liabilities were denominated in foreign currency. As capital flight occurred, the Icelandic banks were finding it increasingly difficult to find sufficient foreign currency to meet their short-term liabilities. While the Icelandic banks were up through the end of 2007 still liquid and fairly well capitalized, the fate of these institutions depended on continuing flow of new money in the form of foreign currency.

There was a bubble (or multiple bubbles) in the Icelandic economy. Robert Aliber defines a bubble as "a non-sustainable pattern of financial flows; when the flow of new money stops, a crisis follows because the borrowers prove unwilling or unable to repay" (Aliber 2). In order to meet their foreign currency needs, the banks were dependent on the continued deposits or purchases of securities by those using foreign currency. When those flows of foreign currency were threatened by the tightening of the worldwide economy in 2008, the Icelandic bank's foreign currency liquidity was in danger that in turn endangered the liquidity of the entire institutions.

The fate of one Icelandic bank – Glitnir – in particular was looking tenuous. On Monday, 29 September 2008, the Icelandic government announced a plan to nationalize Glitner with the purchase of a 75% stake for 600 million pounds. This announcement came the same day as the UK announced that it was nationalizing Bradford and Bingley, a British bank. When the British press, still in the midst of their analysis of the Bradford and Bingley nationalization, got wind of the liquidity dangers of the Icelandic banks, they filled the weekend papers with harsh critiques of the Icelandic banks stoking up a panic. Sensing panic in the midst of an unfolding economic crisis, officials in the UK and the Netherlands as well as the worldwide financial markets were quick to get involved in the situation. On Monday, 6 October 2008, Iceland's access to interbank lending was reduced as a number of private interbank credit facilities were closed and by that evening one subsidiary of Landsbanki located in Guernsey went into voluntary administration. On Tuesday, 7 October 2008, both Landsbanki and Glitnir were taken over by the Icelandic Financial Supervisory Authority. Fearing the loss of a majority of the deposits in the UK subsidiaries of Icelandic banks, particularly Landsbanki, UK Chancellor of the Exchequer Alistair Darling used the UK Anti-Terrorism, Crime and Security Act of 2001 to freeze the assets of Landsbanki in the UK. Kaupthing lasted two days longer until Thursday, 9 October 2008, when the Icelandic Financial Supervisory Authority took over control of it. Within a week, Iceland's three, large private banks had all failed and the country itself had been thrown into crisis. While the ending of the banking system was certainly dramatic, one wonders whether it had to be this way. Were the Icelandic banks, before the panic, illiquid? The best way to tell is to analyze various financial ratios.

4. Financial Ratio Analysis

To understand these financial institutions in context, the firms' performance is analyzed by financial ratios. Using time series analysis, the recent growth of these financial institutions is examined. Cross-sectional analysis is used to compare these financial institutions to one another and benchmarking is used to compare these banks to similar institutions outside of Iceland that were able to weather the crisis. The shortcomings in the Icelandic financial institutions identified in this ratio analysis make up the basis for evaluating their liquidity and risk management strategies.

The Icelandic banks are benchmarked with the two of the largest private banks in Turkey – Akbank and Garanti Bank. Turkey is a developing country located on the eastern edge of Europe. It has a population of about 77,000,000 (compared with an Icelandic population of about 300,000). GDP on PPP basis in 2008 was $903.9 billion in Turkey (compared with a $12.87 GDP in Iceland) and per capita that was $11,900 in Turkey (versus $42,300 in Iceland). The geographic area of Turkey is just under 800,000 square kilometers (compared with an of about 100,000 square kilometers in Iceland). While Turkey may seem an odd choice as a benchmark for Icelandic banks, it was selected to highlight the difference in performance between the banks of developed country and those of a developing country. Additionally, the author having done previous work with the Turkish banks is partial to continuing working with them.

The financial ratios analyzed include: Return on Equity, Return on Assets, Profit Margin, Net Interest Margin, Asset Utilization, Loss Rate, Loan Ratio, Interest Expense, Wages and Salaries, Provision for Loan Loss, Cash Ratio, Cash and Securities Ratio, Tax Rate, and Dollar Gap Ratio. The equations for these ratios are located in Appendix 1. The financial ratios were calculated using the figures provided in the annual statements of the banks. Not all the results of all the financial ratios will be listed in the text here. Rather, the results of selected financial ratios are listed and analyzed below while the results of all the financial ratios are listed in Appendix 2.

4.1. Return on Assets

The return on assets ratio shows the ability of the bank managers to generate a return using the real and financial resources of the firm. Return on assets is calculated using the following ratio:

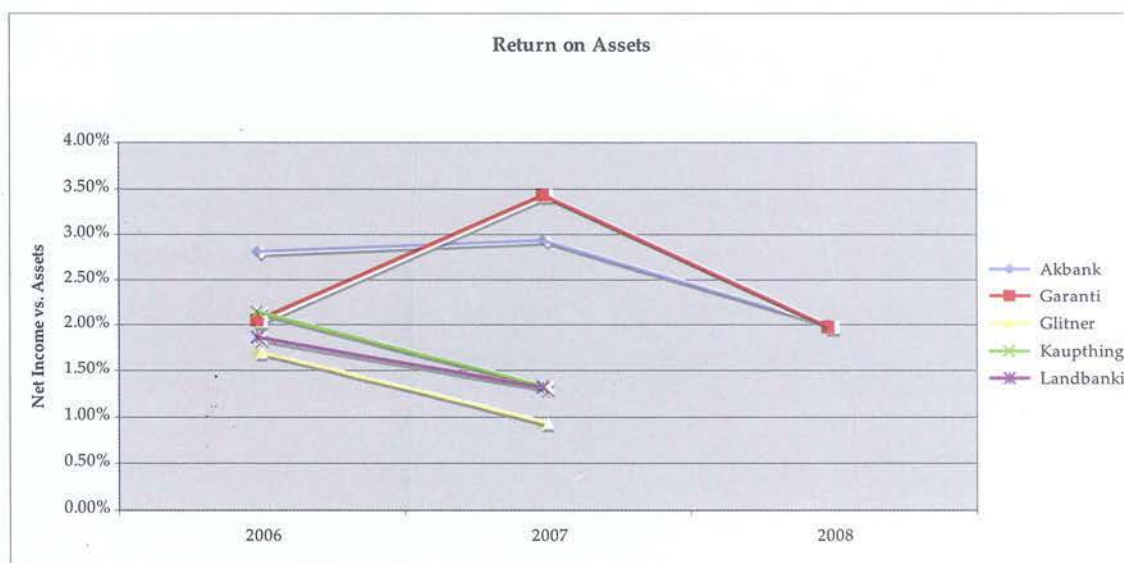$$ROA = \left(\frac{NI}{TA}\right)100 \tag{1}$$

Figure 4: Return on Assets

In 2006, four of the five banks analyzed had a similar return of assets of just about 2%. The exception was Akbank whose return on asset was nearly 3%. The performance of the Icelandic and Turkish banks separates significantly by the end of 2007. Garanti Bank had a very successful 2007 ending the year with a nearly 3.5% return on asset while Akbank maintained its relatively high return on asset. In sharp contrast, the Icelandic banks all performed less well in 2007 than in 2006 with their return on assets dropping down to below 1.5% for Kaupthing and Landsbanki and below 1% for Glitner. The across the board decrease in return on assets does not bode well for the Icelandic banks and Glitner's especially poor return on assets at the end of 2007 is a definite warning sign that things are ominous.

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4.2. Loan Ratio

The loan ratio shows the how much of the assets are devoted to loans as opposed to other purposes. The loan ratio is calculated using the following ratio:

$$\text{Loan ratio } (\%) = \frac{\text{Net loans}}{\text{Total assets}} \times 100 \qquad\qquad (2)$$
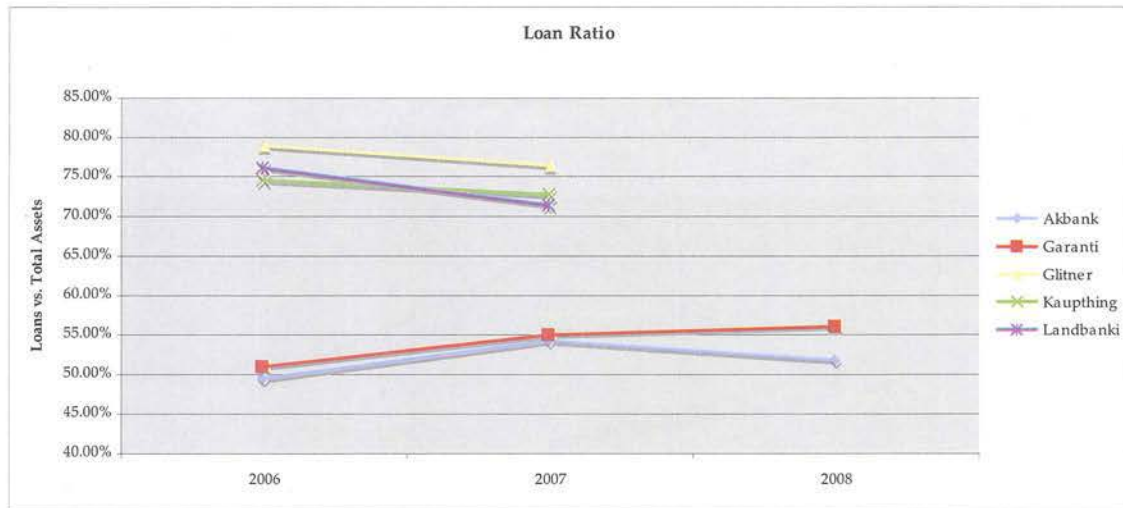
Figure 5: Loan Ratio

It is surprising how much more of the Icelandic banks' assets are devoted to loans than those of the Turkish banks. One potential explanation is that there are more credit worthy borrowers in Iceland as opposed to in Turkey. Often developing countries are hesitant to extend credit, especially on a long-term basis, to borrowers because of uncertainty in the economy. One observation to note is that while the Icelandic banks' loan ratio decreased between 2006 and 2007 the Turkish banks' loan ratios increased between 2006 and 2007 and for Garanti Bank the increase continued into 2008.

4.3. Net Interest Margin

The primary functions of banks are the taking of deposits and the giving of loans. The net interest margin shows how well a bank performs this most basic function. The higher the net interest margin, the better job the bank is doing at soliciting profitable loans and holding down interest payment to its depositors. The net interest margin is calculated using the following ratio:

$$NIM = \frac{\text{Total interest income} - \text{Total interest expense}}{\text{Average earning assets}} \times 100 \qquad (3)$$
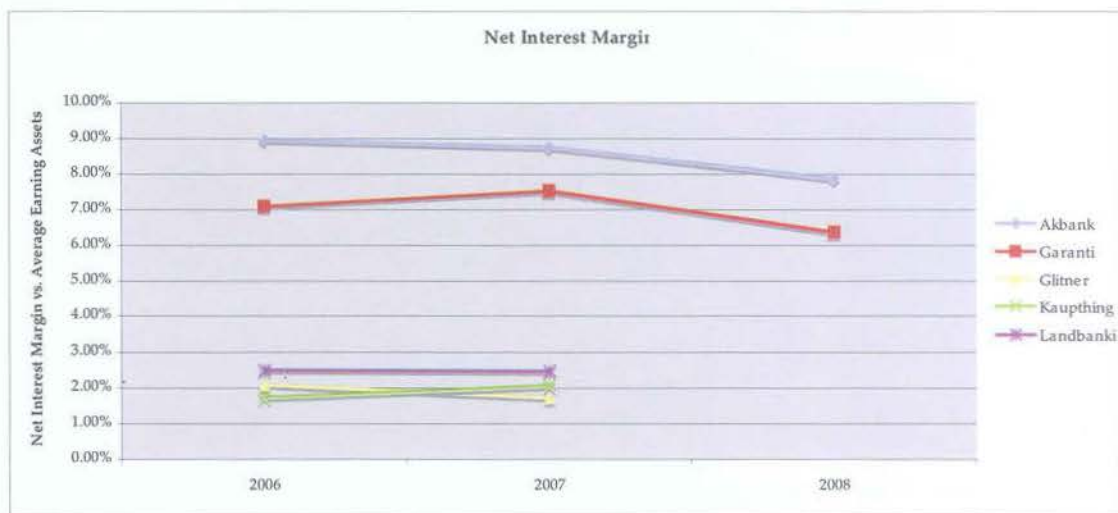
Figure 6: Net Interest Margin

Here again the Turkish banks are seemingly doing much better than the Icelandic banks. The Turkish banks are getting more profit for the average earning asset than the Icelandic banks. The net interest margin for the Turkish banks is right around 8% while for the Icelandic banks it is right around 2%. The Turkish banks are netting four times as much net interest margin as the Icelandic banks. There was a slight improvement in net interest margin for Kaupthing and Garanti from 2006 to 2007 and a slight decline in net interest margin for Glitner and Akbank in the same period.

4.4. Interest Expense

A bank's interest expense is the amount that it pays out in interest on deposits. The loan ratio is calculated using the following ratio:

$$Interest\ Expense = \frac{Interest\ Expense}{Total\ assets} \times 100 \qquad (4)$$
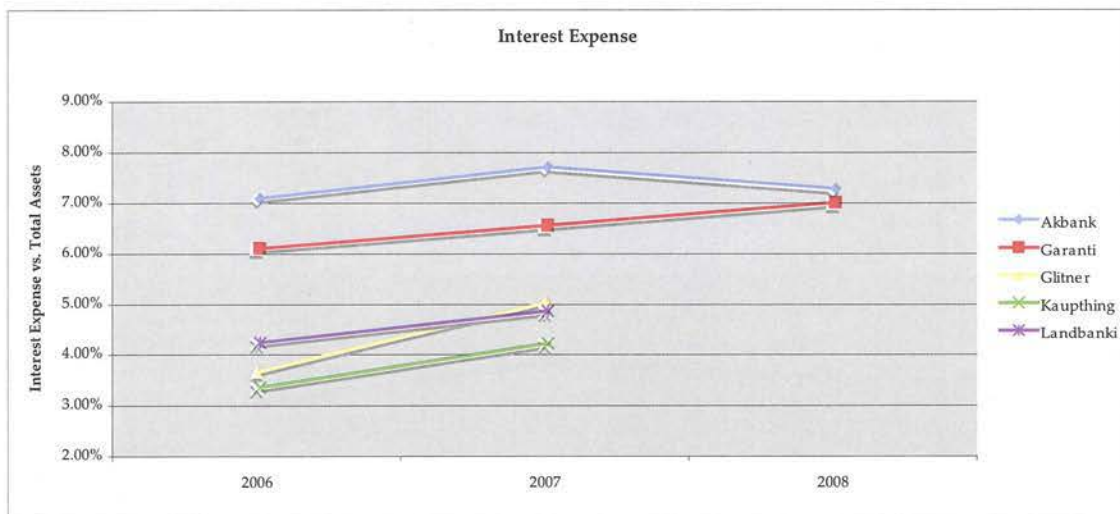
Figure 7: Interest Expense

Across the board the bank's interest expenses increased from 2006 to 2007. In general, the interest expenses of the Turkish banks (at approximately 7%) were higher than the interest expenses of the Icelandic banks (at approximately 4%). We see the greatest year-to-year increase in interest expense for Glitner when their interest expense jumped nearly 1.5%.

4.5. Cash Ratio

The amount of cash a bank has on hand is expressed by its cash ratio. In times of crisis the more cash a bank has on hand the better. Similar to the cash ratio is the cash and securities ratio. The cash ratio was used in lieu of the cash and securities ratio because both Iceland and Turkey are smaller countries with their own currency. In the event of a liquidity crisis, the markets for securities issued by Iceland and Turkey would quickly freeze up making those securities less liquid. In an attempt to measure the resources available in a liquidity

crisis, which is eventually what Iceland faced, the cash ratio was emphasized. The cash ratio is calculated using the following ratio:

$$\text{Cash ratio} = \frac{\text{Cash}}{\text{Total Assets}} \times 100 \qquad (5)$$
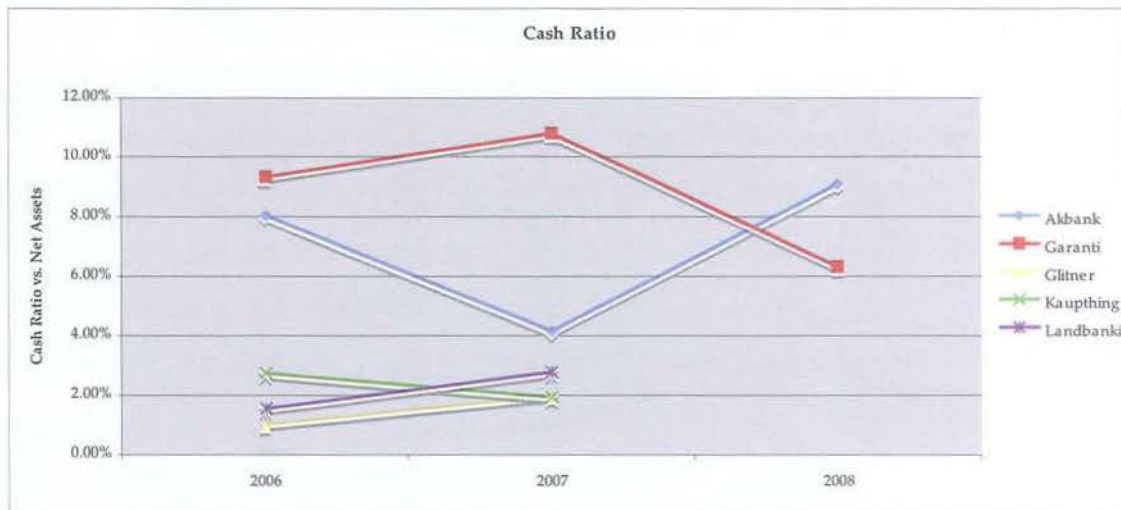
Figure 8: Cash Ratio

The cash holdings of the Icelandic banks were significantly lower than the cash holdings of the Turkish banks. The average cash ratio of the Icelandic banks was about 2%. In contrast, the average cash ratio of the Turkish banks was about 8%. It is unbelievable that the Icelandic banks would choose to hold onto so little cash when they are in such a risky position. The lack of cash on hand explains why they were susceptible to the rumors of illiquidity. The balance sheets of the Icelandic banks were an invitation to speculators to seek their demise.

4.6. Dollar Gap Analysis

Interest sensitivity is measured by the dollar gap. The dollar gap ratio measures the sensitivities of a bank's assets and liabilities. If there is a large difference between the amount of rate sensitive assets and liabilities and the interest rates change, a bank might not have sufficient liquid resources to meet short-term cash needs. A risk averse bank will seek to minimize their dollar gap through asset and liability management strategies.

Speculative banks seek to predict the market and align their dollar gaps to benefit from prospective interest rate changes. For banks that have a negative dollar gap, a decrease in the interest rate leads to greater interest income and an increase in the interest rate leads to a loss of interest income. For banks with a positive dollar gap, the opposite is true; that is, a decrease in the interest rate causes a loss and an increase in the interest rate causes a gain. The dollar gap is calculated using the following ratio:

Gap ($) = RSA ($) − RSL ($)   (6)
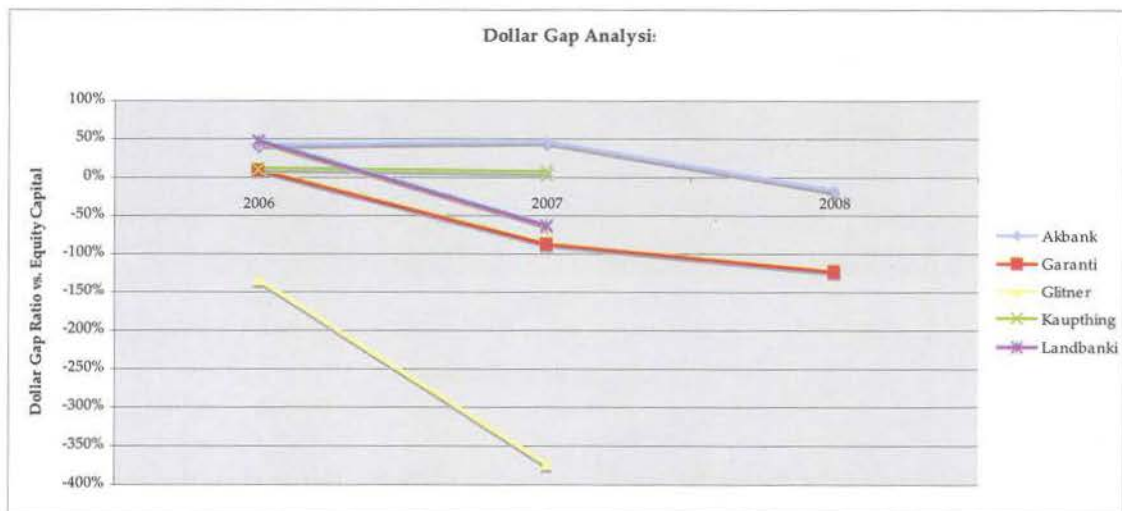
Figure 9: Dollar Gap Analysis

In Figure 9, the dollar gap was divided by total equity resulting in a percentage. In a worse case scenario, banks can use their equity capital to meet their short-term liquidity needs. Therefore, as long as dollar gap divided by total equity is less than 100%, a bank would be able to cover their short-term liabilities. Of course, using equity capital to meet short-term liabilities is not to be advised.

As can be seen in the Figure 9, the dollar gaps of all the banks are all over the board. Kaupthing seems to be the most conservative with a dollar gap near zero. Akbank, Garanti Bank, and Landbanki all had dollar gaps as a percentage of equity capital of around +/- 100%. The bank with the highest risk is Glitner with a 2006 dollar gap as a percentage of equity capital of about -150% and a 2007 dollar gap as a percentage of equity capital of about -375%. If interest rates were to rise, Glitner bank would have incredible, perhaps insurmountable short-term liquidity problems.

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5. Conclusion

According to the financial ratios analyzed, the Icelandic banks were in a decent position. The Icelandic banks' return on assets and return on equity, especially in 2006, was typical of the financial sector. Their loan ratio was strong. Their net interest margin was a bit low, but steady especially considering the competitive nature of the international financial sector. The Icelandic banks' interest expenses were generally low and did not experience increase out of the normal from 2006 to 2007. A significant warning sign about the financial state of the Icelandic banks was their low cash ratios. Furthermore, Glitner's dollar gap position was quite dangerous even in 2006 and even more so in 2007. Even though the Icelandic banking authority was seemingly more concerned about Glitner's short-term liquidity needs and was publicly discussing its nationalization, it is surprising that Landsbanki was the bank that the UK financial administrators were initially more concerned about. Those publicly expressed concerns in hindsight seem overblown and likely brought down the entirety of the Icelandic banking sector when potentially both Landsbanki and Kaupthing could have survived.

In the end, the problems were not so much problems of bank mismanagement, but perhaps problems of strategy. Depending on foreign deposits for "…it's [Iceland's] banking model was not viable. The fundamental reason was that Iceland was the most extreme example in the world of a very small country, with its own currency, and with an internationally active and internationally exposed financial sector that is relatively large to its GDP and relative to its fiscal capacity" (Buiter 25). The Icelandic banking industry's strategy of growing through expansion into areas where the Krona was not the dominant currency eliminated the government as Iceland's the lender of last resort. This left the Icelandic banks dependent on the mercy of the international buyers of their securities whims and when the storm clouds of the financial crisis of 2008 began to appear these buyers were revealed to be only fair weather friends.

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Appendices

Appendix 1: Financial Ratio Formulas

Return on Equity

$$ROE = \left(\frac{NI}{TEC}\right)100$$

Return on Assets

$$ROA = \left(\frac{NI}{TA}\right)100$$

Profit Margin

$$Profit\ Margin = \frac{Net\ income}{Operating\ revenue}$$

Net Interest Margin

$$NIM = \frac{Total\ interest\ income - Total\ interest\ expense}{Average\ earning\ assets} \times 100$$

Asset Utilization

$$Asset\ Utilization = \frac{Operating\ revenue}{Total\ assets}$$

Loss Rate

$$Provision\ for\ loss\ ratio\ (\%) = \frac{Provision\ for\ loan\ losses}{Total\ loans\ and\ leases} \times 100$$

Loan Ratio

$$Loan\ ratio\ (\%) = \frac{Net\ loans}{Total\ assets} \times 100$$

Interest Expense

$$Interest\ Expense = \frac{Interest\ Expense}{Total\ assets} \times 100$$

Wages and Salaries

$$Wages\ and\ Salaries\ Expense = \frac{Wages\ and\ Salaries\ Expense}{Total\ assets} \times 100$$

Provision for Loan Loss

$$\text{Provision for loss} = \frac{\text{Provision for loan losses}}{\text{Total Assets}} \times 100$$

Cash Ratio

$$\text{Cash ratio} = \frac{\text{Cash}}{\text{Total Assets}} \times 100$$

Cash and Securities Ratio

$$\text{Cash and Securities Ratio} = \frac{\text{Cash and Securities}}{\text{Total Assets}} \times 100$$

Tax Rate

$$\text{Tax rate (\%)} = \frac{\text{Total taxes paid}}{\text{Net income before taxes}} \times 100$$

Dollar Gap Ratio

$$\text{Gap (\$)} = RSA\,(\$) - RSL\,(\$)$$

Appendix 2: Analysis of Icelandic and Comparative Banks by Financial Ratios

	Akbank			Garanti Bank			Glitner Bank		Kaupthing Bank		Landsbanki Bank	
	2006	2007	2008	2006	2007	2008	2006	2007	2006	2007	2006	2007
Return on Equity	22.65%	18.81%	15.21%	24.18%	33.64%	18.49%	22.49%	18.92%	25.81%	19.97%	26.91%	21.71%
Net Income	1,600,192,000	1,994,294,000	1,704,553,000	1,166,563,000	2,315,616,000	1,750,488,000	38,231	27,651	86,447	71,191	40,215	39,949
Total Equtiy Capital	7,065,397,000	10,600,833,000	11,208,372,000	4,824,387,000	6,883,119,000	9,469,074,000	169,969	146,119	334,892	356,431	149,457	184,004
Return on Assets	2.79%	2.92%	1.99%	2.04%	3.43%	1.97%	1.70%	0.94%	2.13%	1.33%	1.85%	1.31%
Net Income	1,600,192,000	1,994,294,000	1,704,553,000	1,166,563,000	2,315,616,000	1,750,488,000	38,231	27,651	86,447	71,191	40,215	39,949
Total Assets	57,272,590,000	68,204,750,000	85,655,014,000	57,298,386,000	67,578,482,000	88,940,860,000	2,246,340	2,948,910	4,055,396	5,347,345	2,172,924	3,057,546
Total Assets in USD							436,184,122,946		790,945,464,227		452,252,873,223	
Profit Margin	0.41	0.41	0.32	0.32	0.47	0.33	0.53	0.32	0.52	0.43	0.45	0.36
Net Income	1,600,192,000	1,994,294,000	1,704,553,000	1,166,563,000	2,315,616,000	1,750,488,000	38,231	27,651	86,447	71,191	40,215	39,949
Operating Revenue	3,944,722,000	4,877,001,000	5,395,322,000	3,600,268,000	4,933,171,000	5,270,824,000	72,601	85,095	167,216	165,818	89,426	110,025
Net Interest Margin	8.96%	8.76%	7.86%	7.10%	7.53%	6.37%	2.09%	1.73%	1.73%	2.06%	2.51%	2.47%
Total Interest Income	6,586,848,000	8,481,572,000	9,700,358,000	5,562,567,000	7,216,606,000	9,378,392,000	119,115	187,576	187,451	304,331	133,102	202,095
Total Interest Expense	4,046,821,000	5,239,865,000	6,212,528,000	3,486,684,000	4,412,503,000	6,200,432,000	82,031	148,494	135,089	224,218	91,611	148,044
Average Earning Assets	28,336,941,000	37,015,783,000	44,374,104,000	29,234,853,000	37,217,886,000	49,907,407,000	1,773,194	2,253,376	3,023,943	3,892,849	1,654,013	2,185,667
Asset Utilization	0.07	0.07	0.06	0.06	0.07	0.06	0.03	0.03	0.04	0.03	0.04	0.04
Operating Revenue	3,944,722,000	4,877,001,000	5,395,322,000	3,600,268,000	4,933,171,000	5,270,824,000	72,601	85,095	167,216	165,818	89,426	110,025
Total Assets	57,272,590,000	68,204,750,000	85,655,014,000	57,298,386,000	67,578,482,000	88,940,860,000	2,246,340	2,948,910	4,055,396	5,347,345	2,172,924	3,057,546
Loss Rate	1.52%	1.94%	2.59%	1.15%	0.91%	1.13%	0.70%	0.64%	0.20%	0.16%	0.37%	0.32%
Provision for loan losses	430,881,000	719,592,000	1,148,103,000	335,996,000	337,644,000	566,446,000	12,462	14,371	6,180	6,127	6,144	6,956
Total loans and leases	28,336,941,000	37,015,783,000	44,374,104,000	29,234,853,000	37,217,886,000	49,907,407,000	1,773,194	2,253,376	3,023,943	3,892,849	1,654,013	2,185,667

Total Allowances for Imp.

	Akbank			Garanti Bank			Glitner Bank		Kaupthing Bank		Landsbanki Bank	
	2006	2007	2008	2006	2007	2008	2006	2007	2006	2007	2006	2007
Loan Ratio	**49.48%**	**54.27%**	**51.81%**	**51.02%**	**55.07%**	**56.11%**	**78.94%**	**76.41%**	**74.57%**	**72.80%**	**76.12%**	**71.48%**
Net Loans	28,336,941,000	37,015,783,000	44,374,104,000	29,234,853,000	37,217,886,000	49,907,407,000	1,773,194	2,253,376	3,023,943	3,892,849	1,654,013	2,185,667
Total Assets	57,272,590,000	68,204,750,000	85,655,014,000	57,298,386,000	67,578,482,000	88,940,860,000	2,246,340	2,948,910	4,055,396	5,347,345	2,172,924	3,057,546
Interest Expense	**7.07%**	**7.68%**	**7.25%**	**6.09%**	**6.53%**	**6.97%**	**3.65%**	**5.04%**	**3.33%**	**4.19%**	**4.22%**	**4.84%**
Total Interest Expense	4,046,821,000	5,239,865,000	6,212,528,000	3,486,684,000	4,412,503,000	6,200,432,000	82,031	148,494	135,089	224,218	91,611	148,044
Total Assets	57,272,590,000	68,204,750,000	85,655,014,000	57,298,386,000	67,578,482,000	88,940,860,000	2,246,340	2,948,910	4,055,396	5,347,345	2,172,924	3,057,546
Wages and Salaries	**0.96%**	**0.90%**	**0.97%**	**2.75%**	**2.15%**	**2.21%**	**0.70%**	**0.95%**	**0.83%**	**0.87%**	**1.13%**	**1.23%**
Wages and Salaries Ex.	549,848,000	615,950,000	833,754,000	1,575,401,000	1,454,334,000	1,964,574,000	15,747	27,896	33,570	46,647	24,458	37,688
Total Assets	57,272,590,000	68,204,750,000	85,655,014,000	57,298,386,000	67,578,482,000	88,940,860,000	2,246,340	2,948,910	4,055,396	5,347,345	2,172,924	3,057,546
Provision for Loan Loss	**0.75%**	**1.06%**	**1.34%**	**0.59%**	**0.50%**	**0.64%**	**0.55%**	**0.49%**	**0.15%**	**0.11%**	**0.28%**	**0.23%**
Provision for loan losses	430,881,000	719,592,000	1,148,103,000	335,996,000	337,644,000	566,446,000	12,462	14,371	6,180	6,127	6,144	6,956
Total Assets	57,272,590,000	68,204,750,000	85,655,014,000	57,298,386,000	67,578,482,000	88,940,860,000	2,246,340	2,948,910	4,055,396	5,347,345	2,172,924	3,057,546
Cash Ratio	**7.93%**	**4.05%**	**8.97%**	**9.22%**	**10.70%**	**6.22%**	**0.91%**	**1.88%**	**2.64%**	**1.83%**	**1.46%**	**2.67%**
Cash	4,542,767,000	2,762,434,000	7,683,806,000	5,284,433,000	7,227,867,000	5,531,574,000	20,417	55,500	106,961	97,959	31,669	81,559
Total Assets	57,272,590,000	68,204,750,000	85,655,014,000	57,298,386,000	67,578,482,000	88,940,860,000	2,246,340	2,948,910	4,055,396	5,347,345	2,172,924	3,057,546
Cash and Securities Ratio	**19.47%**	**11.15%**	**9.23%**	**11.06%**	**10.91%**	**6.97%**	**11.22%**	**11.34%**	**10.49%**	**8.70%**	**9.26%**	**14.53%**
Cash and Securties	11,152,343,000	7,605,424,000	7,903,680,000	6,336,998,000	7,373,507,000	6,197,671,000	252,092	334,460	425,225	465,309	201,267	444,176
Total Assets	57,272,590,000	68,204,750,000	85,655,014,000	57,298,386,000	67,578,482,000	88,940,860,000	2,246,340	2,948,910	4,055,396	5,347,345	2,172,924	3,057,546
Tax Rate	**17.37%**	**18.97%**	**17.25%**	**20.38%**	**16.47%**	**19.03%**	**17.35%**	**18.44%**	**14.48%**	**12.01%**	**10.02%**	**12.30%**

	Akbank			Garanti Bank			Glitner Bank		Kaupthing Bank		Landsbanki Bank	
	2006	2007	2008	2006	2007	2008	2006	2007	2006	2007	2006	2007
Total taxes paid	336,370,000	466,828,000	355,404,000	298,549,000	456,500,000	411,500,000	8,024	6,253	14,636	9,716	4,479	5,605
Net income before taxes	1,936,562,000	2,461,122,000	2,059,957,000	1,465,112,000	2,772,116,000	2,161,988,000	46,255	33,904	101,083	80,907	44,694	45,555
Dollar Gap Ratio/Equity Capital	**42%**	**47%**	**-17%**	**10%**	**-86%**	**-122%**	**-133%**	**-373%**	**12%**	**7%**	**49%**	**-62%**
Dollar Gap Ratio	2,978,451,000.00	4,933,096,000.00	-1,906,837,000.00	499,294,000.00	-5,944,381,000.00	-11,554,478,000.00	-226,661.00	-545,504.00	39,313.00	26,426.00	73,025.00	-113,646.00
Rate sensitive assets	45,627,807,000	52,621,983,000	63,403,320,000	25,611,676,000	42,510,792,000	60,514,254,000	589,680	1,025,221	1,988,781	2,831,267	1,661,734	2,131,490
Rate sensitive liabilities	42,649,356,000	47,688,887,000	65,310,157,000	25,112,382,000	48,455,173,000	72,068,732,000	816,341	1,570,725	1,949,468	2,804,841	1,588,709	2,245,136

A Game Theoretic Approach of IMF-Turkey Agreement Talks

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Abstract

In this paper IMF and Turkey agreement talks are analyzed by using the tools of game theory. It is certain that game theory tries to seek the pay offs among limited number of agents in a well defined situation. In this paper a game theoretic scenario is formed and explained regarding the behaviours of the players in the game regarding the expectations of the financial markets. In game theory assumptions players behave in a rational way and do not cheat each other to reach Nash equilibrium. The result of IMF-Turkey agreement talks display a player violates these principles and creates another new equilibrium between IMF, Turkey and financial markets. In that case the results of the agreement talks indicate that how and for what cost a player would not choose Nash equilibrium and how financial markets can change their expectation and pay off for the new outcome. In this paper structure and process of IMF-Turkey agreements talks are also analyzed and discussed in this framework.

1. Introduction

In daily life our behaviours and decisions bring results. Our decisions and behaviours are chosen among different alternatives in order to increase (maximize) profit, utility or happiness. However results of the outcomes do not only depend on what we do or not. We generally face a counter side which affects the outcomes which can be generalized as the decisions or behaviours of "others". Thus the outcomes are determined by result of interdependent behaviours. This interdependence finds itself a theoretical and mathematical background in micro economics as "game theory" regarding to display how

can players maximize the outcomes in the framework of given conditions, given players (especially in oligopoly markets) and given results.

Game theory has also assumptions as the other assumptions have. Game theory figures out interactions (the interdependence that I mentioned above) among rational actors produce outcomes regarding to the alternatives of those players, none of which might have been intended by any of them. This is classical game theory. Turocy and Stengel (2001) define the game theory as "the formal study of conflict and cooperation". Game theoretic concepts apply whenever the actions of several agents are interdependent. These agents may be individuals, groups, firms or governments. According to Roger (1999) Antoine Cournot in 1838 used game theory analysis in order to explain duopoly markets. Next the mathematician Emile Borel suggested a formal theory of games in 1921, which was furthered by the mathematician John von Neumann in 1928 in a theory of games. According to Roger (1999) Nash displayed finite games have always have an equilibrium point, at which all players choose actions which are best for them given their opponents choices. This central concept of non-cooperative game theory has been a focal point of analysis since then game theory gained importance in 1994 with the award of the Nobel prize in economics to Nash, John Harsanyi, and Reinhard Selten. Rubinstein (1991) states game theory is viewed as an abstract inquiry into the concepts used in social reasoning when dealing with situations of conflict and not as an attempt to predict behaviour.

There are different types of game theory according to assumptions of the theorists. Izquierdo (1999) states classical game theory is a branch of mathematics devoted to the study of how instrumentally rational players should behave in order to obtain the maximum possible payoff. But the assumptions of this field cause problems. The problem in classical game theory is rational behaviour for any player remains undefined in the absence of strong assumptions about other players' behaviour. Thus to make specific predictions about how rational players should behave is often necessary to make very difficult assumptions about everyone's beliefs and their interdependent consistency. Izquierdo (1999) mentions that when game theoretical solutions have been empirically tested, disparate anomalies have been found by scholars. Even when the most difficult assumptions are in place, it is often the case that several possible outcomes are possible,

and it is not clear which one will be achieved, or the process through which this selection would happen. Thus, the general applicability of classical game theory is limited.

Friedman (1998) defines another type of game theory which is evolutionary game theory that "any formal model of strategic interaction over time in which higher payoff strategies tend over time to displace lower payoff strategies, but there is some inertia, and players do not systematically attempt to influence other players' future actions". Friedman (1998) states first condition is a version of the basic survival of the fittest, while second distinguishes evolutionary change from revolutionary change and means that aggregate behavior does not change too abruptly. Underlying reasons include various sorts of adjustment costs, or informational imperfections, or perhaps bounded rationality. Herber (2009) states that in place of the one-shot and repeated games of classical game theory, Maynard Smith introduced the notion of the repeated random pairing of agents who play strategies based on their genome but not on the previous history of play. The evolutionary game theory is particularly useful because it says something about the dynamic properties of a system without being committed to any particular dynamic model. However, an evolutionary system with a symmetrical two-player stage game can be dynamically stable without being an evolutionary stable. Stanford encyclopedia of philosophy defines evolutionary game theory as "an application of the mathematical theory of games to biological contexts, arising from the realization that frequency dependent fitness introduces a strategic aspect to evolution". Moreover evolutionary game theory has called attention of different experts of different fields because applications of evolutionary game theory are closer to real life examples than classic game theory.

2. Literature Review

Game theory methodology has become an important tool to compare and figure out the costs and benefits of players. There are different studies exist using tools of game theory for different subject of social sciences and political economy. Game theory is very useful for analysis especially we cannot calculate the cost by referring a definite number of a currency that Gibbons (1997) state that game theory is useful because game theory lets researchers to think like an economist when price theory does not apply. As Gibbons

(1997) underlines game theory allows scholars to study the implications of rationality, self-interest and equilibrium, both in market interactions that are modeled as games and in non-market interactions

Vreeland (1999) analyzes the IMF-Government relations and argues that by tying their hands with IMF conditionality, governments can increase their bargaining leverage with domestic opponents of economic reform. Vreeland (1999) offers that governments use IMF conditions to push through their preferred policies, which otherwise would not be approved. Correa (2002) investigates analysis international relations and study uses tools of game theory. Correa (2002) also figures out that analysis of games leads to the conclusion that peace is likely to prevail in continuous interactions involving only democratic or non-democratic states, but not in those among democracies with non-democracies.

Keohane (1988) examines international institutions based on rationality under the assumptions of game theory. Snidal (1985) underlines the game theory of international politics and states diverse international issues can be handled within a common game-theoretical framework which does not suppress that diversity but builds upon it to explore the implications of various contextual differences. In a different perspective Mesquita (2006) seeks the study of war and peace in the framework of game theory and political economy and states that the combination of non-cooperative game theory as an analytic tool and the assumptions of political economy models about leaders' domestic interests and incentives offer a different explanation of international from that suggested by realistic theories and other state-centric view points.

A more technical study of Meijide and Bowles (2005) examine an IMF application and they compare the empirical properties of the coalitional and traditional power indices keeping the game fixed or allowing for variations in its set of parameters. Goodhart (1994) examines the game theory of central banks. Mailat (1998) questions whether players prefer Nash equilibrium or not by referring evolutionary game theory.

3. History of IMF-Turkey Relations and the Agreement Process

Turkey became member of International Money Fund (IMF) in 1947. Turkey signed her first stand-by agreement in 1961. Since 1961 Turkey signed 19 stand-by agreement with IMF and has borrowed 50 billion $ credit from the fund. 19th stand-by agreement ended in May 2008 and 8 billion $ debt will be paid until 2013 by the Turkish Government.

World economy is still under the pressure of a financial crisis which was triggered by the mortgage credit defaults in the US since 2008. Many reputable investment banks failed because of credit defaults all over the world. This credit risk of the banks is transferred to government's budget deficits. The concept "too big to fail", which is often used for large-scale firms, is also used for governments and emerging market economies. That's why many emerging markets (even in the EU) signed agreements with IMF in this turmoil.

Turkey has been affected by the financial crisis and she started to negotiate with IMF. After 2008, in 20 months time government announced 8 times "Everything is ok with IMF". Besides IMF officials announce that they are very close to an agreement with Turkey. Officials of the government often announced that "Both sides are close to an agreement." Minister of government of Turkey said in a meeting that "We (government) are close to reach an agreement". Besides, minister of finance announced that "Agreement would be for at least for 18 months at most 36 months". Moreover Turkish Radio Television Corporation, which is state owned television company, state that agreement would be for 36 months and the amount of credit would be 45 billion dollar. Lastly Prime Minister of Turkey state that in a press release agreement can be signed in a week or in two days. Private sector also supported the agreement. Private sector claimed that a higher growth rate could be achieved with IMF agreement.

In the framework of this announcement Turkish government displayed a positive attitude regarding agreement. It is a fact that ruling government signed the last two stand-by agreements. Financial markets expectations were also in line with the government's

announcements. We take the announcements as a base and form a table which shows the positive and negative aspects of a new stand-by agreement with IMF.

Table 1

Positive Aspects of Agreement for the Government	Positive Aspects of Not to Agree for the Government
Finance of the debts	Elections
+ Signal to international markets	Political pressure
+ Signal to domestic market	
Low interest rates (Treasury is going to pay 200,3 billion Turkish Lira (TL) in 2010 as a debt payment, total debt payment public+private=500 billion TL)	
Municipalities are in debt of %50 treasury receivable	
Structural Reforms and Independence of Income-Control Administration	

Turkey has a debt burden both internal and external and since 2001 Turkey has become a net debt payer country. Thus when the markets in a turmoil Turkey might difficulties to roll over her debts or because of higher interest rates might increase the budget deficit. Because of this a long term credit with low interest rate might help Turkey to come over the financial crisis in the world. Besides that an agreement with IMF creates a positive signal to both agents in international and domestic markets. The content of the agreement with IMF also involves some structural developments such as independency of Income-Control administration, to control the budget and consumption of municipalities. These are important reforms because the debt of municipalities forms the % 50 treasury receivable in the budget.

On the other hand there might be negative aspects of an agreement with IMF. For instance government might be criticized by the objection parties because of an agreement with IMF (however ruling party signed two stand-by agreements and re-elected two times). This may create a decrease in the votes of ruling party in the following elections.

Finally even the top officials of the government and positive declaration of IMF, Turkey chose not to agree. However the expectations of the financial markets were built on there would be an agreement. But the worse outcome is government lost credibility. The interesting interaction revealed between government and financial markets. Financial markets changed their expectations and pay offs after the announcement of government that there would not be an agreement.

4. Methodology

Even game theory eases the analysis of outcomes of decision it is difficult to compare ordinal pay offs instead of cardinal pay offs when there is a game regarding political issues. There are studies which handle ordinal pay offs. Cruz and Simaan (2002) in their paper, present a theory where, instead of a payoff function, the decision makers are able to rank order their decisions against decision choices by the other decision makers. Peterson (2005) states ordinal games define the decision space in terms of player preferences, rather than objective function values. This concept lets the techniques of cardinal game theory to be applied to ordinal games. Peterson (2005) in his thesis underlines a complete characterization of Nash solutions in ordinal games.

As the articles of agreement imply a number of crucial consequences regarding the economic agenda in Turkey, whether the agreement is realized is expected to have significant implications not only for the two parties of the agreement, Turkish government and IMF, but also for the other economic agents in Turkey. Among those agents the financial markets is worth to pay additional attention as it is likely to be affected to a great extent by the implications of the agreement and to be the channel through which these implications will spread to the other agents. Therefore, while analyzing the outcomes the agreement, we will consider three main agents: IMF, Turkish government and the financial markets in Turkey. As the outcome for each party depends on the decision of the other, we will carry out the analysis within a game theory framework.

Three games will be considered in the rest of this chapter: first is the one between the government and IMF and the second is between the government and financial markets while the third one is a modified version of the second game –the reason for the modification is explained below. The reason why we do not attempt to present it as a three-player game is that although the financial markets' choice has an influence on government, it does not directly affect the IMF.

Before we give ordinal numbers for the game, we display the game by using letters. We rank the letters according the choice and expected utility from these choices. We say that a>b>c>d regarding the ranking of the pay offs.

Table 2

	IMF	
a>b>c>d	Agree	Not Agree
Government Agree	a,a	d,b
Not Agree	c,b	c,c

The highest utility is given "a" because both government and IMF announced that they are very close to an agreement and we state the benefits and cost of the agreement above for the government (a,a). A successful agreement also can increase the reputation of IMF and its policies. The worst scenario would happen if IMF does not agree when Turkey wants an agreement (d,b). This situation would put Turkey in very bad position. If both sides do not agree this would completely decrease their consistency and credibility (c,c). Because they announce that they are close to an agreement and the expectations in the market have been formed based on these assumptions. Finally if Turkey does not agree and IMF wants to agree (this is the case what happened in real life) this creates a negative outcome regarding her credibility and she has to give up the positive aspects of the agreement.

Let's show the expected utility of pay offs for government and IMF.

Table 3

a>b>c>d	
Government (Y)	IMF (X)
a(y)+d(1-y)>c(y)+c(1-y) ay+d-dy>cy+c-cy y(a-d)+d>c y(a-d)>c-d y>c-d/a-d	a(x)+b(1-x)>b(x)+c(1-x) ax+b-bx>bx+c-cx ax-2bx+cx>c-b x(a-2b+c)>c-b x>c-b/a-2b+c

In this table it is easy to see that the difference between (a-d) is absolutely more than (c-d). Let's see an application of this game by using numbers. We choose a very close range between numbers to empower our assumptions. The numbers are chosen consistently with assumptions of the possible positive and negative outcomes of the agreement. The first game is presented in the strategic form in Table 4. Note that the sign and the magnitude of the payoffs are selected in accordance with the possible economic consequences of making an agreement for both parties as discussed in the previous chapter.

Table 4

	IMF Agree	Not Agree
GOV Agree	2,2	-2,0
Not Agree	-1,0	-1,-1

Obviously, played with pure strategies, this game has an unique Nash equilibria where both government and the IMF choose to accept the agreement. On the other hand, if the players implement mixed strategies, i.e. each player forms well defined beliefs about the

strategies adopted by his opponent and choose his action accordingly, we will have the following condition

$$\prod_1 (A,(\sigma_{2A},1-\sigma_{2A})) > \prod_1 (D,(\sigma_{2A},1-\sigma_{2A})) \leftrightarrow \sigma_{2A} > 1/4$$

This condition implies that given the probability assigned by player 1 to player 2 playing "agree" is σ_{2A}, the payoff of playing "agree" for player 1 is larger than the payoff of playing "disagree" if and only if σ_{2A} takes a value higher than ¼. In this case, the best response correspondence for player 1 is given as follows.

$\rho_1(A_2) = 0$ if $\sigma_{2A} < 1/4$,

$[0,1]$ if $\sigma_{2A} = 1/4$,

1 if $\sigma_{2A} > 1/4$

Similarly, given that the assigned by player 2 to player 1 playing "agree" is σ_{1A}, we have the following condition

$$\prod_2 (A,(\sigma_{1A},1-\sigma_{1A})) > \prod_2 (D,(\sigma_{1A},1-\sigma_{1A})) \leftrightarrow \sigma_{1A} > -1$$

which suggests that IMF will end up with higher a payoff if he chooses to play "agree" for any probability assigned to government playing "agree". Thus, the best response correspondence for player 2 is

$\rho_2(A_1) = 1$ for all $\sigma_{1A} \in [0,1]$.

As demonstrated in figure-1, the Nash equilibrium of this game under mixed strategies occurs at the point where the best response correspondences of the players coincide, that is (agree,agree).

Figure 1
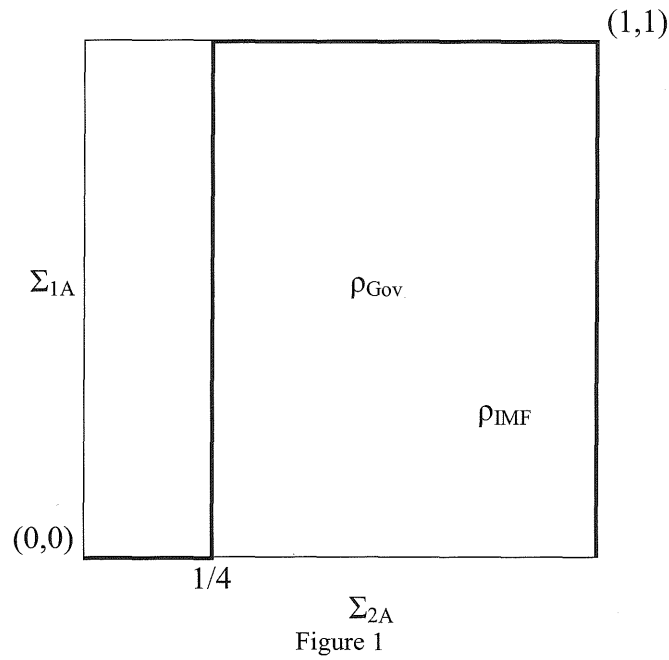
As mentioned above, although the financial markets does not directly take place in the agreement process, it is likely to have an influence on the government' decision regarding the agreement and undoubtedly, it is affected by the outcome of the first game which partially depends on government's decision. In other words, the decisions of the financial markets and the government are interdependent. This interdependence justifies the second game we present. The strategic form representation of the game is given by Table 5.

Table 5

	Fin Markets Agree	Not Agree
Government Agree	2,2	1,0
Not Agree	-1,-2	-1,-1

Once again, note that (agree, agree) is the Nash equilibrium with pure strategies. When we consider the mixed strategies, the probability assigned by player 1 to player2 playing "agree", σ'_{2A}, should satisfy the following condition

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$\Pi_1(A, (\sigma'_{2A}, 1-\sigma'_{2A})) > \Pi_1(D, (\sigma'_{2A}, 1-\sigma'_{2A})) \leftrightarrow \sigma'_{2A} > -2$.

Therefore, the best response correspondence for Player 1 is

$\rho_1(A_2) = 1$,   for all $\sigma'_{2A} \in [0,1]$.

Through the same reasoning, the relevant condition for player 2 is

$\Pi_2(A, (\sigma'_{1A}, 1-\sigma'_{1A})) > \Pi_2(D, (\sigma'_{1A}, 1-\sigma'_{1A})) \leftrightarrow \sigma'_{1A} > 1/3$.

The best response correspondence for player2 is given as

$\rho_2(A_1) = 0$ if $\sigma'_{1A} < 1/3$,

$[0,1]$ if $\sigma'_{1A} = 1/3$,

1 if $\sigma'_{1A} > 1/3$.

Figure-2 shows clearly that the only Nash equilibrium with mixed strategies is where both parties choose the strategy "agree".
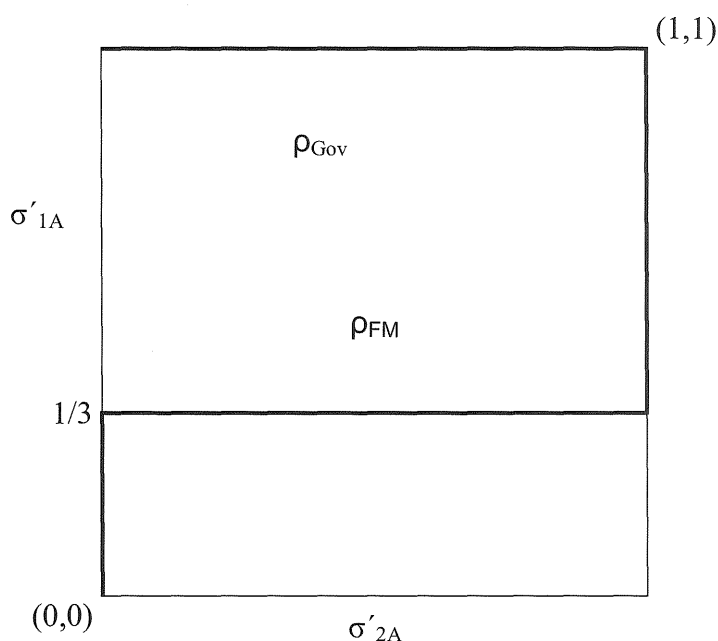

Figure 2

We defined the payoffs of the second game in the light of the declarations made by the financial markets prior to the failure of the agreement process between the government and IMF. As implied in those declarations and thus reflected in the payoffs, the markets had

favored the realization of the agreement. However, after the government announced that the negotiations with IMF were suspended, the financial markets changed the course on the necessity of the agreement. If one were to modify the second game in the light of the latter declarations, the new version would look as we represented in Table-6.

Table 6

	Financial Markets Agree	Not Agree
Government Agree	-1,-1	1,0
Not Agree	-1,-2	2,2

Thus the new best response correspondences of the government and the financial markets would respectively be

$\rho_1(A_2)=0$ if $\sigma'_{2A}<1$,

$[0,1]$ if $\sigma'_{2A}=1$.

$\rho_2(A_1)=0$, for all $\sigma'_{1A} \in [0,1]$.

In this modified version of the second game, the Nash equilibrium with mixed strategies would be given by intersection of those best response correspondences where both players choose "disagree" (see Figure-3).

Figure 3
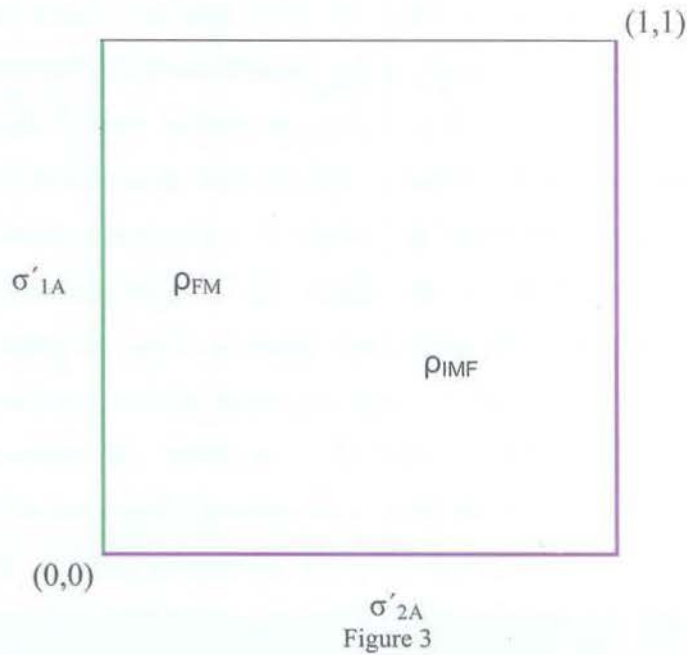
The actors of the financial markets in Turkey, who support the agreement with IMF, quickly changed their mind after the government declaration. The players, who underline the positive aspects of IMF agreement, announced that Turkey does not need this agreement with IMF. By this way they pretend to transform their negative pay offs into positive pay offs.

5. Conclusion

In this paper we make a brief review of game theory and refer the relevant literature regarding social sciences. Next history of Turkey-IMF and last agreement process are analyzed. Then we form two different games between Turkish Government and IMF, and Turkish Government and financial markets in Turkey. We find that there exist Nash equilibrium in the game between government and IMF, and government and financial markets. However we observe that government does not prefer this choice (Nash equilibrium) and choose one of the worst scenarios. On the other hand in the game between government and financial markets we again find Nash equilibrium. However government again does not prefer this choice. The interesting situation after this controversial choice financial markets behave as government's choice is its best choice.

During ongoing games you cannot cheat the other side more than once. In our game formation we build the pay offs regarding the announcement of the players and potential benefits and costs of the agreement. In this case government manages the expectations as if she would sign the agreement. However at the end government does not sign the agreement even signing the agreement is Nash equilibrium choice. This completely caused a credibility loss for government. Besides that by this way government gives up structural developments by saying no for the agreement. Because of this government credibility can create a load on tax payers' cost and market if a crisis re-emerges. Government gives up the all benefits of IMF agreement instead of winning the following elections and decreasing the political pressure on itself. Government chose one of the worst options according to what he announces regarding the agreement process. Market adopts this situation very quickly. But we cannot calculate the cost of this quick adoption. By these adoption financial markets pretend to change its negative pay off into positive pay offs. Our analysis reveals that even there exists Nash Equilibrium in the game; one of the players may not choose this strategy. This is a strong critique regarding the players are always behave in a rational way. The case that we analyze in this paper displays that political actors may disregard the Nash equilibrium for short term benefits. This comparison can be analyzed and measured in future studies. Moreover another issue should be examined is the perception change of the market. If the conjecture lets financial markets can transform worst outcome into best outcome. But this finding should be supported by indicators of the market in another study. Finally we want to ask a question to emphasize the cost of not choosing the Nash equilibrium for government that what happens and what would be the pay offs if an agreement process would restart with IMF and government?

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Patient Satisfaction and Self-Assessed Health on Primary Health Delivery Offices

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Abstract

Patient satisfaction and self-assessed health have become a key criterion to evaluate the quality of health care services. These evaluations can determine the factors that explain patient satisfaction and self-assessed health. The information obtained from such assessments becomes an essential input for policy makers for the implementation or improvement of social programs. The goal of this study is to examine the perception of health status and patient satisfaction of the Primary Health Delivery Offices in Costa Rica. The study uses a national survey for the analysis.

1. Introduction

Over the last thirty years, researchers have shown a special interest in health economics. This is because economic development cannot be achieved without social opportunities and successful health coverage (Collazo, Cardenas, González, Abreu, and Casulo, 2002). According to Amartya Sen (1999), health is necessary for comprehensive development, and should not be considered a mere tool to reach development.

Health economics integrates concepts, theories, economic and health models with the goal of analyzing production, financing, distribution and consumption of health services (Arredondo, 1999). Health economics resolve problems of what, how and for whom to produce in the health sector; but also develops evaluations, instruments and strategies to resolve a great amount of problems and eventualities that this science must deal with.

1.1. Patient Satisfaction with Health Services

Initially, satisfaction in health care was studied only by health providers. It is since the seventies that researchers consider that the best way to meet the expectations of patients is using a direct approach to them (Diaz, 2002). Close relationship between patients' satisfaction and the services' quality has been confirmed in many studies (Biedma and Serrano, 2007); (Young, Meterko, and Desai, 2000); (Zastowny, Roghmann, and Hengst, 1983); (Barrasa and Aibar, 2003). Therefore, health care centers have been concerned not only in meeting the health needs, but also the patients' expectations (Mira and Aranaz, 2000). Diaz (2002) sees the patient as the center of services and their level of satisfaction as a key indicator for the quality of care.

1.1.1. Determinants of Satisfaction

Mira and Aranaz (2000) define patient's satisfaction as a "multidimensional (concept) whose components vary according to the type of benefit involved (…) most closely related to the affective component of attitude towards the health system". (Mira and Aranaz, 2000, p. 10) Attendance to the health centers is not due exclusively by the need to cure or alleviate a disease. The decision is actually conditioned by diverse factor such as the urgency of the consultation, human and professional quality of the staff and family pressure. Mira and Aranaz (2000) explain that there are factors beyond the purely physical need of health. The comments of other patients on a doctor's treatment influence a patient's decision of attending the clinic. In general, the social environment's influence on the patient is a key element of patient satisfaction. Zastowny and others (1983) explain that socio-demographic variables should be included regardless of the type of study. This is due that in most cases this variables explain much of the behavior and satisfaction of an individual.

1.1.2. Patients' characteristics

In most patients' satisfaction analysis, characteristics of patients are important variables to evaluate satisfaction (Biedma and Serrano, 2007) (Hall, Feldstein, Fretwell, Rowe, and Epstein, 1990). The main variables included in this type of study are: age, sex, educational level, income, marital status and health status. However, according to Mira and Aranaz (2000) there has been contradiction in the results regarding the relation between this variables and the client's satisfaction. They explain that there is a slight tendency that shows that older people tend to be more satisfied with health services, but these results are not common in all investigations (Biedma and Serrano, 2007) (Hall, Feldstein, Fretwell , Rowe, and Epstein, 1990). Mira and Aranaz (2000) explains that it has been proven that women tend to value more the health services, reporting to feel more satisfied with health care service (Young, Meterko, and Desai, 2000) (Linn, 1975) (Sixma, Spreeuwenberg, and van der Pasch, 1998).

Most research on patient's satisfaction establish perception of health status as a variable predictor of satisfaction, yet the results have not always shown this relationship (Mira and Aranaz, 2000) (Young, Meterko, and Desai, 2000) (Zastowny, Roghmann, and Cafferata, 1989) (Sixma, Spreeuwenberg, and van der Pasch, 1998). It has been argued that a patient with a chronic illness might shown dissatisfied with health services due to their health status, or rather be satisfied since they appreciates further attention due to their health problems (Mira and Aranaz, 2000) (Hall, Feldstein, Fretwell, Rowe, and Epstein, 1990).

Including patient's characteristics in the analysis of satisfaction is important, because quality problems should not be entirely attributed to service providers. Young and others (2000) explain that there are external factors that health care organizations are not able to control, such as age and epidemiological profile.

1.1.3. Characteristics of providers

Zastowny and others (1983) emphasizes the importance of the doctor-patient interaction during the provision of health services. The trust that the doctor transmits to his patient is good indicator of satisfaction (Mira and Aranaz, 2000). Some of the main doctor-patient interactions are: sensitivity of the doctor, patient's satisfaction with the doctor, length of the consultation, communication, doctor's activity during the medical appointment, the quality of the diagnosis, among others. (Mira and Aranaz, 2000) (Sixma, Spreeuwenberg, and van der Pasch, 1998) (Ware and Snyder, 1975) (Zastowny, Roghmann, and Hengst, 1983)

1.2. Self-perceived Health Status

The concept of health implies subjectivity, and its determination implies non-clinical factors (Gallegos, García, Durán, and Durán, 2006). The self-perception of health status incorporates social elements that regular indicators cannot attain, such as the influence of age, sex, and education (Zimmer, Natividad, Lin, and Chayovan, 2000). Analyzing the factors associated with self assessed health can broaden the perspectives for the identification of health needs (Gallegos, García, Durán, and Durán, 2006).

Mossey and Shapiro (1982) provide empirical evidence on how self-assessments of health are a better instrument to predict mortality in patients, compared with health records. The results of Mossey and Shapiro have been confirmed in epidemiological studies on how self-rated health is as a predictor of mortality (Idler and Kasl, 1991).

Zimmer and others (2000) use others health measures like social networks, disability and life style (Rosenthal and Shannon, 1996) (Goldman, Lin, Weinstein, and Lin, 2002). Disability and chronic illness of the population are indicators of the severity of the illnesses. Social networks represent psychological characteristics of the patient.

1.3. Costa Rica

In Costa Rica, the Health Ministry is the entity in charge of coordination and technical control of the health service system, which pretends to be a source of good health and well-being to the whole population. The National Health Service (NHS) is the institution in charge of executing the activities to give integral attention in health. In Costa Rica, primary health care exist since the sixties, but thirty years later a health care reform was implemented, creating the National Health Insurance, allowing a wider coverage and a improvement in health indices. Another result of the reform was the creation of the Primary Health Delivery Offices (PHDO). The creation of an innovative integrated primary health care scheme based on basic health care equipment that was expanded over the country. The PHDOs provides attention to an average of 3,500 inhabitants. According to Muiser and others (2007), a population catchment area in general coincides with a clinic that coordinates the work of all the PHDOs in that zone. Also, each clinic has more than one PHDOs and each community health center has one.

The PHDOs' provide basic human resource: a general practitioner, a nursing assistant and a technical assistance in primary health care. National Health Service (NHS) is responsible for health care attention in Costa Rica; however, in recent years the government has purchased health care services to cooperatives, without privatizing the attention (Salas and Castillo, 2003). The implementation of the PHDOs across the country achieved an extraordinary social impact, raising health care coverage attention to places where social insurance had not gone before. (Rosero Bixby, 2004)

2. Model

The analysis use a national survey of the PHDO administrate by the NHS and cooperatives. The survey was developed at the University of Costa Rica in July of 2007[1] and the information was gathered through direct interviews in households. The survey realized a particular selection process of the PHDOs with the ends of realizing comparisons taking in mind the context in which each health center is located.

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[1] For more information see: http://www.ccp.ucr.ac.cr/farmacoeconomia

With the survey, PHDO pairs are obtained. Each pair possesses similar socioeconomic characteristics, but differs in management; in other words, either administrated by the NHS or a cooperative (Sáenz, 2008). Four PHDOs managed by cooperatives and their respective pairs were consulted. They were identified as shown in Table 1.

Table 1: Cooperatives and their pairs

Cooperatives	NHS Pair
1	1P
2	2P
3	3P
4	4P

The survey uses the Social Development Index of the cantons as reference for the selection of the pairs. The Index possesses four dimensions: economic, social participation, health and education.[2] A factor analysis was realized to determine the PHDOs that were located in similar zones. The households interviewed were selected randomly and only the family members 15 years or older who used the service during 2007 were interviewed. From the total amount of people interviewed, only 508 people met this requirement.

The modules of the survey that were studied are: satisfaction, health status, and socioeconomic characteristics. These modules included satisfaction questions about: waiting time, accessibility, trust and interaction with the staff. Table 2 details the questions utilized for the analysis.

Table 2: Questions regarding satisfaction

Time	Interaction with staff
Time dedicated by the physician to the consultation	Treatment of secretary staff
Drugs deliverin's delays	Treatment of infermary staff
Confianza	Treatment of medic staff
Trust and security in the physician	Explanation of illnes or condition
Trust and security in the nurse	Explanation of prescripted drugs
Acceso	Explanation of ingesting the drugs
Work schedule	

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[2] For more information see: http://www.mideplan.go.cr/sides/social/indx10.htm

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2.1. Study's Design

The study creates a satisfaction index from the survey's questions and do analysis about health status' perception with other socio-demographic variables. The study's design consists in four stages that are detailed below.

2.1.1. Reliability Analysis

The Cronbach's Alpha is calculated to measure the satisfaction questions' reliability. This static use the average of all correlations of the questions to determine if they are related. The Cronbach's Alpha takes values between 0 and 1. It can be said that it measures the homogeneity of the survey's questions, in this case the Satisfaction Index.

2.1.2. Factor Analysis

This analysis allows confirming the instrument's validity, so as to confirm the items' grouping. It explains the correlations of a group of variables by the correlations of a smaller group of variables or factors. The most frequently utilized criteria to validate instruments in the factor analysis are percent variance explained by the factor and the scree plot.

2.1.3. Creation of the Satisfaction Index

Once the validity and reliability of the instrument has been confirmed, the Satisfaction Index is created using a similar methodology to the one used in the Human Development Index[3] of United Nations. The Satisfaction Index's takes values between 1 and 5, were 1 is a very bad service and a 5 an excellent one.

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[3] Ver http://hdr.undp.org/es/estadisticas/indices/idh/

2.1.4. Satisfaction Index's Analysis and Health Status Perception

Some of the relationships between the satisfaction index, socio-demographic variables and health will be explained. The socio-demographic variables that will be used are: age, sex, educational level, and marital status. The health variables used in the study are: self perception of the health status and existence of chronic diseases such as: diabetes, high cholesterol and arterial hypertension. It also includes comparisons between the PHDOs' management.

3. Analysis and Conclusion

3.1. Population's Characteristics

The population's socio-demographic characteristics are according to what was expected. 60% of the population is women, which reflects not only that there are more women than men, but also that women tend to visit more frequently health centers. By age, most people that visit the PHDOs are those over 40 years. Because of this result it was decided to restring the age to 40 years or more. The elderly represent approximately a 50% of the population that uses the service.

People with educational level of complete primary school or less represent 50% of the population. Patients with some sort of college education represent 20%. Even though the PHDOs are accessible for all the population, they are used mostly by the lower class. People with higher educational level usually have better paid jobs and can assist to private health service. It has also been observed a tendency of a lack of assistance of the upper class to the PHDOs, due to the idea that these kinds of services are for low income class and therefore prefer to assist to hospitals.

Marital status of 60% of the assisting population was married, a 10% were widowed and 14% single. Most of the widowed patients were women, which corresponds to the usual process of aging in which most men usually die at an earlier age.

3.2. Reliability and Factor Analysis

The Cronbach's Alpha was of 0.931, as indicated in Table 3. This result is relatively high and indicates that satisfaction questions in the survey are related. Therefore, results are reliable to construct the Satisfaction Index. The reliability analysis determined also that eliminating the questions "distance from home", "processes to access specialists", "waiting time" and "difficulty to get an appointment" increased the study's reliability.

Table 3

Reliability Statistics

Cronbach's Alpha	N of Items
.931	15

An exploratory factor analysis was made in order to determine the validity of the study. The factor explains a 63% of the items' variance, thereby the instrument is reliable. The scree plot confirms the existence of unidimensionality and the Index can be constructed from the questions.

Finally, once the reliability and validity of the items has been checked, the next step was developing the Index. As mentioned, the methodology consists of taking the average of a group of variables obtained from the analysis. A standardization of the index was not needed, because each component is expressed in the same scale.

Figure 1: Scree Plot
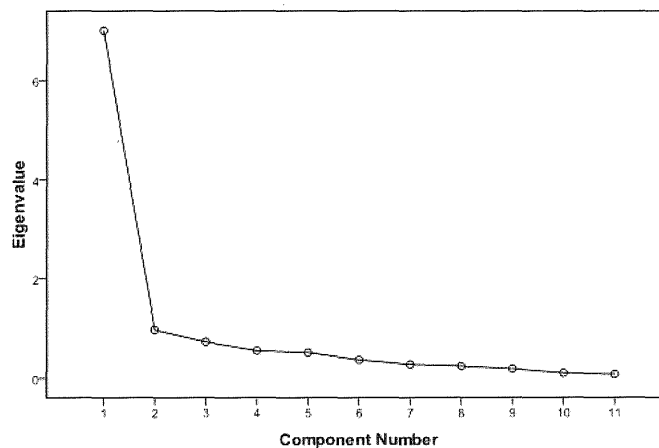
3.3. Results

The results of the Index showed that only 16% of the population thinks the service provided by the PHDOs was regular or bad (Figure 2). There was no answer that qualified the service as "very bad". The Satisfaction Index's results coincided with other studies of the same topic. Nevertheless, it's important to remember that there hasn't been consensus with the results about satisfaction with services and self-perceived health status due to the influence of social context in each every patient.

Figure 2: Satisfaction Index of the PHDO's on July 2007
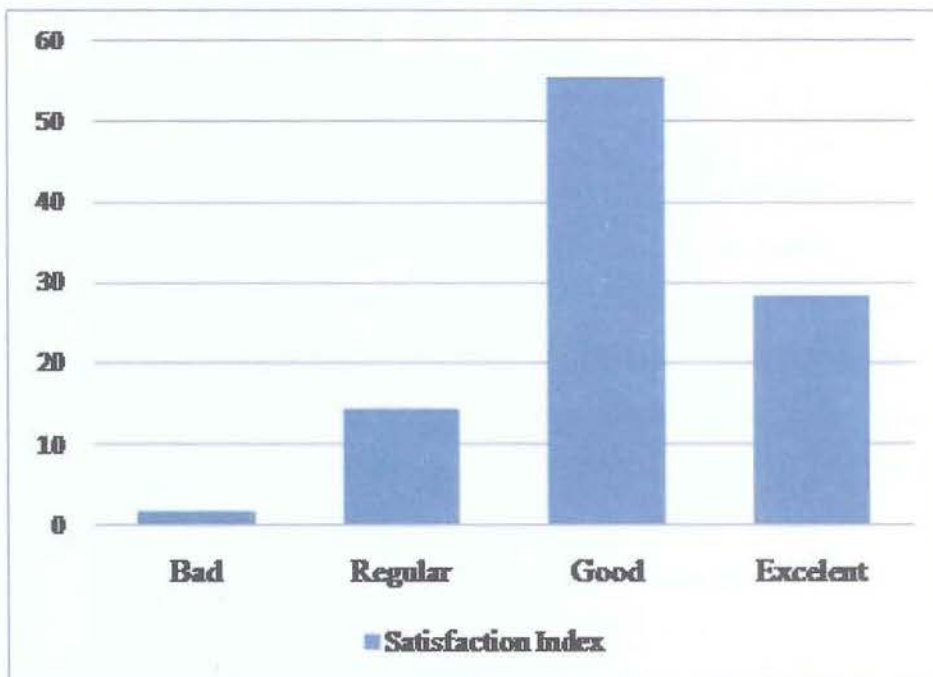
By sex it was determined that 87% of men considered that the service was either good or very good while the correspondent proportion for women was only of 80%. This might be due to women demanding a better attention, given that they are the ones that use the PHDOs more often.

The satisfaction level regarding the self-perceived health status showed that those who perceived to be healthier declared to be more satisfied with the service, as shown in Figure 3.

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Figure 3: Satisfaction Index according self-perceived health status
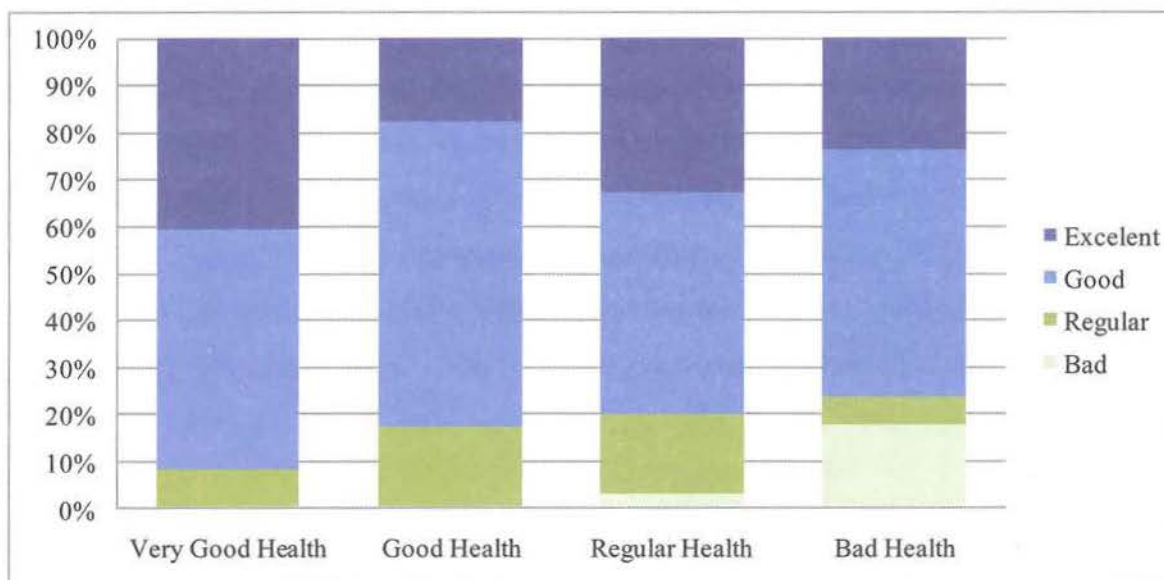
Also, it was determined that grown people over 60 years declared to be more satisfied with the service, even though this age group has a more deteriorated self-perceived health status than the population between 40 a 59 years. Hence it could be considered that even though the patients suffer from some chronic disease and perceive their health a little more deteriorated, they find themselves satisfied by the service because they know they require more health attention. In contrast, it was determined that people over 60 years old who doesn't have diabetes, high cholesterol or arterial hypertension consider their health status better than those who do possess any of these illnesses

The Satisfaction Index according to marital state showed that patients who were divorced or separated showed themselves less satisfied with the service, while those married or in free union were more satisfied with health care service. A similar situation can be found by analyzing the self-perceived health status according to marital state, were 24% of the people either married or in free union considered that their health state was "very good", while only 13% of divorced or separated patients expressed the same. These results coincide with the subjective welfare analysis made by Garduno, Salinas and Rojas (2005).[4] They have found that in occidental societies, been married or with a sentimental partner are more relevant to happiness.

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[4] See http://www2.eur.nl/fsw/research/veenhoven/Pub2000s/2005m-fulle.pdf

Concerning educational level it was found that the most satisfied were the ones with primary school completed or less. A 30% of this group considered the service of the PHDOs to be "very good" while only 23% of people with university studies expressed themselves in a similar way. The explanation of this results is usually due to people with higher educational level tend to be more dissatisfied with the public system while the low education level group don't expect so much from health attention.

One of the main objectives of the study is to compare the satisfaction between PHDOs by type of management. In Graph 7 it can be seen that in three out of four pairs, the PHDOs administrated by cooperatives posses a bigger proportion of satisfied patients compared to their counterparts administrated by the NHS. In the third couple 50% of the patients of the PHDO administrated by the NHS (3P) score the service as "regular" or "bad", while the cooperative counterpart had only a 10% of their patients qualifying the service in that way.

The second pair of PHDOs was the only one that didn't show the satisfaction relation that was expected. There were a bigger portion of unsatisfied patients in the PHDO 2 (cooperative managed) than PHDO 2P. It should be reviewed if the administrative problems that PHDO 2 had with the NHS in those days influenced patients' satisfaction.

Figure 4: Satisfaction Index by management (cooperatives-NHS)

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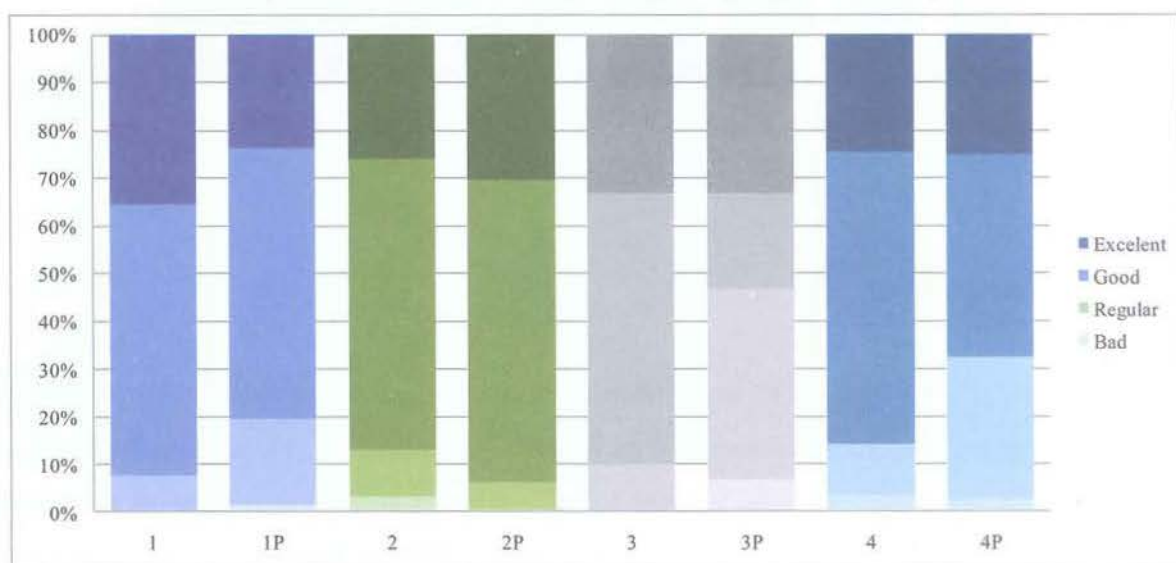
In the case of the first and fourth pair of PHDOs, Figure 4 shows that the proportion of patients that consider the service either regular or bad is pretty clear. The Graph confirms the gap that exists in the satisfaction by difference in management.

The perception of health status showed a singular behavior by PHDO: a mayor proportion of the NHS managed PHDOs perceive themselves as healthy compared to the PHDOs managed by cooperatives (Figure 5). For example, a 78% of the users that assists to PHDO 4 considered themselves as healthy (Health status "good" or "very good") while only 70% of the patients in PHDO 4P considered themselves that way. This result is an indicator of quality and satisfaction, because it is possible that even though most of the cooperatives are giving a good service in terms of management, the users feel that their health status hasn't improved or their illness have not been relieved.

Figure 5: Self-perceived health status by PHDO
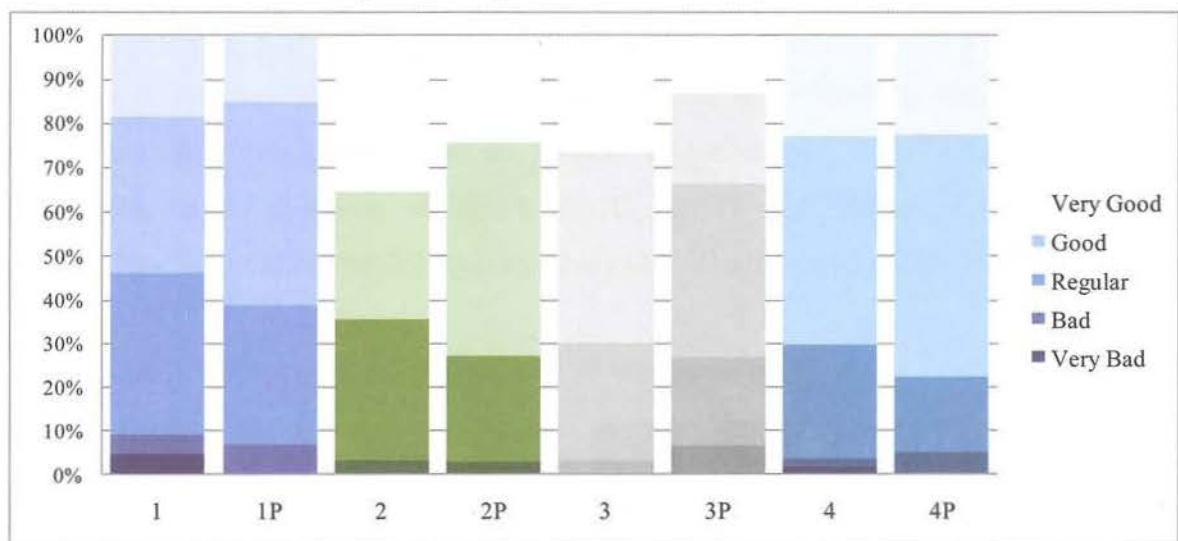
3.4. Discussion

This study found that there are differences in the perceived health status and user satisfaction between PHDOs managed by NHS and cooperatives. There were differences in satisfaction levels by sex, age, marital status, educational level and perception of health status. In addition, most of the cooperative-managed PHDOs had more satisfied users than the NHS-controlled ones. However, the patients of the PHDOs administered by NHS

considered themselves healthier than the patients of the cooperatives' PHDOs. Hence, there are clear differences to be observed in the satisfaction level of the patients according the management level. It is intended in a future study to apply a multilevel regression in order to determine how much does the management differences explain satisfaction.

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China's Capitalism

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Abstract
After WWII, with victory of the Communist party, China seeks to stabilize the economy and improve the life standard by centrally planned economic system with help of Soviets. But state controlled agriculture and industrial efficiency come to end due to the misguided over-control and natural disasters during 1970's. Since the 1980's, China borrowed models from East-Asian countries, and transformed into market oriented socialist economy with several reforms. With its dual system, state owned and non-state enterprises, she did pursue average annual growth rate 9.5 percent (OECD1977-2007). The aim of this paper is to figure out the factors of economic growth in some distinctive periods. Priority of export market, FDI, human capital and high rate of domestic savings are main characteristics of 1980's growth of China.

1. Introduction

After WWII, China began the recovery with communist regime. Organizational change like collectivization and land reforms made. Industry was developed with assistance of USSR. Industry declined sharply in 1967. Human capital investments revised. With the death of the Mao, China revised the economic policy either and Gang of the four, carry out China to 1978 reforms. In the past two decades, China has been the world's fastest growing economy. In 1982, it overtook Germany, the world's third largest economy, in 1992 Japan, the second biggest economy. In 2003 its GDP was about 73 per cent of that in the USA. It seems likely that it will overtake the USA, and become number one before 2020 (Angus Maddison, 2007).

The aim of this paper is to figure out the factors of economic growth in some distinctive periods by looking economy partially as agriculture and industry. This paper consists of five sections that describing distinctive periods of economic evolution of China respectfully.

2. Recovery from the War (1945-1952)

After the surrender of the Japan, civil war went on. Because of the high inflation the middle class was ruined income distribution was unfair. The merchants and landlords were the owners of the most income in the country. Therefore the Communist regime was more favorable than the market system at that time's perspective. Nationalists come victorious in civil war with assistance of USSR. In 1949 Mao declares the founding of the PRC. The chief goal of the government was simply to restore the economy to normal working order. Lack of trade among the regions due to the invulnerable communication and transportation was pushing the price up and worsening the inequality. In order to control the price, state owned enterprises competed with the private sector in buying and selling. Government tightened the fiscal and monetary policy. Nationalized the banks and centralized under People's Bank of China. Therefore the price got more adjustable. Land reform brought redistribution of the land from big landowners to small or no landowners. Industry barely existed. Some mining factories, having very basic technologies, got reconstructed. In this period China succeeded to maintain stability and prepare the base to improve the agriculture by centrally organized policies.

3. Exogenous shock (1953-1962)

Under guidance of the Soviet Union, China developed economic policy based on state ownership. Government collectivized the 93.5% of farmers' production. Collectivization and communal organization brought efficiency rather than feudal discipline, but these reforms did not implement the economy much. Agriculture production was almost 3 times more than industrial. Therefore exogenous downward shock of natural disaster was very influencing to the economy. As showed in Figure 1 agriculture was growing at respectful

pace till the natural disasters. At the same time natural disasters pulled the concentration of government to agriculture more for 1960's.

First, five year plan 1953-57, achieved to develop capital intensive heavy industries namely iron and steel manufacturing, coal mining, cement production, electricity generation, and machine building. Reallocation of sources was concentrated to industry domestically. The import of machinery and technicians were supported from USSR. Industrial output gets 4 times of 1952 in 1960 (LI, 1966). Beside the domestic savings financing the industrial output, human capital was critical factor of the production. As shown in Figure 1 industrial output starts to decline in 1959. Second five year plan 1958-62 was expected to be the "great leap forward". While, with the withdrawal of Soviet assistance starting in 1960, import of the machinery and technicians come to an abrupt. Consequently the government attention on human capital and machinery production increased. GDP in figure 2 was more correlated with industry than agriculture. While industry is 0.89 correlated, agriculture is 0.14 correlated to GDP in this period. It shows us the leap was almost purely of industrial production.

Figure 1: Agriculture and Industrial output 1952-1962 GDP in million 1987 Yuan
(Source: Maddison-Wu Estimates, 2007)
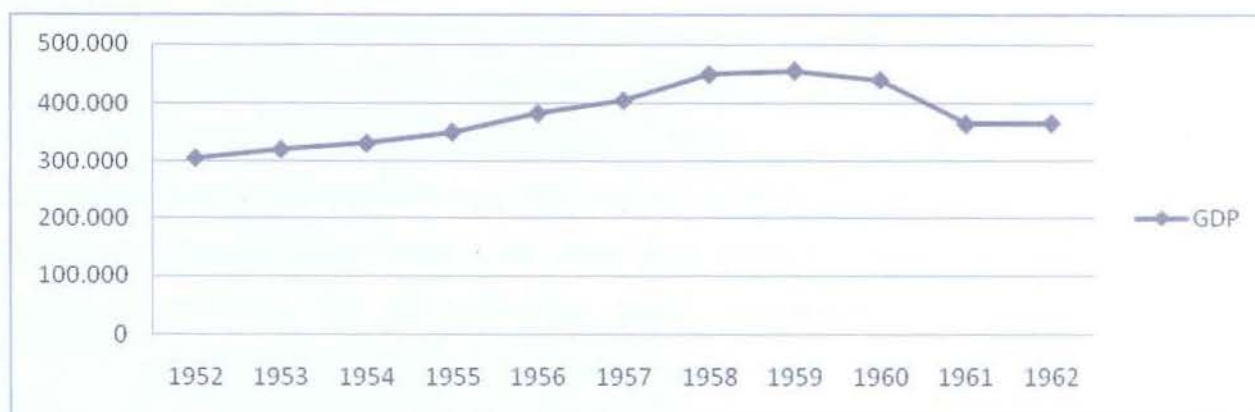
Figure 2: GDP in 1990 US$ 1952-1962 (Source: Maddison-Wu Estimates, 2007)

4. Human Factor (1963-1977)

In this period non-economic policy targets and politic instability has affected the economy. Nature of the centrally planning system, lack of incentives, low productivity brought the end of the socialist system. The managerial problem was the one of the source of inefficiency. Brigades, producing large scale of production, were employed with semi-skilled technicians or basic skilled workers. High educated personal was lacking. Closure of the university during Cultural Revolution (1966-1968) is worsened the situation. Agricultural subsidies take in form of tax reduces and cheap supplies namely supplies of chemical fertilizer and various kinds of agricultural machinery, notably small electric pumps for irrigation. For example agricultural machinery, tractors 59,657 in 1963 was 469,106 in 1977 and per 100 hectares of arable land machinery increased from 0.06 to 0.48 in this period. (World Bank, 2006)

Most damning, incomes per capita were almost the same in the mid-1970s as they were in the mid-1950s. In short, agriculture did not play any of its roles well: it did not (or was not allowed to) supply (a) labor to the nonagricultural sector; (b) sufficient supplies of food to consumers; (c) abundant raw inputs to industry; (d) export to foreign markets; or (e) rising incomes to its own population. (Jikun Huang, 2008) Trade of advanced machinery with Japan and West European countries initiated. Prices were fixed by the state. (Sicular, 1988) Between 1962 and 1978, the price of grain remained almost unchanged, being adjusted only three times, rising by a total of less than 20 percent. Input prices played mainly an

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accounting role, as shortages kept most producers from having access to the quantities that they sought to purchase. (Jikun Huang, 2008) As shown in Figure 3 industrial and agricultural output converged in 1977. The Cultural Revolution 1966-1968, the death of Mao 1976 and earthquake affected the economic growth negatively. As in the figure china is still pre-industrialized country with higher agricultural outputs. Despite, the subsidies and centralized organizational change agriculture was not sufficient for domestic consumption.
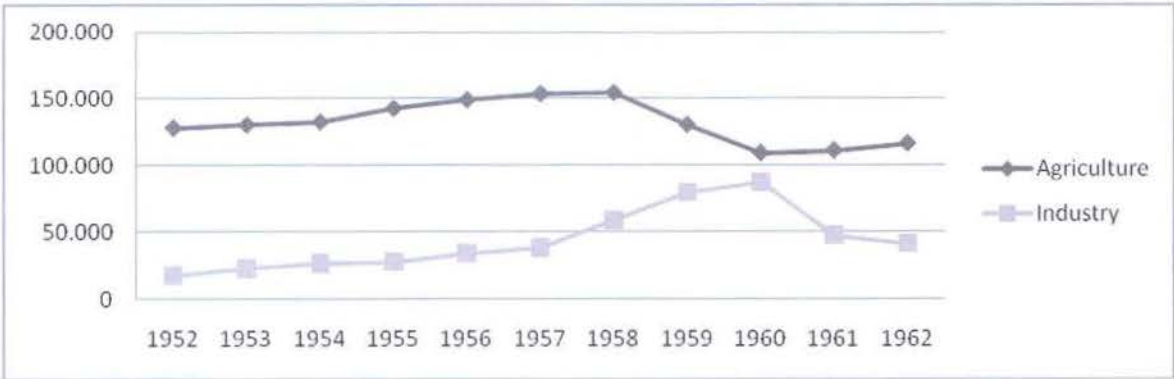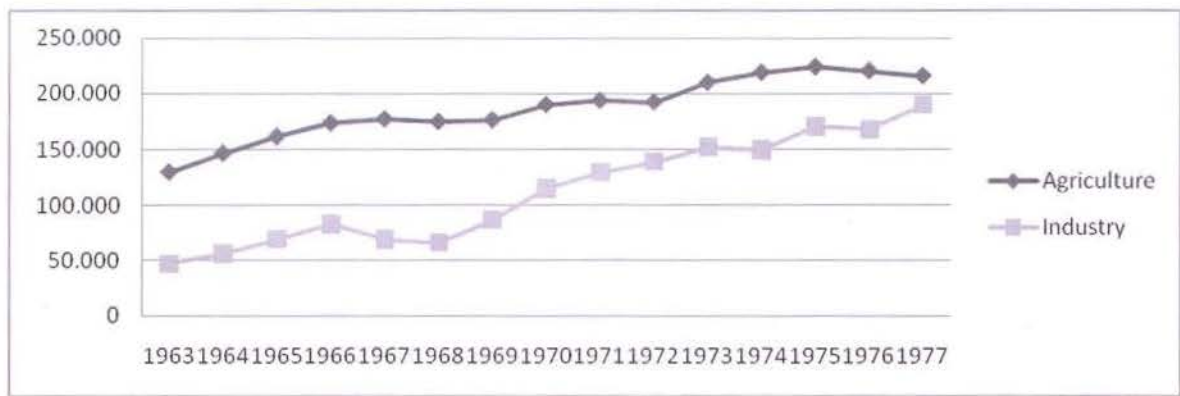

Figure 3: Agriculture and Industrial output 1963-1977 GDP in million 1987 Yuan

(Source: Maddison-Wu Estimates, 2007)

Figure 4: GDP annual growth % 1965-1977(Source: WDI2006)

5. Institutional Change (1978-1997)

As a turning point, Third Plenum of the National Party Congress's 11th Central Committee which opened on December 22, 1978, the party leaders decided to undertake a program of gradual but fundamental reform of the economic system. In 1978 industrial outputs and

agricultural outputs were almost same level (Angus Maddison, 2007) and China herself was far behind the Western industrialised countries and even surrounding East Asian countries. Economic reforms began in China in the mid 1970's with four Special Economic Zones in the soutern coastal regions. Foreign investors began to provide a link between global markets and collectives of villages. Moreover, capital, technology and know-how came in small to medium ventures from overseas Chinese. At the same time, new policies mandating favorable treatment of foreign direct investment (FDI) and a reduction in tariff barriers for these firms contributed to the rapid growth of a foreign enterprise sector, initially in the Special Economic Zones (SEZs) and subsequently, throughout the coastal provinces. As a result, SOEs in many sectors experienced growing competition from both TVEs and foreign linked firms. (Loren Brandt, 2008) Shanghai, Dalian, Tianjin and Guanzhou become important trade cities. At the Third Plenum of the Twelfth Central Committee of the Chinese Communist Party (CCP), in October 1984, the party officially reiterated its commitment to reform of the urban economy, signaling a high priority for industrial modernization. Reform has pushed China into global prominence as a leading exporter of manufactures. The composition of manufactured exports, which have come to dominate China's overseas sales, has shifted from textiles, garments, toys, and other labor-intensive products to a more sophisticated mix led by various types of machinery and equipment. (Loren Brandt, 2008) Institutional change in agriculture was giving priority to incentives. As a further issue, the definition of property right of land appeared. Farmland in China is still owned communally, but gradually shifted the use right of individuals over the reform period. Clearly, agriculture's contribution now extends far beyond mere subsistence, as it now supplies oilseeds for the edible oil sector, horticultural products for the retail food sector, and cotton for the textile industry. (Huang J.A., 2002). Moreover, agriculture became capable of supporting the domestic demand. Even between 1984-1994 years food export was in average above 10% of the total merchandise exports. (World Bank, 2006) The Figure 9 shows that real effective exchange rate had been increasing till 1994. The valuable currency and import of the machinery equipments defected the net trade balance in Figure 10 despite the improvement of manufacturing industry.

GDP becomes 3.5 times of 1978, in 1997 (World Bank, 2006). In 1994 Mexico got into a debt crises covered the Brazil and Argentina. China devalued the Yuan and attracted the

investment from other developing countries like Turkey. (Kazgan, 2002) Most of the capital that does remain in the country is typically destined for SOEs, not for private businesses. The overwhelming portion of bank loans in the 1990s went to state-owned enterprises; until the central government lifted restrictions in 1998, the four largest state-owned banks were simply not allowed to lend to private firms. The only way for private companies to finance growth up until that time was from retained earnings. (Huang Y., 2003)
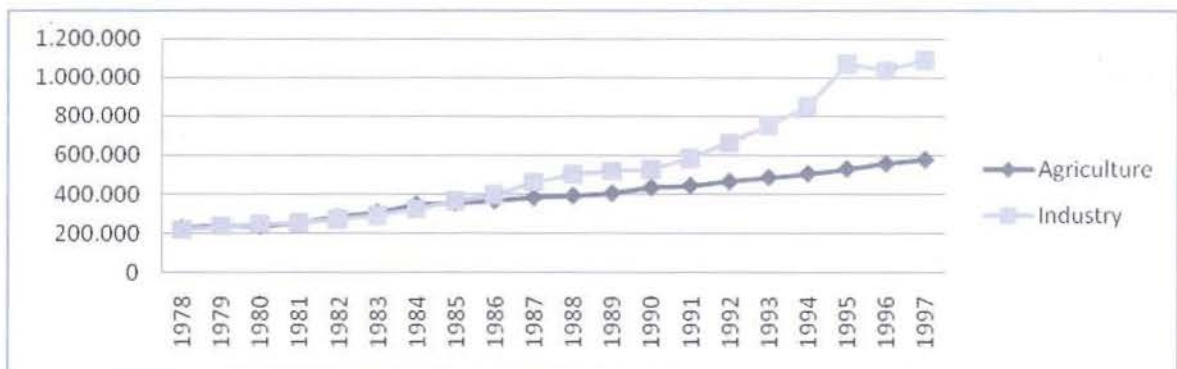
Figure 5: Agriculture and Industrial Output 1978-1997 GDP in million 1987 Yuan

(Source: Maddison-Wu Estimates, 2007)
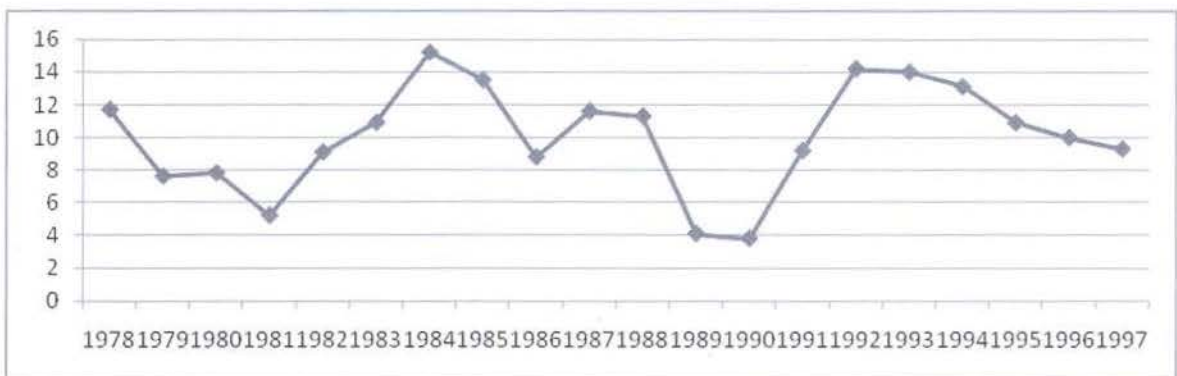
Figure 6: GDP Annual Growth % 1978-1997 (Source: WDI2006)

Figure 7: Real Effective Exchange Rate 1980-1997

6. Export Era (1998-2004)

Gross domestic saving rate increased relatively in reform years. Average saving rate in 1965-1977 is 26.8%, in 1978-1998 is 36.9% and in 1998-2004 is 38.1 (World Bank, 2006). Therefore reallocation of recourses has been crucial in order to create incentives. In 1998, the government allowed banks to make loans to private companies. That same year, authorities also permitted private firms to export goods directly; before that, firms had to sell goods abroad through a state-owned trading firm, an inefficient system that crippled exports. In 1999, the government revised the constitution to strengthen private-property rights. (Huang Y., 2003)

Rent seeking behaviour of the private sector driven the productivity gains in recent years as well as profitability. In 1998-2002 years average CPI was negative 0.46, as deflation. Deflation dropped the consumption and FDI. This stagnation slowed the growth rate in 1998-2002. China had protective trade policy as most East-Asian countries did so. After, the most impressive legal institutional change was entry to the WTO in 2001. WTO entry forced China to liberalize tariffs and reduce the tax subsidy and sign the TRIP's. However, opportunity costs were less effective than manufacturing cost advantage of labor force. Net trade increased again after deflationist period (Figure 11) and carried out the GDP growth in Figure 9. Much Japanese experience is relevant to China. Japan saw the need in early Post-War II times to: utilize industrial policy measures to get resources to critical areas; abolish many economic controls and liberalize trade capital flows; develop a base for competition; create a market for corporate stock ownership and improve managerial skills;

convert military industries to civilian uses; encourage capital formation in business trough for example generous depreciation allowances; enhance industrial technology (for example, establishing subsidies and favorable tax treatment for R&D activities and checking increases royalties to converse foreign exchange); promote exports (for example, the government established the Export-Import Bank of Japan in 1951 for export financing and the Japan External Trade Organization (JETRO) in 1954 to carry out overseas research); and encourage the "soft" infrastructure of economy (such as the promotion of industrial standards and the creation of laws on patent and trademarks). This same list could belong to China (Ross, 1999).
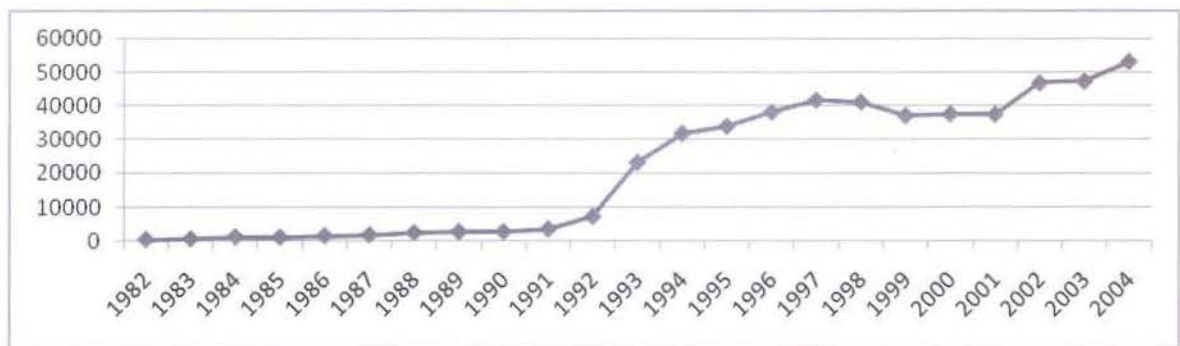
Figure 8: FDI net 1982-2004 (BOP 2006 million US$) (Source WDI 2006)
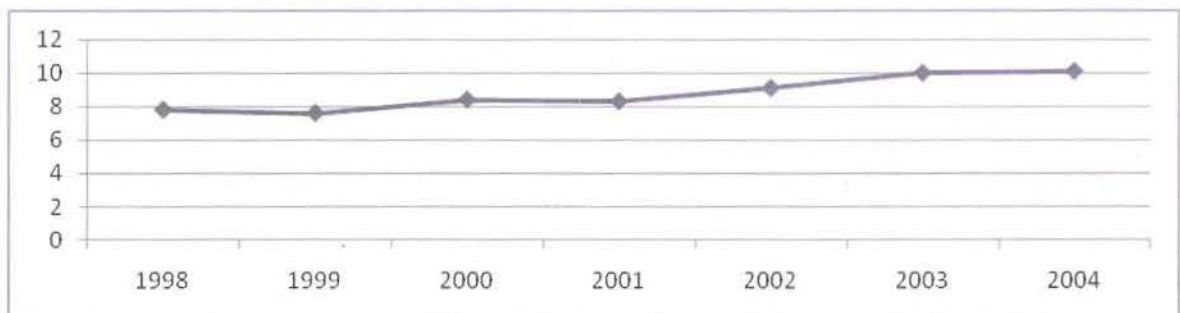
Figure 9: GDP Annual Growth % 1998-2004 (Source: WDI2006)
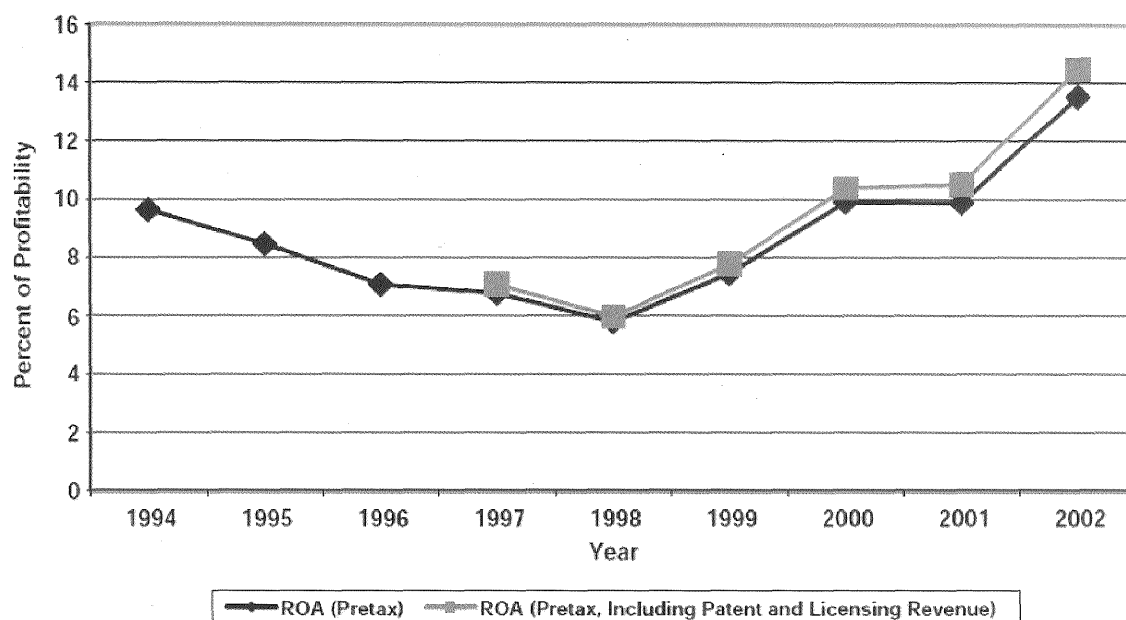
Figure 16.5. Foreign-invested enterprise profitability, 1994–2002 (*Source:* National Bureau of Statistics, China Statistical Yearbook)

Figure 10: Profitability of FDI (Lee Branstetter, 2008)
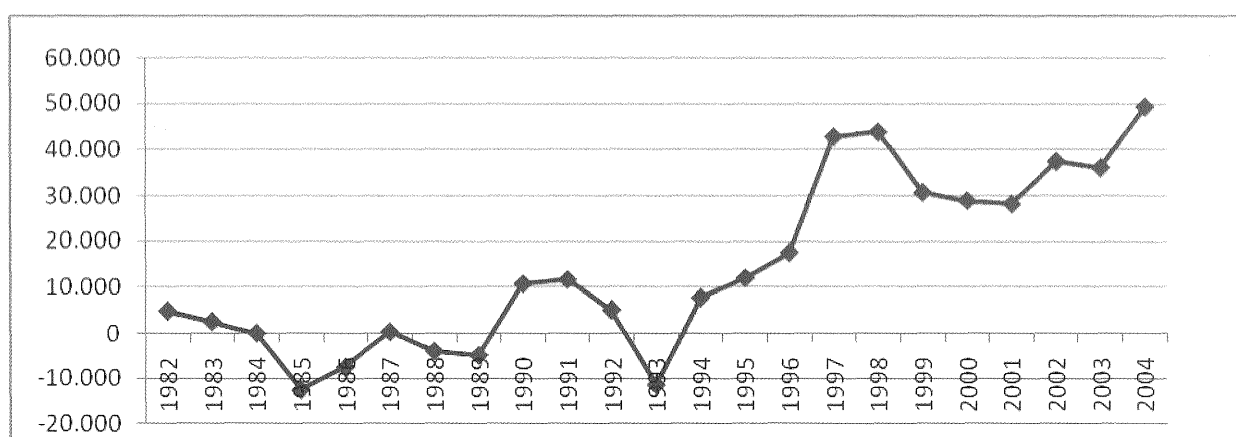
Figure 11: Net Trade in goods and services 1982-2004 (BOP 2006 2006 million US$) (Source: WDI2006)

7. Conclusion

In 20th century, China experienced three main economic systems, feudalism, socialism and market-oriented system respectfully. Each was the steps toward making today's China, but the evolution of system to more market-oriented system has great impact. Firstly, agriculture was not necessarily successful till 1980's. Land reforms of property right

improved the agriculture and there is a correlation of improvement when lands are owned privately and the true capitalists' small medium sized entrepreneurs. Decentralization of organizations such as brigades and responsibility system tied with tax reforms led an incline of output and brought self sufficiency. Secondly, industry developments after catching-up the agriculture outputs, increase in openness in trade and FDI brought knowledge, culture and security rather than the soviet assistance which was highly related to political tendency and foreign human capital. In industrial production human capital was critical factor. Thirdly, private sector, rent seeking behaviors, was efficient rather than the SOEs. Reallocation of savings to profitable sector was mostly done after the permit to by private sector loans from state banks. Deregulation of price controls presented a fair input price to the industrial manufacturers. Lastly, institutional changes mattered in economic growth of China and productive management was easily done in after reforms of 1978 rather than the previous periods.

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Testing Stock Market for Convergence:

A Non-Linear Factor Approach

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Abstract

This paper applies the Phillips and Sul (2007) method to test for convergence in stock returns for five EU countries and the US over the period 1973-2008. As a first step, we use the Stock and Watson (1998) procedure to filter the data in order to extract the long-run component of the series; we estimate the relative transition parameters. In the case of sectoral indices we find convergence in the middle of the sample period, followed by divergence, and detect four clusters. Splitting the cross-section into two subgroups including Euro area countries, the UK and the US respectively, provides evidence of a global convergence/ divergence process not obviously influenced by EU policies.

1. Introduction

Financial integration is an issue which has been extensively investigated in the literature, recently with an increasing focus on the European case, as the EU has put considerable emphasis on achieving a higher degree of convergence of financial markets in its member states. Several different approaches have been taken to establish whether or not such convergence has taken place or at least whether the process is under way. Most of these

methods rely on rather restrictive assumptions about the properties of the series being analysed and the type of convergence which might occur.

This paper exploits some recent developments in the econometrics literature which provide a more flexible framework for the analysis. Specifically, it applies the Phillips and Sul (2007) method to test for convergence of stock returns to an extensive dataset including monthly stock price indices for five EU countries (Germany, France, the Netherlands, Ireland and the UK) as well as the US over the period 1973m1-2008m8. This approach has several advantages over others previously used in the literature, as it does not require stationarity and it is general enough to cover a wide range of convergence processes. We carry out the analysis on both sectors (35 cross-section units as a whole) and individual industries within sectors (overall, 119 cross-section units, see Appendix A for details). The data source is Datastream. As a first step, we use the Stock and Watson (1998) procedure to filter the data in order to extract the long-run component of the series; then, following Phillips and Sul (2007), we estimate the relative transition parameters.

To preview the main results, in the case of sectoral indices we find convergence in the middle of the sample period, followed by divergence, and detect four (two large and two small) clusters. The analysis at disaggregate, industry level, again points to convergence in the middle of the sample, and subsequent divergence, but a much larger number of clusters is now found. Splitting the cross-section into two subgroups including the Euro area countries, and both the UK and the US respectively, provides evidence of a global convergence/divergence process not clearly affected by EU policies.

We try to rationalise these results on the basis of the country versus industry effects literature, and consider their implications for portfolio management strategies. Traditionally, a top-down approach has been followed in selecting portfolios, i.e. a country is chosen first, and stocks within that market are then selected. Such a strategy is effective if country effects are the main driving force of stock returns. However, it might have to be revised if industry effects are shown to have become more important over time. Our clustering results combined with correlation analysis of stock index returns imply that

indeed the relative weight of industry effects has increased over time, and therefore a traditional top-down investment strategy might not be effective any longer.

The remainder of the paper is organised as follows. Section 2 briefly reviews the existing literature on (European) stock market integration. Section 3 outlines the Phillips and Sul (2007) method. Section 4 presents the empirical results and provides some interpretation. Section 5 offers some concluding remarks.

2. Literature Review

European financial integration is a topic of extreme interest both to portfolio managers and policy-makers. The creation of a single market, and then the introduction of the Euro, together with the adoption of various measures promoting financial integration, are all thought to have resulted in less segmented financial markets. Obviously, this is a gradual process, which takes time to complete, as many obstacles to integration have had to be removed over the years. EU countries still have national stock markets and numerous derivatives markets, cross-border transactions are still much more expensive than domestic ones (see, e.g., Adjaoute et al., 2000), taxation, reporting and accounting standards have not been harmonized across member states. Further, although the introduction of the euro has eliminated currency risk as a risk factor for portfolio investors, home bias might still persist to some extent. As a result, full financial integration has yet to be achieved, and clearly the EU is a considerably less homogeneous financial area compared with the US. However, ever-increasing (and eventually full) integration has been a top priority for the EU, and one would expect substantial progress to have been made and significant convergence to have occurred already.

The question arises how one could measure the degree of stock market integration and/or convergence, and whether global or local risk factors determine returns. In principle both price-based and quantity-based indicators could be appropriate. Measures obtained from asset prices models have the disadvantage that these are difficult to estimate and require specific assumptions (see, e.g., Bekaert and Harvey, 1995). Nevertheless, some studies have taken this approach - for instance, Hardouvelis et al. (2007), who report a lower cost

of capital reflecting higher financial integration in Europe. Chen and Knez (1995) put forward a general arbitrage approach which does not require specifying an asset model, but is not, however, very informative about the convergence process. This has been applied by researchers such as Fratzscher (2002), who reported increasing correlations across European stock markets. Ayuso and Blanco (1999) have suggested a refinement of this approach based on a no-arbitrage condition; they also find increasing global financial integration in the 1990s.

Correlations are often found to be time-varying and increasing in periods of higher economic and financial integration (see Goetzmann et al., 2005). Low correlations between stock markets could be due to a number of reasons, i.e. the already mentioned home bias, country-specific factors (such as policy framework, legislation etc.), differences in the pricing of risk, and possibly in the composition of indices. An alternative explanation for convergence patterns in stock markets could be based on changes over time in the relative importance of industry and country effects as driving forces of stock returns[1], as suggested by Ferreira and Ferreira (2006), with important implications for the gains from international portfolio diversification. In particular, these authors investigate whether lower cross-country correlations reflect differences in the composition of indices across countries. Specifically, they use a sample of 10 industry indices in 11 EMU countries and estimate the model proposed by Heston and Rouwenhorst (1994) to decompose the return of a given stock or industry index into a common factor, an industry effect and a firm specific disturbance. They find that, although country effects are still predominant, overtime industry effects have become increasingly important. This implies that international portfolio diversification across countries is still a more effective tool for risk reduction than industry diversification within a country, but increasingly less so. Baca et al. (2000) and Cavaglia et al. (2000) also reach the conclusion that the importance of industry factors increased towards the late 1990s. However, Brooks and Del Negro (2004) argue that higher correlations across national stock markets were a temporary phenomenon, explained by the IT bubble, following which diversification across countries

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[1] This topic has been of interest to scholars for a long time indeed. Lessard (1973) has shown with a single-factor model that only a small proportion of the variance of national portfolios is common in an international context which gives rise to considerable risk reduction through the international dimension. He also argues that the industry dimension is much less important than the national dimension in defining groups of securities that share common return elements from 1959 to 1972.

might still work better. Another study by Adjaoute and Danthine (2003) simply calculates the cross-sectional dispersion in country and sector returns respectively and also finds that the benefits from diversification across sectors have become greater since the end of the1990s. Baele *et al.* (2004) use Hodrick-Prescott filtered dispersion series in order to focus on the slowly moving component, and conclude that country dispersion in the euro area has been higher than sector dispersion (i.e., cross-country correlations were typically lower than cross-sector correlations). However, their measure of sector dispersion surpassed that of country dispersion in 2000, consistently with a possible shift in the ass*et al*location paradigm from country-based to sector-based strategies. They also note that diversifying portfolios across both countries and sectors still yields the greatest risk reduction. Ferreira and Gama (2005) use a volatility decomposition method to study the time series behaviour of equity volatility at the world, country and local industry levels for the most developed21 stock markets. Their findings suggest that industry diversification became a more effective tool for risk reduction than geographic diversification in the late 1990s, since industry volatility has been rising relative to country volatility and correlations among local industries have declined globally.

The economic interpretation of ex-post correlations of stock market returns, however, is questionable. Therefore, quantity-based measures such as the shares of equities managed by equity funds with an international investment strategy are recommended by authors such as Adam *et al.* (2002). Baele *et al.* (2004) update their results considering investment funds, pension funds and the insurance industry, and again find evidence of a decrease in the home bias and a rising degree of stock market integration. They also use a news-based measure of financial integration to establish whether the sensitivities of country returns to shocks (the "betas") have changed over time in response to deeper economic and monetary integration, and conclude that the degree of integration has increased both within the euro area and globally, and especially so in the former.

In the last two decades a new literature has also developed based on the concepts of β- and σ-convergence introduced by Barro and Sala-i-Martin (1991, 1992). Presence of β-convergence implies mean reversion for the panel units, whilst σ-convergence is a reduction in overall cross-section dispersion. Islam (2003) shows that β-convergence is a

necessary but not sufficient condition for σ-convergence, but has a more natural interpretation in the context of growth models. He also points out some problems arising when testing convergence empirically (see also Durlauf and Quah, 1999 and Bernard and Durlauf, 1996). First, the implications of growth models for absolute convergence and "convergence clubs" are not clear (for alternative testing methods, see Hobijn and Franses, 2000, and Busetti *et al.*, 2006). Second, different tests do not have the same null hypothesis and therefore are not directly comparable. Third, most tests are based on rather specific and restrictive assumptions about the underlying panel structures.

A new approach which overcomes these difficulties has recently been introduced by Phillips and Sul (2007). Theirs is a "non-linear, time-varying coefficient factor model" with well-defined asymptotic properties. A regression-based test is proposed, together with a clustering procedure. This approach is not dependent on stationarity assumptions and allows for a wide variety of possible transition paths towards convergence (including subgroup convergence). Moreover, the same test is applied for overall convergence and clustering. Fritsche and Kuzin (2008) apply this method to investigate convergence in European prices, unit labour costs, income and productivity over the period 1960-2006and find different transition paths of convergence as well as regional clusters.

In the next section we outline this procedure, which is then applied to analyse convergence in European and US stock markets in Section 4.

3. Non-Linear Factor Analysis

Model Factor analysis is an important tool for analysing datasets with large time series and cross-section dimensions, since it allows decomposing series into common and country-specific components in a very parsimonious way. A simplest example is a linear factor model, which has the following form

$$X_{it} = \delta_{it} + \varepsilon_{it}, \tag{1}$$

for $i = 1, \ldots, N$ and $t = 1, \ldots, T$, where X_{it} are observable series and μ_t as well as ε_{it} unobservable components. In many cases unobservable components can be easily

estimated using the method of principal components and the asymptotic properties of estimators are well defined for large N and T (see Bai, 2003).

However, the loading coefficients δi are assumed to be time invariant in (1) and for the country-specific components ε_{it} stationarity or at least difference-stationarity properties are required. As long as convergence is understood as a non-stationary process, such as σ-convergence (Barro and Sala-i-Martin, 1991, 1992), analysing it proves to be problematic in this framework. Phillips and Sul (2007) adopt a different specification from (1) and allow for time-variation in the loading coefficients as follows

$$X_{it} = \delta_{it}\mu_t, \tag{2}$$

where δ_{it} absorbs the idiosyncratic component ε_{it}. Next, non-stationary transitional behaviour of factor loadings is proposed, so that each coefficient converges to some unit specific constant:

$$\delta_{it} = \delta_i + \sigma_{it}\xi_{it}L(t)^{-1}t^{-\alpha}. \tag{3}$$

The stochastic component declines asymptotically since ξ_{it} is assumed to be independent across i and weakly dependent over t, and L(t) is a slowly varying function, i.e. L(t) = log t. Obviously, for all $\alpha \geq 0$ the loadings δ_{it} converge to δ_i enabling one to consider statistical hypotheses of convergence in the observed panel X_{it}. In particular, the null of convergence is formulated as follows

$$H_0 : \delta_{it} \to \delta \text{ for all } \delta \text{ and } \alpha \geq 0.$$

Transition paths The central issue of the proposed approach is the estimation of the time-varying loadings δit. Phillips and Sul (2007) suggest a simple non-parametric way to extract information about δit by using their relative versions - the so-called relative transition parameters:

$$h_{it} = \frac{X_{it}}{\frac{1}{N}\sum_{i=1}^{N} X_{it}} = \frac{\delta_{it}}{\frac{1}{N}\sum_{i=1}^{N} \delta_{it}}. \tag{4}$$

Provided that the panel average $\frac{1}{N}\sum_{i=1}^{N} X_{it}$ is not zero, the relative transition parameters measure δ_{it} in relation to the panel average at time t and describe the transition path of unit i. Obviously, if all loadings converge to the same value $\delta it \to \delta$, the relative transition parameters converge to one, hit $\to 1$, so that the cross-sectional variance goes to zero.

Based on this property the following convergence testing procedure was proposed by Phillips and Sul (2007).

Testing First, a measure for the cross-sectional dispersion of the relative transition parameters relative to one is calculated:

$$H_{it} = \frac{1}{N} \sum_{i=1}^{N} (h_{it} - 1)^2. \tag{5}$$

Second, the following OLS regression is performed:

$$\log(H_1 / H_t) - 2\log L_t = \hat{a} + \hat{b}\log t + \hat{u}_t \tag{6}$$

for t = [rT], [rT] + 1, . . . , T with some r > 0. As in the previous case, L(t) denotes some slowly varying function, where L(t) = log(t + 1) turns out to be simplest and obvious choice. The convergence speed α is estimated by $\hat{b} = 2\hat{\alpha}$. It is important, since the focus is on convergence as the sample gets larger, to discard the first [rT]-1 observations. The choice of the subsample to be discarded plays an important role, because both the limit distribution and the power properties of the procedure depend on it. Phillips and Sul (2007) suggest r = 0.3 based on their simulation experiments.

Finally, the regression coeffcient $\hat{b}$ is tested under the one-sided null hypothesis α ≥ 0 and using a HAC standard error. Under some regularity conditions stated in Phillips and Sul (2007) the test statistic $t_{\hat{b}}$ is asymptotically standard normally distributed, so that standard critical values can be employed. The null is rejected for large negative values of $t_{\hat{b}}$.

Clusters Rejecting the null of convergence does not mean that each unit in the panel follows only its own independent path. Obviously, subgroups can also converge and build convergence clubs. Accordingly, Phillips and Sul (2007) also propose an algorithm for sorting units into converging clusters given some statistical significance values. The algorithm is based on the logarithmic regression (6) and consists of four steps, which are repeated until all units are sorted into cluster formations (see Phillips and Sul, 2007, for details). Two critical values need to be fed into the procedure in order to run it: one for testing a given subgroup for convergence, set to the standard -1.65 in the following

analysis, and the other for testing if a particular unit belongs to a given group. Phillips and Sul (2007) argue in favour of a much strict setting for the second value: they suggest using a zero threshold and even increasing it, if the null for the whole subgroup is rejected in subsequent steps. The procedure possesses great flexibility enabling one to identify cluster formations with all possible configurations: overall convergence, overall divergence, converging subgroups and single diverging units.

Filtering However, in many economic applications the underlying time series often contain short-run components, i.e. business cycle comovements, which render representation (2) inappropriate. Equation (2) can be extended by adding a unit-specific additive short-run component:

$$X_{it} = \delta_{it}\mu_t + \kappa_{it}. \tag{7}$$

Any subsequent convergence analysis is eventually distorted by these additive components; so that some filtering techniques are necessary to extract the long-run components $\delta_{it}\mu_t$. The particular filtering techniques applied in this paper are discussed in the next section.

4. Data and Filtering

Data We employ two datasets of stock market indices on a monthly basis. Both datasets were taken from Datastream and contain stock market indices for five EU countries as well the US. The European countries included are the UK, Ireland, Germany, France and the Netherlands. The first dataset consists of aggregate stock market indices for six economic sectors in each country: basic materials, consumer goods, industrials, consumer services, health care and financials. 35 series are available for the sample period from 1973m1 to 2008m8. Health care was excluded in the case of Ireland since it is available only for a shorter period. The second dataset contains data for the same six sectors as in the previous case but at a more disaggregated, industry level and has a much higher cross-sectional dimension (see Appendix A for details). Also, in this case we only use data from 1973m1 excluding shorter series and end up with 119 cross-sectional units. Finally, all indices are transformed into monthly returns since we do not consider convergence in their levels.

Filtering Since convergence is a long-run concept; we are only interested in whether stock returns are getting closer or forming clusters at low frequencies. However, this type of analysis turns out to be quite problematic, because stock returns contain a huge amount of short-run variation that would distort the results, as already mentioned at the end of section 3. Therefore, returns should be filtered before testing for convergence.

The most obvious approach is the Hodrick-Prescott (HP) filter; however, whenever stock returns exhibit strongly stationary patterns, the HP-filtered series contain a lot of medium-run swings and seem to be are hardly appropriate for convergence analysis (see the two upper graphs in Figure 1).

In order to be able to work only with long-run swings we base our analysis on another filtering strategy and employ the time-varying parameter framework proposed by Stock and Watson (1998). The following state space model is set up

$$r_t = \beta_t + u_t \tag{8}$$

$$\beta_t = \beta_{t-1} + \tau \varepsilon_t \tag{9}$$

where t = 1, . . . , T and (u_t, ε_t) are uncorrelated white noise processes. The model is applied to each unit but the cross-section index i is dropped for simplicity. The condition $\sigma_u^2 = \sigma_\varepsilon^2$ is necessary for identification purposes. Furthermore, it is assumed that τ is small and depends on the sample size

$$\tau = \lambda / T \tag{10}$$

which guarantees that a particular stock return process r_t consists of a white noise process u_t and a slowly varying random walk β_t, eventually with very small variation compared to the variance of the original series. The variation parameter is estimated using the median unbiased estimation procedure proposed by Stock and Watson (1998). In particular, we use the Quandt likelihood ratio statistic to compute $\hat{\lambda}$. Finally the local level model is estimated by Maximum Likelihood conditionally on $\hat{\lambda}$.

We can then use the Kalman smoother to compute the time-varying means β_t. The results for both (the sectoral and industry) datasets are plotted in the two lower graphs of Figure 1, where the series without any estimated variation, i.e. $\hat{\lambda} = 0$, are discarded. For the sectoral

dataset we end up with 26 series containing significantly time-varying means. At industry level 89 series with time-variation in the mean are detected. It is easy to see that the extracted time-varying means are much more persistent than their Hodrick-Prescott variants and therefore seem to be more appropriate for convergence analysis. Moreover, the estimation of the variation parameter λ allows us to sort the series into two groups: those with significant long-run variation and those without it. This in turn provides more information for analysing convergence issues.
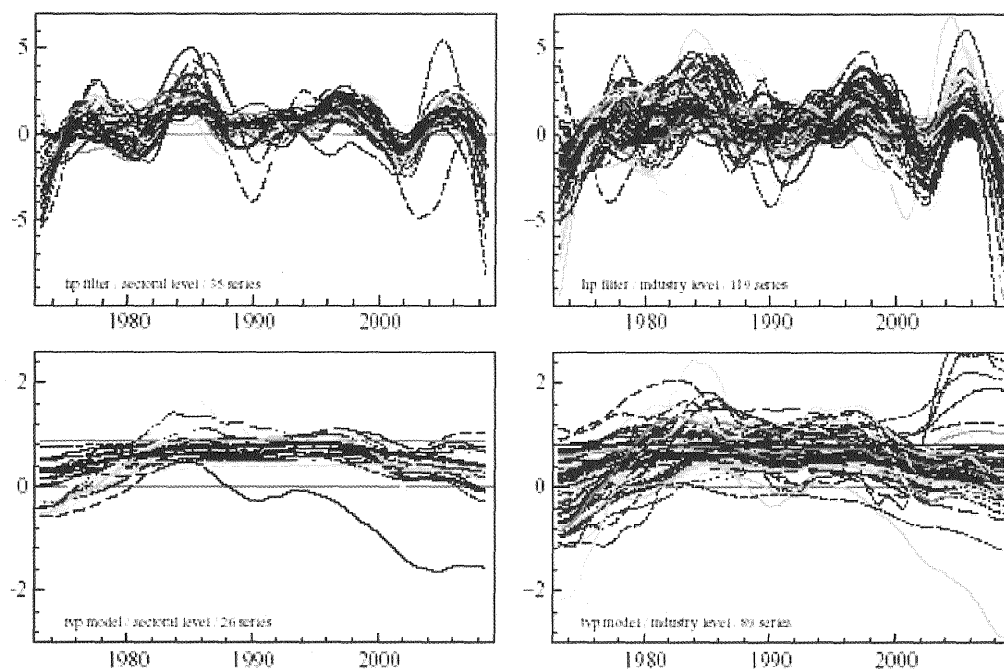
Figure 1: Filtered return series / HP-trends vs. TVP-model

Non-zero means Since the convergence testing procedure proposed by Phillips and Sul (2007) relies on the so-called relative transition parameters (see Equation 4), it requires all panel cross-section means to be positive and also elsewhere far from zero. Analysing most macroeconomic time series (such as real and nominal GDP, industrial production, prices) is not problematic in this context, since their mean is positive. But the case of stock return indices is different, as even their smoothed versions often take negative values; this in turn can lead to cross-section means in the vicinity of zero and distort the testing as well as the clustering procedures heavily.

We try to circumvent this problem by adding a constant to all observations of the panel. The obvious choice is the absolute value of the panel minimum, which guarantees that all transformed panel members are positive and also have positive cross-section means sufficiently far from zero. Although this approach to solve the problem of zero means does not have a theoretical justification, applying it to panels transformed in this way, i.e. the sectoral dataset filtered by the Kalman smoother, does not produce any significant changes in the empirical results.

4. Empirical Results

In this section, the empirical results are presented. First, we investigate convergence in stock market returns based on the smaller sectoral dataset. Sectoral results constitute the main basis for further discussion since they are easier to interpret compared to those obtained for more disaggregate, industry level datasets. Second, convergence analysis at industry level is performed. The aim of this part is mainly to check the robustness of the previous analysis. Finally, rolling cross-correlations of stock returns are estimated and compared to the cluster analysis results.

Sectoral level We carry out convergence analysis by using the method proposed by Phillips and Sul (2007). First, we use only filtered sectoral returns, where we were able to detect significantly time-varying means, ending up with 26 estimated ones. The cluster procedure performed on the full sample reveals four clusters; however, two of them contain only two units and therefore can be considered as outliers. The content of all clusters can be found in Table 1[2]. If we do not consider the two small outlier-clusters, we observe that the first cluster contains mostly basic materials and health care units. On the other hand, the second cluster consists for the most part of financials as well as consumer goods and services.

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[2] Please note that the numbers in the cells refer to the respective index of a cluster to which the series (sectoral level) belongs.

	NL	IE	UK	US	DE	FR
INDUSTRIALS	1	2		1		
CONSUMER GOODS	1	4		2		2
CONSUMER SERVICES	2	1	3	2		2
HEALTH CARE	4	na	1	1	1	2
BASIC MATERIALS	1	1	1		1	
FINANCIALS	3	2	2	2	2	

Table 1: Cluster results for sectoral dataset.

Then we check the results for robustness and transform all time-varying means by adding the absolute value of the whole panel minimum. In this way the panel becomes positive, thus avoiding the problem of having to divide the series by cross-sectional means near zero. The results are presented in Table 2[2]. There are no qualitative changes in the outcome of the clustering procedure. We find two main clusters and two single diverging units. As in the previous case, one cluster contains basic materials and most health care units, whereas the other one includes financials as well as most consumer goods and services sectors. Next we use all available units as input for the clustering procedure. If a series does not reveal any significant mean variation and the estimated λ are zero, its mean is included into the dataset. The sample mean is also an optimal choice conditionally on $\hat{\lambda} = 0$ in the Kalman smoother setup. After this modification the outcome of the procedure still remains robust (see Table 3[2]). Despite some small changes, most basic materials and health care units are part of cluster one, whereas financials and consumer goods and services tend to be in cluster two. The results for the industrial sectors are inconclusive for the three cluster estimations.

	NL	IE	UK	US	DE	FR
INDUSTRIALS	2	2		1		
CONSUMER GOODS	1	div		2		2
CONSUMER SERVICES	2	1	2	2		2
HEALTH CARE	div	na	1	1	1	2
BASIC MATERIALS	1	1	1		1	
FINANCIALS	2	2	2	2	2	

Table 2: Cluster results for sectoral dataset, positively transformed time-varying means.

Next we perform some recursive cluster estimation reducing the sample size. The smoothed time-varying means with added constant are employed in order to avoid any.

	NL	IE	UK	US	DE	FR
INDUSTRIALS	2	2	2	1	2	1
CONSUMER GOODS	1	div	2	2	2	2
CONSUMER SERVICES	2	2	2	2	2	2
HEALTH CARE	div	na	1	1	1	2
BASIC MATERIALS	1	1	1	2	1	1
FINANCIALS	2	2	2	2	2	1

Table 3: Cluster results for sectoral dataset, positively transformed time-varying means, all available units included.

problems in the vicinity of zero, but without inclusion of series with constant means. It turns out that the results are not stable over different subsamples. If we shorten the sample by 6 years, the cluster results remain relatively stable. However, after reducing the sample further (i.e., considering the two time periods 1973m1-1998m1 and 1973m1-1993m11), the outcome of the Phillips-Sul procedure is very different. Now we get only one cluster, i.e. overall convergence, plus one diverging unit. The bottom left-hand side graph in Figure 1 suggests that all estimated time-varying means seem to move similarly between 1993 and 1998. If the sample size is cut once more time and the cluster procedure is run for the period 1973m1-1989m9, the outcome changes again. Now we observe two large clusters without any divergent units (their members are shown in Table 4[2]). The first cluster includes all health care variables, whereas the other one contains most industrials, basic materials, financials and consumer goods production. Finally, after reducing the sample to 1973m1-1985m7 we detect overall convergence in the data.

	NL	IE	UK	US	DE	FR
INDUSTRIALS	2	2		2		
CONSUMER GOODS	1	2		2		2
CONSUMER SERVICES	1	1	2	1		2
HEALTH CARE	1	na	1	1	1	1
BASIC MATERIALS	2	1	2		2	
FINANCIALS	2	1	2	1	2	

Table 4: Cluster results for sectoral dataset, positively transformed time-varying means, estimation sample 1973m1-1989m9.

Industry level At the industry level 119 cross-section units for different countries are available and after estimating time-varying means by using the mean-unbiased estimation technique proposed by Stock and Watson (1998), we end up with 89 series, with an estimated variation parameter λ different from zero. The estimated time-varying means are plotted at the bottom right-hand side of Figure 1. Running the clustering procedure with this highly disaggregated data turns out to be more difficult than in the previous case. At many points the cross-sectional mean is near zero, so that we always have to use a transformed version of the panel by adding the absolute value of the panel minimum to all data points. For the full sample (1973m2-2008m8) we identify six clusters and four diverging units (see Table 5[3]). Since there are many industries in the dataset we present the aggregated results in Table 5. For the same reason we do not show the distribution of particular units over countries. The outcome of the cluster procedure at the disaggregated industry level reveals similarities with the corresponding results at the sectoral level. For example, the cluster with most financials units does not contain any basic materials units but it includes most consumer services. There are also differences: the second cluster with most basic materials units consists also of six financials. However, these differences are not surprising, since there are many more industries in some sectors compared to others.

Next we perform recursive estimation as in the sectoral level case. Considering the two subsamples 1973m2-1998m1 and 1973m2-1993m11 reveals overall convergence in the panel of 89 time-varying means. This is strongly in line with the previous results at the sectoral level. However, all further reductions of the sample size do not indicate any divergence in the data, which contradicts the evidence from the sectoral level.

	C 1	C 2	C 3	C 4	C 5	C 6
INDUSTRIALS	1	14	2	1	2	0
CONSUMER GOODS	0	13	4	0	0	1
CONSUMER SERVICES	0	5	9	0	1	2
HEALTH CARE	0	3	3	0	0	0
BASIC MATERIALS	2	3	0	1	0	0
FINANCIALS	0	6	11	0	0	1

Table 5: Cluster analysis at industry level, 89 series, full sample.

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[3] Please note that the numbers in the cells refer to the aggregate number of series (industry level) in the respective sector and respective cluster.

Euro area vs. the UK and the US The next issue we analyse is whether the detected convergence patterns are somehow related to the process of European financial integration. For this purpose we split the data into two: the countries of the Euro area (Germany, France, Netherlands, Ireland) on the one side and the US and UK on the other side. The results at sectoral level for the full sample until 2008m8 are reported in Table 6[2]. Obviously, the composition and number of clusters do not change a lot if we consider the Euro area and the US and UK separately. In both cases the algorithm identifies two clusters as well as some divergent units, whereas the first cluster consists mostly of basic materials and healthcare units and the second contains all financials and most consumer goods and services units.

Then we redo the recursive cluster analysis at the sectoral level. The results for the Euro area and the US/UK are slightly different, in particular, both panels first converge and then start to diverge, but in the case of the US/UK divergent tendencies emerge earlier; however, there are no general qualitative differences between them - in each case we observe convergence in the middle of the sample and divergence towards its end. Further analysis at a more disaggregated industry level for the Euro area and the US/UK also does not reveal any qualitative differences compared with the results for all countries (therefore the disaggregated results are not reported).

	NL	IE	DE	FR	UK	US
INDUSTRIALS	2	2				1
CONSUMER GOODS	1	div		2	2	2
CONSUMER SERVICES	2	1		2	div	
HEALTH CARE	div	na	1	2	1	1
BASIC MATERIALS	1	1	1		1	
FINANCIALS	2	2	2		2	2

Table 6: Euroarea vs. the US and UK: Cluster results for sectoral dataset, positively transformed time-varying means.

Correlation analysis In the next step we compute rolling correlations with the untransformed index returns and compare them with the outcome of the previous cluster analysis. Correlation analysis is often used to discover the relevance of country and

industry effects (see, for instance, Ferreira and Ferreira, 2006). Since we have 35 series at the sectoral and 119 series at the industry level, analysing all cross-correlations turns out to be difficult. For this reason we calculate means of rolling correlations and end up with 35 and 119 series respectively. In particular, at the sectoral level two types of mean rolling correlations are considered. First, for a given sector in a given country the mean correlation with the same sectors in all other countries is computed, thus obtaining a mean correlation within a sector but between countries. Second, the mean correlation of the same sector with all sectors in the given country is computed. This leads to mean correlations with countries but between sectors.

The rolling correlations results between countries and between sectors for the sectoral dataset (two upper plots) as well as between countries and between industries for the industrial dataset (two lower plots) are shown in Figure 2. The size of the moving window was set equal to 100 months, i.e. approximately 8 years. To obtain a clearer picture, we compute and show only the 0.9, 0.5 and 0.1 quantiles of the corresponding 35 and 119 rolling correlation series, which capture the main tendencies. One can see from both upper plots that the correlations within countries tend to fall, at least at the end of sample, whereas the correlations within sectors tend to rise in the second half of the sample. However, both type of correlation exhibit a clear local maximum at the beginning and in the middle of the nineties. These results are consistent with the recursive cluster results: convergence occurs between 1993 and 1998, but clusters are formed after 1998. The two lower graphs in Figure 2 show that the same type of analysis at the industry level using all 119 units in six countries does not change the outcome either qualitatively or quantitatively.
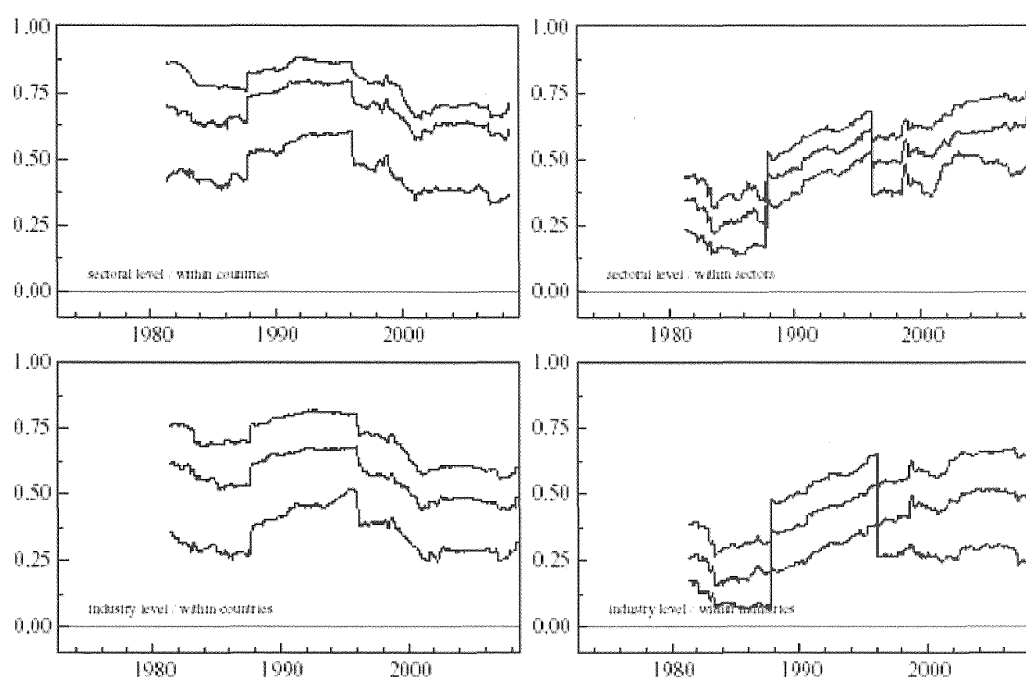
Figure 2: Rolling correlation between countries and between sectors (industries) for sectoral and industry datasets, 0.9, 0.5 and 0.1 quantiles of 35 and 119 series respectively, window size l = 100.

5. Conclusion

This paper has analysed convergence in European and US financial markets using a method recently developed by Phillips and Sul (2007) which is much more general and flexible than alternative ones previously applied in the literature. In particular, it is not dependent on stationarity assumptions, and is suitable for various types of convergence processes, including clustering, which might be relevant in the case of Europe.

European financial integration has been at the top of the EU agenda in recent years, and has important implications for portfolio management as well. Our analysis produces a number of interesting results. First, it shows that convergence in mean stock returns occurred up to the late nineties, but was followed by divergence in the subsequent period[4]. A plausible interpretation is that this reflects changes in the relative importance of industry versus country effects, the latter becoming more dominant over the years, as already reported, inter alia, by Ferreira and Ferreira (2006). In order to investigate this issue

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[4] This result is in line with those of Adjaoute and Danthine (2003), Baca et al. (2000), Cavaglia et al. (2000) and Baele et al. (2004).

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further, we also examine cross-country and cross-industry correlations, and find that they are both rising over time until the nineties. However, in the following period industry correlations exhibit a positive trend whilst country correlations tend to decline: this suggests that indeed the relative weight of industry factors has increased, and they are behind the observed divergence in stock returns in later years. As a result, traditional top-down investment strategies might have to be revised; geography becomes less relevant to portfolio diversification. This is consistent with the findings of Campa and Fernandes (2006), who study the determinants of the evolution of country- and industry-specific returns in world financial markets over the period from January 1973 to December 2004. They find that the main driving force behind the significant rise in global industry shocks is the higher integration of input and output markets in an industry, which implies a faster transmission of shocks to the industry across countries and a higher importance of industry factors in explaining industry returns.

A further question we ask is whether the policies implemented by the EU to promote financial integration have had any noticeable effect on the observed convergence patterns. For this purpose, we redo the analysis for subsets of countries, i.e. for the Euro area countries in our sample, and both the UK and the US separately. The results suggest that there are no qualitative differences between these two groups of countries, implying that there is a global convergence/divergence process not obviously influenced by EU measures, but possibly driven by industry versus country effects[5]. However, these results should be interpreted with caution, as our sample only includes a small subset of EU member states (most of them, EU "core" countries), and also the method we use focuses on medium- to long-run movements, and therefore convergence in the short-run (highly volatile) components, especially in the case of peripheral countries or relatively new entrants, cannot be ruled out.

Our results are highly relevant for policy makers as well. During the financial convergence periods, policy makers should be aware that financial markets are subject to spillover effects and a shock emerging from a certain country/industry might spread out quickly to other countries/industries. On the other hand, divergence of equity markets could also be

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[5] Campa and Fernandes (2006) show that global industry shocks rise significantly.

an indication of a non-homogeneous financial area. In that case policy makers should reconsider the measures to adopt to achieve a higher degree of convergence of financial markets.

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Sectors	Industries	FR	DE	IE	NL	UK	US
BASIC MATERIALS	Chemicals	x	x	.	x	x	x
BASIC MATERIALS	Forestry and Paper	.	x	.	.	.	x
BASIC MATERIALS	Industries Metals and Mines	x	x	-	x	-	x
BASIC MATERIALS	Mining	-	-	-	-	x	x
INDUSTRIALS	Construction and Materials	x	x	x	x	x	x
INDUSTRIALS	Aerospace and Defence	x	-	-	-	x	x
INDUSTRIALS	General Industrials	-	x	-	x	x	x
INDUSTRIALS	Electronic and Electrical Equipment	x	x	-	x	x	x
INDUSTRIALS	Industrial Engineering	x	x	-	x	x	x
INDUSTRIALS	Industrial Transportation	-	x	-	x	x	x
INDUSTRIALS	Support Services	-	-	-	x	x	x
CONSUMER GOODS	Automobiles and Parts	x	x	-	-	x	x
CONSUMER GOODS	Beverages	x	x	x	x	x	x
CONSUMER GOODS	Food Producers	x	x	-	x	x	x
CONSUMER GOODS	Household Goods and Home Construction	x	-	x	-	x	x
CONSUMER GOODS	Leisure Goods	x	-	-	x	-	x
CONSUMER GOODS	Personal Goods	x	x	-	-	x	x
HEALTH CARE	Healthcare Equipment and Services	-	x	-	-	x	x
HEALTH CARE	Pharmaceuticals and Biotechnology	-	x	-	-	x	x
CONSUMER SERVICES	Food and Drug Retailers	x	x	-	x	x	x
CONSUMER SERVICES	General Retailers	x	x	-	x	x	x
CONSUMER SERVICES	Media	x	-	x	x	x	x
CONSUMER SERVICES	Travel and Leisure	x	-	x	-	x	x
FINANCIALS	Banks	-	x	x	x	x	x
FINANCIALS	Nonlife Insurance	-	x	-	-	x	x
FINANCIALS	Life Insurance	-	x	-	x	x	x
FINANCIALS	Real Estate Investment and Services	-	-	-	-	x	x
FINANCIALS	Real Estate Investment Trusts	-	-	-	x	x	x
FINANCIALS	Financial Services	-	-	x	-	x	x
FINANCIALS	Equity Investment Instruments	x	-	-	x	x	x

Table 7: Industry dataset: all series available from 1973m2, distribution of industries over sectors and countries, 119 units.

Being a Woman in Prison from a Gender Based Sociological Perspective:

A Case Study in Closed Woman Prison in Sincan Prison Campus, Turkey

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Abstract

The rehabilitation facilities as part of Modernization of Judgement and Penal Reform Project efforts to present better conditions to the prisoners. Women prisoners are being obliged to live in prisons that are built depending on the basic needs of male prisoners. In this paper, we study the women prisoners' living condition and their evaluation about these conditions. This paper aims to introduce the living standards of the women prisoners and how they assess these conditions in a closed woman prison, through the medium of the applied interviews and questionnaires. The study also aims to reveal how women maintain their womanish lives and socially and physically reconstructed prisons within the context of modernization project. The field study has been conducted by 56 questionnaires and 9 in-depth interviews which are carried out with the prisoners and detainees.

1. Introduction

As Turkey experiences multi-dimensional transition period, and on the other hand as she is also experiencing rising crime rates depending on different social and/or economic factors; so saying that 'the crime is going to be one of the most important problems for the societies' will not be a wrong determination. By taking into consideration the importance of the problem, research and studies about prisons and crime in Turkey will really matter today and in the future.

Education level, occupation group, age, marital status, economic conditions and economic/politic crisis had become the most important variables for the crime and

criminality researches. Nowadays, another variable 'gender' keeps its importance in criminal studies; because it is thought that, like other variables, gender affects the type and the way the criminal commits the crime. (İçli and Öğün, 1988)

From an international perspective it is possible to say that the 'female crime rates' are not as high as the 'male crime rates'. It is needed to say that some countries does not have any crime rate statistics for females; but this does not mean that 'women do not commit crimes in those countries'; we can only say that the statistics for female criminality is not critically important as the male crime rates for those countries because the rates are too low.

The unavailability of the female crime rates causes different problems such as the ignorance of the female population in the prisons and the ignorance of their needs and problems in the prison. (Simon and Ahn-Redding, 2005)

The ignorance of women in the prisons and their problems forces the women prisoners to live in male-base structured prisons.

1.1. The Birth of a New Process with Modernization of Judgement and Penal Reform Project

As it is mentioned above the crime rates have been increasing in Turkey because of several social or/and economic factors and it is known that theoretical studies and the researches in this area are insufficient in Turkey.

For prohibiting the continuity of some of the prisoners and detainees' criminological activities in the prisons, as well as, the transitions of political criminals to the F-type prisons on October 20th a hunger strike, which has turned into a death fast on November 19th, has started. In view of the facts, the Turkish Government performed the 'Operation Return to Life' on December 19, 2000. Murat Paker, physician and clinical psychologist who is studying on human rights and the psychology of torture survivors in Turkey, explains this operation in one of his articles:

"During the week of December 19-26, 2000, 10,000 Turkish soldiers violently occupied 48 prisons to end two months of hunger strikes and "death fasts" by hundreds of political prisoners. The hunger strikers are protesting the state's plan to transfer its prisoners from large wards to US-style "F-type" cells holding one to three occupants. Operation "Return to Life" -- which left at least 31 prisoners and two soldiers' dead -- lasted a few hours in most prisons and up to three days at one prison. Eight prisoners are reportedly "disappeared," and at least 426 prisoners have been wounded. 1,005 prisoners have been transferred to F-type cells." (Paker, 2000)

On the basis of all these progresses, in Turkey, the need for betterment interferences on the issue of prisons and judgment has increased. In order to decrease the crime rates, to rehabilitate the criminal for not to commit crimes after their prison life, to take the control of the prison from prisoners and make the government the real manager of the prisons the process of "Modernization of Judgement and Penal Reform Project" has started.

In addition to the reasons specified above "Modernization of Judgement and Penal Reform Project" which is being implemented with the cooperation of Republic of Turkey Ministry of Justice, the European Commission and the Council of Europe also aims to modernize the prisons in Turkey. On the other hand, the project aims to build up a modernized prison management perception, to create "the ideal type prison architecture", to support the on-the-training of the prison staff, the execution adjudicators and the auditing commissions.

2. Scientific Description of the Results and Methodology

The major outcomes of this research are going to be structured around the following chapters; theoretical debate, methodological issues and finding and analysis. In this chapter, apart from the theoretical framework, firstly, the problem, aims, importance, restrains of this study will be discussed. Then, the research method and data collection techniques will be presented. Finally the findings will be analyzed.

2.1. Theoretical Debate

2.1.1. Prisons and Women Criminals

In fact, it is being ignored that prisons are also places for women as for men, according to an Arab saying "Prisons are for 'real' men" (al-sijn lil-jad"an). (Gorman, 2005) Worldwide, prison system includes women's 2% to 8% and, in this way, women prisoners/detainees becomes the minority of the prison systems. This way of women's minority leads to the male-based prison systems built.

It is seen that describing the women prisoners/detainees as 'the forgotten criminals', as did in the crime literature, will not be a false ascertainment. What is known clearly is that, parallel to the problems with the placement of the women prisoners, the number of women prisons is insufficient for the women prisoners. The insufficiency of the number of women prisons, worldwide, causes women's' frustrated freedom, which come into existence with their penalization, doubled by detaching them from their family physically and spatially as a result of their displacement to another city's prison.

Displacement of women prisoners/detainees from their own city to another distant city effects, in a privative way, their meeting durations with their families/children, as well as their peaky relations with their social surroundings and their family. In this case, worldwide, women prisoners/detainees' placement to the prisons that are built for men is seen as an advantage, as compared to detaching them from their family both physically and spatially by placing to distant cities.

It is needed to mention that 'creating' women prisons by doing some extra arrangements on the male-base structured prisons does not ever means 'prisons specific to women' or 'prisons of women'. Low rates of women crime rates and low number of women prisoners' leads to costly prisons compared to men's prisons so this leads to women prisoners to live in some parts of male-base structured prisons.

Prisons, particularly for women detainees / prisoners, have different meanings for each prisoner. One of the most striking points of this study is that it betrayed how a woman perceives what a prison is. As a result of this research, it is seen that most of the women's life before getting into the prison is not so much different from a prison life. Most of them were living a prison type life in their daily life and is interesting that they were in a situation of feeling more secure in the prison than at their home.

Focusing on the issue of women's confrontation with the public institutions and organizations by breaking away from the domestic life through a criminal act is also important. Women's life outside their home starts with the arrestation and law court process and ends with confinement to a 'new home'. In their 'new home' as it is in their previous home they face with a patriarchal structure and authority. But, as it is mentioned, as a result of living under the compulsion of a patriarchal authority and structure in their previous home, this alternating authority does not carry a great sense. (Savcı, 2004)

Most of the incarcerated women in Middle East are composed of women who are arrested because of the impossibility of a male family member's arrestment or victimized women because of her dependency to their husbands. (Gorman, 2005) In addition to this, majority of the incarcerated women, in their pre-prison life, were subjected to physical/sexual abuse or were not yet seen a treatment of their several health problems.

Sykes (1958) asserts that prison life is composed of five different deprivations: deprivation of freedom, shortened goods and services, destruction of personal autonomy, lack of personal security and lack of relationship with the opposite sex. As it is going to be mentioned in the further chapters, most of the incarcerated women in Ankara Closed Women Prison are mostly live the deprivation of their child/children. Because they are not aware of they are lack of their 'right of freedom' they do not feel the deprivation of freedom during their penal time.

It is possible to say different factors play different roles on the existence of the prison life, and these factors can be classified; what is to be a condemned?, what are the laws of the prison?, what kind of a communication should be established between the prison staff and

the prisoners?, what does it mean to study and produce?, how the communication should be provided with the excluded family and social life during the penal time? (Owen, 2001)

Clemmer (1951) uses the concept of 'prisonization' for explaining the accepted and internalized prison life. According to Clemmer, people start to accept and internalize the conditions in the prison. But this acceptance and internalization leads people to show more aggressive reactions to the people/life outside and further feeling of isolation from the 'real world' outside the prison. At this point, the prison staff, at the department of psycho-social departments of the prisons, should develop such kind of programs that could destroy these negative thoughts. (Lindesmith, 1940)

On the other hand, in one of the studies of İçli and Öğün (1999), they advocate that the subcultures of the prison are, in fact, examples of the outside world. According to his theory which is known as transport culture, prisoners transport the cultural structure outside the prison to the inside and so they create an illustration of the outside world inside.

Debates on the issue of women's incarceration are shaped by different perspectives such as; the suitability of the physical and social conditions of the prisons for women prisoners and also the transferring the social roles and responsibilities assumed by the women outside to the other people during her incarceration period. As the penal process starts, the women prisoners starts to lose their parental and social network support; she starts to live her penal doubled. Especially, being a mother and losing her support about her motherhood, after she is sentenced, makes the situation worse than it is. For this reason, providing a solid way of communication between the mother and the child/children keeps its importance. (Coyle, 2002) In the international arena, the debates about pregnant women's incarceration keep on going. It is being advocated that, there should be judicial systems avoiding pregnant women's incarceration. The birth must be realized in a hospital not in the prison for avoiding labeling of the children: 'were born in the prison'.

During the acceptance process of the prisoner to the prison, 'deprivation of the freedom of the prisoner' must be implemented with respect to the ninth article[1] of the European Prison Rules; with respect to human dignity, within the appropriate conditions. This implementation will lead to a positive step to the prisoner for solving her mental problems.

Although it is always being mentioned that women have their children dependent to them, literature does not mention so much about the many other individuals who are dependent to those incarcerated women. In Turkey, it is clear that, except their children they are responsible to, they have more people dependent to them as they compared to men responsible some people. Therefore, some arrangements about these issues for women in prisons must be done to decrease the psychological impacts of these problems.

Finally, after the incarceration period, there some important points that the prison management and the government should keep under control. Primarily, as the prisoner is out of the prison, prisoners', particularly the prisoners whose family relations are damaged, settlement and its conditions should be supervised. In the second stage, there should be a guiding service for the prisoner in his/her post-prison life about education, job training and employment issues. Health problems or the drug/alcohol addictiveness of the old prisoners should be kept under control by the authorized institutions or the individuals. After meeting the basic needs of the old prisoners; the financial problems, if any, should reach a solution in order to avoid the any psychology of committing crime again. After the improvement of the individual's settlement conditions, health and economic conditions a psychological support should be provided for him/her. This psychological support, provided after the prison life, can help to the individuals to turn back to their old life (or to a better life) and family. In addition to these support programs some extra supports to the women (sexually/physically abused women, prostitutes) must be provided. (HM Prison Service, Strategy and Resource Guide for the Resettlement of Women Prisoners, Spring 2006)

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[1] European Prison Rules; retrieved from
https://wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=624883&SecMode=1&DocId=1042976&Usage=2.

2.2. Methodology Issues

Consistent with the framework adopted, the approach of this study towards the phenomenon of the women prisoners' life certainly necessitates a triangulation of both qualitative and quantitative methods. Before the methodological techniques, this chapter starts with the problem, aims, importance and restraints of the research, and ends with the methodology and data collection techniques of the research.

2.2.1. Problem and Aims of the Research

The research titled "Being a Woman in Prison from Gender Based Sociological Perspective: A Case Study in Closed Woman Prison in Sincan Prison Campus, Turkey" is embodied from these problems of women prisoners and prisons. The research problematize the women in the prison cannot provide her basic needs as she did in her pre-prison life because of its male-based structure.

The research aims to reveal how women maintain their womanish lives and the impact of the rehabilitation programs during their incarceration period from a gender based sociological perspective without depending on any variable such as the demographic characteristics, penal time and type of crime the women commit. Discovering the life standards of women in prisons and how they assess these social/physical standards is another aim of the research. Another important point and aim of the research is to understand the women's status in the society in pre-prison life, during the prison life and after the prison life from women prisoners' perspectives. And finally, one more aim of the study is to take a picture of how women in the prisons generate themselves as mothers, wives and women during their penal time.

"Being A Woman In Prison From Gender Based Sociological Perspective: A Case Study In Closed Woman Prison In Sincan Prison Campus, Turkey" is an important study for the crime literature, especially in Turkey, because it differs from other studies achieved in women prisons with its aims and focused points. Studies done before were almost focused on the criminological and demographic characteristics of the women prisoners, but not on

how they consider the life in prison. Another importance that must be mentioned is that the research is achieved in a new prison which is built with its all facilities for the rehabilitation of the prisoners, after the reform project.

2.2.2. Research Questions

There were some questions that were directing the course of the study with its received answers. These questions can be listed as:

- What are the life standards of women in prisons and how they assess these social/physical standards in Closed Women Prison in Ankara?
- How women prisoners assess their own physical/social life standards in prison?
- How women prisoners interpret the executed reformist regulations in the context of "Modernization of Judgement and Penal Reform Project"?
- What do women prisoners think about their status in the society in pre-prison life, during the prison life and after the prison life?
- How women prisoners generate themselves as mothers, wives and women during their penal time?

2.2.3. Restraints of the Research

Making a research in a prison, especially in a closed prison has its own difficulties and restraints. First of all it was a real restraint to reach the prison studies, academic researches and literature about Turkish prisons. It was also hard to reach to the crime statistics of Turkey, the statistics are not being updated regularly. Furthermore there were restraints about the field study. The prison is a really sensitive space to make a research because the population of the prison itself is very sensitive because of their lives. First of all they were women and secondly they were in the prisons as daughters, wives or mothers... Committing a crime by itself was a behavior which brings a social oppression especially to the women and in addition to this because women cannot handle with this oppression and their burdened conscience they did not want to participate in the research about criminality. A field study in a closed-prison depends on the daily programme of the prison staff; it was

not possible for this research to apply the questionnaires and in-depth interviews all day long. The research was restricted within 3 days in a week for 4(four) hours. It was also impossible to talk with the political (they denied to participate to the research) and foreign national prisoners (language problem). Prisoners whom accepted to participate was also sometimes a problem; some of them rejected to reply some of the questions because they were so delicate to reply the questions about their motherhood, families and committed crime.

2.2.4. Research Method and Data Collection Techniques of the Research

During the data gathering process both qualitative and quantitative techniques are used. A survey sheet with 87 questions includes demographic information of the prisoners, their pre-prison life, their criminal perception and antecedent, their awareness in the prison, their assessment about the modifications made within the context of "Modernization of Judgement and Penal Reform Project" and the impact of prison life on themselves, their families and their near surroundings. In addition to the survey sheet with the in-depth interviews which are conducted almost in two hours, it is aimed to betray how women generate themselves in the prison as a woman, wife, mother or a daughter.

The population of the research is the prisoners living in the Closed Woman Prison in Sincan Prison Campus in Ankara. Simple random sample technique is used for determining the sample of the research. The sample consists of 41 sentenced women and 24 detained women; and are totally 65 women. This sample constitutes the 26% of the Closed Woman Prison in Sincan Prison Campus.

2.2.5. Findings and Analysis

Detained and sentenced women were predominantly born and grew up in the Central Anatolia Region; but in the sample there are women from all seven different geographical region of Turkey. 51, 8% of the detained/sentenced women in the sample are between 19-34 ages and as much of them there are women between 35-50 ages; and there are only 3

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women who commit crime after the age of 50. It is also possible to say, when we look at to the age pattern of the criminal women, women crime rates decrease after age of 50; but it is not possible to generalize this ascertainment for the male criminals.

The 85, 7% of the sample is literate but predominantly they are primary school graduate; and most of them go ahead their education during their penal time in the prison. Women crime rates decrease or the type of the crime they commit changes as their education level increases. Most primary school women commit murder (especially against their husbands) or they are sentenced because of burglary or drug use; but as the education level increases women are sentenced because of tempering with the cash. And it is seen that most of the women prisoners are housewives or working on their own behalf; but it should not be forgotten that although they mention that they are working on their own behalf, actually they were 'working on behalf of their husbands'. It must be emphasized that the economic status of the women was an important indicator for the criminal researches; because it affects the kind of the crime committed; women coming from low-level economic status commit burglary or tampering with the cash but by contrast women coming from the high-economic status were committing drug use crimes because they do not need economic gaining for surviving.

When the ideal occupation of the women prisoners asked the results were not so much surprising; women's ideal occupations were predominantly school teaching and nursery. But one point which must be emphasized is that the women's ideal job perception was depending on their life experiences; for example some of the prisoners mentioned that their ideal occupation is being a lawyer or a policewoman because if they believe in that if they were doing such a job they will not be in the prison now. This belief figures on their assurance about the policewomen or lawyers' high level of knowledge about the constitution and rights of imprisonment; so it is believed by the prisoners, that this occupation group has a fat chance of imprisonment comparatively to themselves.

The sample consists of 24 detained and 32 sentenced women who are predominantly sentenced for 6-10 years. The type of the committed crimes by women are mostly murdering, drug using and tampering with cash; and it is seen that women do not commit

repeated crimes as did men. Repeated crimes committed by women are in general burglary which is predominantly committed by the Gypsies.

Women prisoners' perception of crime is being shaped by their own committed crime. While making a crime definition they use their crime type because this way they got the chance of legitimizing their own abuse and/or clear their conscience. By the way, detained/sentenced women assess the level of the delinquency of the committed crime by using the 'reason' that pioneers the criminal behavior; if a person has an 'acceptable' reason for committing a crime the behavior's level of delinquency decreases. According to the women prisoners, the most important reason that causes women to commit crime is the psychological conditions; in addition to this reason economic conditions and the negative conditions of the family life will also leads women to commit an offense.

According to the women prisoners, whatever the reason is, the most unacceptable offences are murdering, aggression, burglary and prostitution. It is also interesting that the prisoners do not affirm murdering although they put their husband dead.

Although sentenced women adopt their own crime and reinforce 'punishment'; they still believe in the disparity of the punishments and penal system.

Concept of 'prison' was shaped, in the mind of the prisoners, as it is seen on television, newspapers and cinemas. They have never thought that they would be living in the prison. When it is asked women prisoners what they think about women's imprisonment the reply was clear: 'It's a shame'. According to them, criminal behavior was a male-act; not a female-act. But on the other hand there were women who do not read criminal behavior from a gender-based view; 'both women and men commit an offense'. But, according to women prisoners there is a difference between women criminality and male criminality: 'women commit an offense because, otherwise, they would be the victim of an offense from opposite site or/and women criminality was an instant case.'

In previous researches, it is seen that incarcerated women's family/social relations were crocked; they were despised and left alone. However, in this research the life stories of the

incarcerated women were both proves and disproves those kinds of relationship structures. Some of the women prisoners were supported by their families both in moral and financial means; but on the other hand there were women who were despised and left alone. Predominantly, women prisoners' family took the possession of their daughters and did not left their daughter alone. Even though the families did not accept the committed offense, they were the supporters of their daughters. But, especially for the families coming from rural areas, father and/or brothers overreacted both to the women criminal and the committed offense; and break off their relationships with her.

Some of the women criminals belied their committed offense and/or their imprisonment from their near surroundings just because not to be labeled as 'a criminal' or not to be marginalized by them because of their criminal background. Although they feel guilty, they were also accusing their families for their criminalism because they emphasize that they committed offences because their families rejected to help and support them morally for not to committing a crime.

Women prisoners participated in the research, talks about a concept in their daily life: 'prison psychology' which means a more depressive, emotional and accurate emotional state. Women prisoners mention that corruption of their social relation also damages their already broken down prison psychology. In order to protect themselves they make themselves give a decision about their relationships 'more or complete?' Some of them think that their relationships will be better after prison; but on the other hand as much again believes in that their relations will be the same or worse.

Within the context of "Modernization of Judgement and Penal Reform Project" life standards of prisoners ameliorated. During their penal time prisoners can take the advantage of the library, social facilities (such as concerts, screening, and sport facilities), vocational courses, work opportunities with an amount of salary and insurance, seminars and special education programs and the canteen.

But as prisoners, they think feel that 'the previous day's the same every day'. Women working in the prison during the weekday, spend their weekend for their personal care and

for their rest. They also participate in different facilities in the prison during their penal time but most of them prefer to participate in individual facilities rather than group facilities. The reason for choosing individual facilities is that they want to rest their already tired psychology and mind. In addition to the prison facilities they prefer to watch television, read books/magazine/newspapers and chatting with their friends whom they share the same ward.

The research also provided the chance for comparing the prisons before the reform project and the new improved prisons. According to the women prisoners the living standards in improved prisons are much better than the old-type prison. Having a single room which belongs to each prisoner, with its balcony, bathroom and toilet makes them feel like at home. At this point, it is implied that women need a prison which seems and presents more domestic life style that a woman needs but a man does not.

Detained/sentenced women are able to improve their own life in the prison by spending money (fridge, television); but the problem with the women prisoners is that because they lost their family and near surroundings their economic conditions are not always sufficient for this improvement. But it is not possible for us to make this interpretation for the male prisoners; because their relations are not affected as women's relations with their parents and relatives.

The most sensitive issue for the women prisoners is 'being a woman, a wife and a mother' in the prison. Because detained/sentenced women showed extreme emotional response this issue cannot be talked in a detailed way. But the important point is that; although they were so sensitive about the issue their first target, after they left the prison, is to claiming themselves and then their children for establishing a new life.

During the interviews it is seen that the hardest thing for the married women who have children is being a mother; if the prisoner is married but not a mother, the hardest thing is being a wife and finally if a woman in the prison is single then it is hard for her to be a woman and prove her own needs. Being away from their children, not being with them

during their adolescence and having time with them only certain days for a limited time are the most corrosive things that mothers in the prison live in their all life.

Lack of women's parents and children is the most important thing during their prison life, as it is mentioned before. They feel that their children and parents are also sentenced or detained because of their imprisonment; and this makes them feel unhappy especially women with living in prisons with their children are feeling embarrassed of their children's experiences during the penal time of them; and also thinks their children are more imprisoned than themselves.

Women prisoners are also have ideas about the financial costs of improvements in the prisons and they support these improvements. But on the other hand most of them specifies that; whatever the government does for the improvements of the prisons, those places are still 'prisons' and this sometimes makes nonsense for them. Detained/convicted women feel themselves self-confident and as 'a person' not 'a criminal' because of the humane treatment in the prison. This kind of treatment is also effective on the criminal behavior of the women; such as; most women mentioned that they will not commit an offense after they are discharged by the help of these treatments; but of course there are still women who emphasizes that committing crime is a way of life for them (burglars).

3. Conclusion

In Turkey and worldwide, the concept of crime had become an important problem. Although countries try to explain the increasing ratios of crime with urbanization or economic conditions, it should not be forgotten that concept of crime has its own some kind of dynamics keeps its mobility. These active dynamics lead different disciplines to study crime in order to understand all aspects of it.

The evaluation of the concept of crime from a gendered perspective tried to be explained by the individuals' socialization process, by 1950s. According to these descriptions, because boys were growing up as hard, competitive and ambitious people they were more biased to commit crime, as girls were growing up politely, courteously and domestic.

After 1980s, with the rise of the women's dominance in the public domain, chance of act and role in the public domain; women's criminality started to be studied with its social dimensions instead of its biological, physiological and psychological dimensions. After 1980s, by the increased number of women's movements and women's more active work life, compared to previous years, the view that types and rates of crimes women commit changes became widely accepted. Widespread acceptance and use of this view can be seen as one of the most important indicators of women criminality's evaluation on the basis of social dimensions.

Obviously, both urbanization and industrialization has their significant impacts on women criminality; but I should not forgotten women's place in criminal activity took keeps its place since the beginning. Saying that women's criminality has come up, especially with the dramatic change of approach which supports the protection of women against the world outside the home. As women took their place in the business market and as the jobs offer different options to them, women started to live in the criminal atmospheres. Women were seen in the criminal atmospheres before because of the necessity to defend themselves against the undeniable facts (domestic violence, workplace harassment, etc.).

This research covers many variables, causes and different prison understandings in it. But on the other hand this research is not much adequate (because of limited sample) for making generalizations such as 'women in the prisons cannot generate themselves as women' or 'women are unable to meet their needs during their penal time'.

As Simon and Landis mentioned in their own study; male-prisons differ from prisons for female. First of all number of prisons for women are not sufficient fort the countries in general so women prisoners are being sent to different cities when they are arrested. This causes women prisoners feel lonelier and alienated both because they are in prison and away from their own city. This makes them live their imprisonment in a doubled way. In addition to these emotional and physical deprivation women prisons are more heterogeneous structured because they involve prisoners from different age and guilt. For these reason women prisons must be structured and categorized for ideal penalty process.

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Furthermore efficiency of the women force based work conditions, business lines and vocational educations' must be solidified.

Instead of prisons which are structured with limited living conditions and male- based; feminine and domestic ideology based prisons' construction will be a solution for the restricted and indispose women prisons' problems. Furthermore, before the improvement of the women prisons governments must focus on embarrassing women's criminality, women's defending of their own rights and redoubling the seminars and projects about social awareness. All these precautions will avoid the difficulties named 'prison problems'.

This study searched for answers of women prisoner's about prison conditions and the requirements of being a woman in a prison and its conditions. In order to make generalizations on these issues the study must be actualized by asking deeper questions in a wider time period and with a larger sample. The researches on these kinds of studies would be useful for improving new and efficient social policies and also would be significant and reliable references for the crime literature.

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Effects of Oil Price, Interest Rate and Dollar Price of Euro on Gold Price

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Abstract

We have witnessed sharp increase in gold prices in recent years. Since gold has many functions as directly used in jewellery, hedging against inflation and providing economic and physical safety etc, it is very important to know what the determinants of gold prices are. This paper, using the world gold price data for over 10-year period from 2000 to 2009, aims to explain the rise in gold price by considering the effect due to changes in oil price, eurodollar parity and interest rate. Thus we can understand the components of the gold price and advise policy. In our analysis, we applied Ordinary Least Squares method to estimate our regression model, cointegration test to find out if there is long run relationship between gold price and the other variable and made unit root test, specifically Augmented Dickey Fuller test, to investigate the stationarity. After that Granger- Causality test between gold price and each independent variable; except oil price, is examined. We omitted oil price from our model. This is because, just interest rate is not I(1) process, but it is I(0). The result without oil price shows that there is no long-run relation between gold price, interest rate and eurodollar parity and Granger- Causality does not occur for both gold price-interest rate and interest rate-gold price, and for gold price-eurodollar parity and eurodollar parity-gold price.

1. Introduction

In recent years gold has been controversial because of sharp increase in gold prices. Price of gold exceeded 1134$ per ounce in London Bullion Market in December 2009. 2008 Global Economic Crisis gave rise to uncertainty in the global economy including

developed and developing countries. Gold is not only used in jewellery but also used in industrial and medical applications. Moreover, gold is used for investment purposes by governments, households, institutional and private equity investors. If there is an economic uncertainty then gold becomes insurance. In such cases, gold can protect us against the inflation and deflation.

In addition, according to the World Gold Council (2006) Central Banks hold gold reserves because gold provides economic and physical safety, sustains worldwide confidence and offers diversification benefits.

Gold is a frequently investigated topic in literature. However each studies approach our variables from different point of view. Ghosh *et al.* (2002) divided demand for gold into two: one of them is "use demand" and the other one is "asset demand". Use demand consists of production of jewelry, medals and coins. They matched asset demand with effective hedge. We have mentioned that gold had become an insurance policy, when there was an economic uncertainty. Capie *et al.* (2005) mentioned that even after money was invented, gold have remained to be hedge. They also explained that, if we have gold as money, this means we link currency to gold at a fixed price. In this case, price of gold cannot be determined by the governments or central banks and automatic stabilizing mechanism occurs. Furthermore, Vaihekoski and Patari (2007), group the demand for gold into two categories. These are the demand for the physical gold and demand for investment purposes of institutional and private equity investors.

Basically, in literature, most of the researches emphasized on hedge characteristics of gold. For instance; Aggarwal (1992) mentioned about gold's failure of being short run hedge against inflation. According to him, gold is an effective hedge against inflation and political uncertainty in the long run, not in the short and medium terms. An asset is an inflation hedge if it yields a return exceeding the inflation rate (Hsieh *et al*, 2002). Likewise, Gosh *et al.* (2004) have found the price elasticity of gold, compared to the US CPI, lead to a conclusion that gold is a long-run hedge against inflation. Capie *et al.* (2005) explained why gold has been a hedge. The reason behind this situation is gold is homogenous asset and it is easily traded in continuous open market. Levin and Wright

(2006) emphasized in their article that, gold is a long-term hedge against inflation. However, there are short-run deviations from the long-run relationship between the price of gold caused by short-run changes in the US inflation rate, inflation volatility, credit risk, the US dollar trade-weighted exchange rate and the gold lease rate, as well as there is a slow reversion towards the long-term relationship following a shock that causes a deviation from this long-term relationship. Kucukozmen *et al.* (2008) investigated whether gold or oil is a better indicator of the inflation and tried to find out which one provides a better hedge against the inflation in Turkey. Kucukozmen *et al.* (2008) reached a conclusion that gold is a better inflation indicator than oil, whereas inflation hedging abilities of both gold and oil depend on the existence of a stable long term relation with the inflation rate which is not existed.

Several researches are made about effects of exchange rates on gold prices. Han *et al.* (2000) studied the long term and short term relationships between the exchange rate of AUS/USD and the gold price. They found out that there is a positive relationship between AUS/USD exchange rate and gold price. Vaihekoski and Patari (2007) used US/world exchange in their model which is statistically significant. Moreover they found out that the dollar depreciation would lower the price of gold to investors outside the USA and raise the demand for gold and raise US dollar price of gold. For a non US investor, dollar depreciation would lower the price of gold for them and make it more attractive.

Furthermore, a research about gold was made by Ozturk and Acikalin (2008) comprising Turkey. They analyzed whether gold is an internal hedge or an external hedge against TL. This study found out that gold is an internal and external hedge which means gold is hedge against possible TL depreciation and rising inflation. Also authors concluded that gold can help for monetary policy decisions because gold price is a good indicator of expected inflation.

The aim of this paper is to analyse the effects of oil prices, euro dollar parity and interest rate on gold prices. The results of this research can contribute to policymakers and analysts to understand the determinants of gold price better. As well as the financial markets can be

understood thoroughly by these actors. By this way they can take the most appropriate position.

This paper's contribution differs from the contributions of previous gold studies. First of all, we take into account the effect of interest rate. Also this study uses more frequent and the most recent data.

The remaining sections of this study are as follows. Section II includes our data and the method of our model, Sub-head under the Section II presents the estimated results, finally Section III is the conclusion part with short summary of our study.

2. The Model

In this section, we will summarize our model's data and present the methodology of our model. The data are monthly and cover the period from January 2000 to December 2009. There are 120 monthly observations, obtained from various sources.

We obtained our dependent variable, gold price, from "The London Bullion Market Association". As can be seen from Figure 1, there is an increasing trend in gold price and reached its the highest point, $1134.72, on December, 2009. During last 6 months gold prices tend to increase.

One of our independent variable, oil price, was taken from "Official Energy Statistics from the US Government". Oil prices increased rapidly during this period and the reasons behind this can be explained by the Iraq War and Asian growing demand for oil. However in the last 2 quarters of 2008, oil prices decreased sharply because of Global Economic Crisis and reached to a minimum level, $31, that had not been reached since 2004. For last 6 months, oil price started to increase again (See Figure 2). We expect a positive relationship between oil price and gold price.

Another independent variable, euro dollar parity, was provided from "Board of Governor of the Federal Reserve System". Euro dollar parity specifies how much one euro is worth

in terms of dollar. Euro started to be in circulation from 2000 in EMU and that's why we collected our time series data from this date. We expect a positive relationship between eurodollar parity and gold price. This is because as dollar depreciates against euro, for non-US citizens purchasing gold will be cheaper and demand and price of gold increases.

The last independent variable is interest rate. It was obtained from "Board of Governor of the Federal Reserve System". We took 3 months US Treasury Bill's interest rate from secondary market into our model. We expect a negative relationship between interest rate and gold price. As interest rate decreases, opportunity cost of depositing money to the bank will decrease and people can start to invest in gold more. Figure 3 and 4 illustrates the data of interest rate and eurodollar parity, respectively.
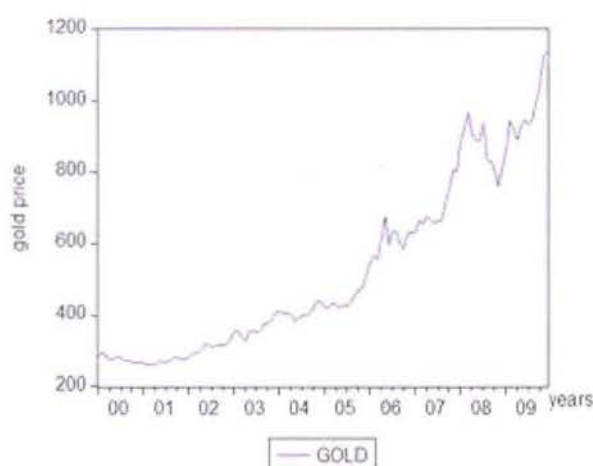
Figure1: Gold Price, 2000-2009
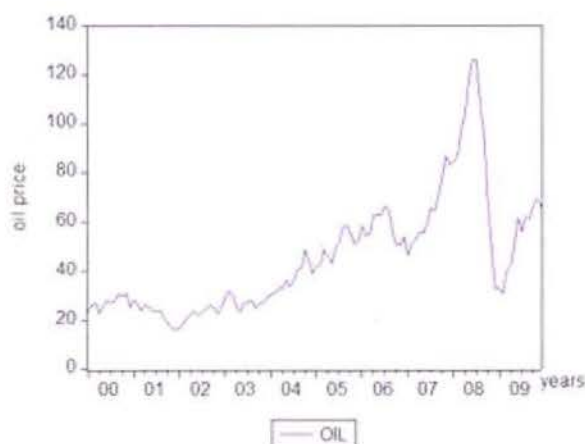
Figure2: Oil Price, 2000-2009
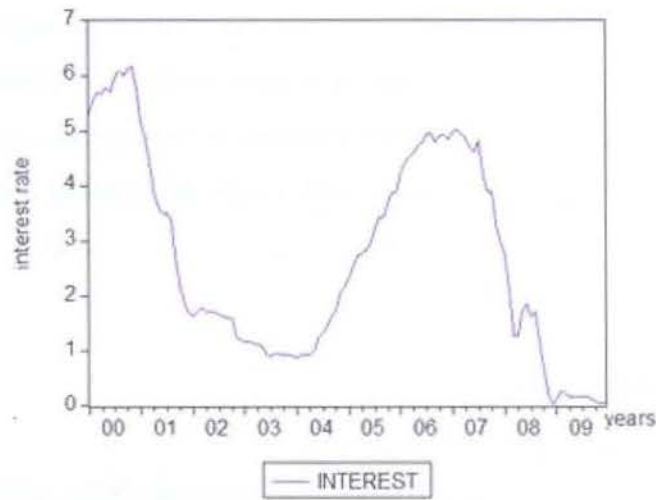
Figure3. Interest Rate, 2000-2009
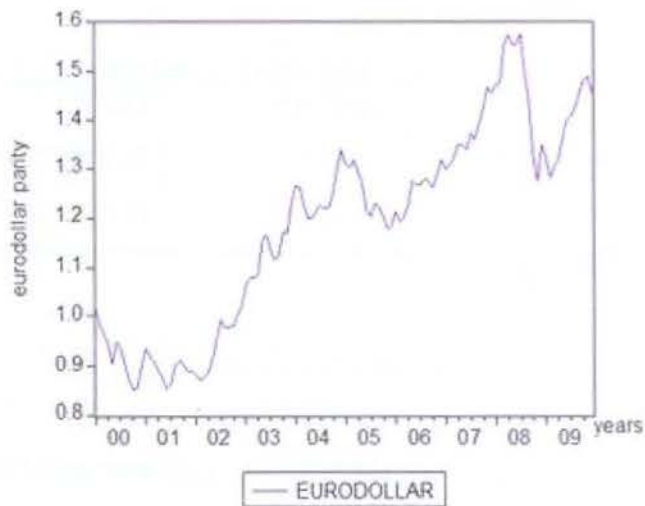
Figure4. Euro dollar parity, 2000-2009

Our regression equation is;

$$Gold_t = \beta_{1t} + \beta_{2t}Oil_t + \beta_{3t}Eurodollar_t + \beta_{4t}Interest_t + \varepsilon_t$$

Where gold is our dependent variable and it shows gold prices. β_{1t} is constant term and we have 3 independent variables; oil price, eurodollar parity and interest rate respectively.

In order to evaluate the effects of oil prices, eurodollar parity, interest rate on the gold price we used Ordinary Least Squares method. Unit root test, -Augmented Dickey Fuller test- is applied to gold price, oil price eurodollar parity and interest rate series to investigate the

stationary properties of the relevant series. After that, we examined relationship between the nonstationary variables by using cointegration test which investigates the long term relationship between variables. To understand whether there is cointegration or not; firstly, we obtained residual series from OLS estimation and applied unit root test on it. In addition, we applied Granger- Causality test for each independent variables with dependent variable in pairs.

2.1. Empirical Results

To observe the effects of oil prices, interest rates and euro dollar parity on gold prices, their regression was calculated by using OLS estimation procedure. Results are presented in Table 1.

Table 1: Determinants of gold price

Coefficient	Constant	Oil Price	Euro/$	Interest Rate
	-421,195*	2,683*	729,823*	-16,837*
	(108,412)	(0,895)	(110,174)	(6,701)
R^2 0,780 n=120	DW-stat 0,076			

* Denotes significance at the %5 interval.

Results indicate that all variables are statistically significant at %5 interval. The 78 percent of the variation in gold price can be explained by the model in %95 confidence interval. Durbin-Watson d statistic is 0.07 and as a rule of thumb, if R2 is greater than Durbin-Watson d statistics we can suspect from spurious regression. Even though there is a significant relationship between variables, this result may be caused by nonstationary time series used in our model. Therefore, Augmented- Dickey Fuller tests are applied at level to our time series variables. The unit root test results for all series are presented in the Table 2 below.

Table 2: Unit Root Test Results

Series	Trend Present	Tau-statistics	5% critical values	Decision
Gold Price	No	1,653	-2,886	DRH_0
	Yes	-1,313	-3,448	DRH_0
Oil Price	No	-2,668	-2,886	DRH_0
	Yes	-4,374	-3,449	RH_0
Euro/$	No	-1,025	-2,886	DRH_0
	Yes	-3,011	-3,448	DRH_0
Interest Rate	No	-1,438	-2,886	DRH_0
	Yes	-1,440	-3,448	DRH_0

An intercept was included in the model and the test was performed in the absence of a trend term and with a trend term present. Test results indicate that all of the series are nonstationary, but the oil price with trend is stationary.

Plots of variables strengthen our test results. The plots of variables as indicated above, already have a general appearance of nonstationary but, in the interest graph there is an uncertainty of nonstationary.

After that, we applied the unit root test for the first differences of the nonstationary variables. Results are given in Table 3 below.

Table 3: Unit Root Results- First Differences

Series	Trend Present	Tau-statistics	5% critical values	Decision
Gold Price	No	-10,286	-2,892	RH_0
	Yes	-10,698	-3,458	RH_0
Interest Rate	No	-6,114	-2,886	RH_0
	Yes	-6,088	-3,448	RH_0
Euro/$	No	-7,838	-2,886	RH_0
	Yes	-7,796	-3,448	RH_0

Gold prices, interest rate, euro dollar parity became stationary in I(1) process. The plots of the first differences for gold price, interest rate and eurodollar parity are presented below. Consequently, according to test results, oil price is I(0) with trend present and the other variables are I(1). Plots have a general appearance of stationary as you can see at figures below.
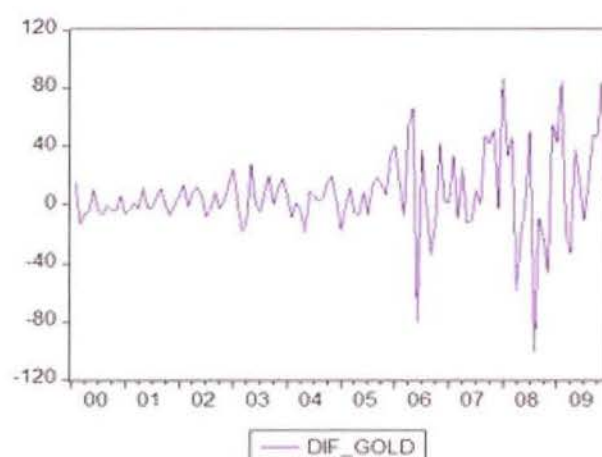
Figure 5: Stationary process of Gold Price
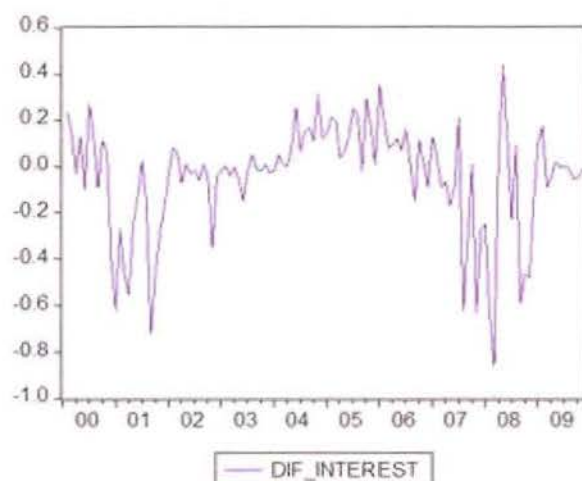
Figure 6: Stationary process of Interest Rate
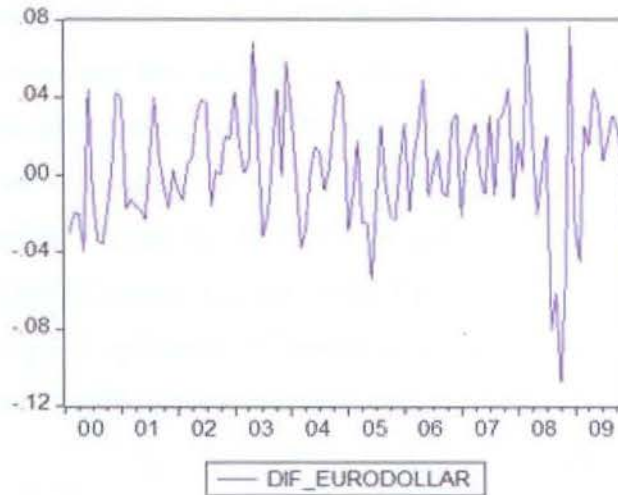
Figure 7: Stationary process of Eurodollar Parity

To utilize cointegration method, all series have to be simultaneously integrated of the same order. Since oil price is I(0) with trend present and the other variables are I(1), we dropped oil price from our regression model. Therefore, we re-run the regression by omitting the oil price. See table 4

Table 4: Determinants of gold price

Coefficient	Constant 662,474* (75,028)	Interest Rate -8,146 (6.243)	Euro/$ 1016,282* (56,606)
R^2 0,762 n=120	DW-stat 0,070		

* Denotes significance at %5 interval.

We obtained residual series from this model and applied unit root test to this residual series. Augmented Dickey Fuller test statistics is -0.3 and critical value at 1% significance level is -3.9. Since critical value is less than test statistics, we do not reject null hypothesis. Hence, we reached that residual series has a unit root. If residuals has unit root there is no cointegration which means there is no long-term relationship between the independent variables and dependent variable.

Lastly, we investigate causality, direction of influence of these time series. In order to investigate causality, we executed Pairwise Granger causality test procedure. Granger

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causality test assumes that, series used in test are stationary. That's why we used first differences of time series. In addition, we should find optimum lag numbers to apply Granger causality test for each pairs; gold and interest rate, gold and eurodollar parity. To find optimum lag numbers, we estimated Vector Autoregression for each pairs in different lag numbers one by one. After that, we checked the Akaike Information Criteria and we picked the lag number in which VAR has minimum Akaike Information Criteria. Our data is monthly time series so we repeated it until the tenth lag. For gold and interest rate and for gold and eurodollar parity optimum lag number is 1. The results of Granger causality test are presented in Table 5

Table 5. Pairwise Granger Causality Test Results

Null Hypothesis	F statistics
Gold price does not Granger cause Interest Rate *Interest Rate does not Granger cause gold price* *Euro dollar does not Granger cause gold price* *Gold does not Granger cause euro dollar*	*0,010* *0,484* *0,052* *0,041*

The null hypothesis that gold price does not Granger cause interest rate, and also interest rate does not Granger cause gold price cannot be rejected. Moreover, eurodollar parity does not Granger cause gold price and gold price does not Granger cause eurodollar parity in the short-run. Consequently, there are not causality between gold-eurodollar parity and gold-interest rate.

3. Conclusion

In this paper, effects of oil price, euro dollar parity, interest rate on gold price are analysed. First, we run the regression by using OLS estimation process. Then we suspect from spurious regression and stationary properties of the gold price, interest rate, oil prices and eurodollar parity series.

All variables must be the same order of integration; this is a precondition for cointegration. Oil price has different order. That's why we drop the oil price from our model. We applied unit root test to this model's residual series to examine cointegration relationships. As a

result of this test, we conclude that there is no cointegration, no long-term relationship, between independent variables and dependent variable. Furthermore, in order to determine the casual relationships between €/$ exchange rate and gold price and between interest rate and gold price, Pairwise Granger causality test is used. The results indicate that gold does not Granger cause interest rate and interest rate does not Granger cause gold, similarly, gold does not Granger cause the eurodollar and eurodollar also does not Granger cause gold price. As a result, there are no short term relationships between these variables either.

During our research, we expect a relationship between our independent variables and dependent variable. We expected to explain variations in gold prices by variations in our explanatory variables. However, results do not support our expectations. We find out that there is no cointegration between our dependent variable; gold price and independent variables; interest rate and eurodollar parity. Consequently, we face with a spurious regression. Advanced econometric methods and lengthier time series data can lead different results from ours. This research can be an example for the further papers.

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Special Economic Zones: Essences and Possibilities

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Abstract
This paper analyzes necessity and need for creation of special economic zones during the period of formation of a model of an open economy on the example of the Republic of Kazakhstan. Period of fundamental changes in economy during transition from closed to open economic systems is studied. The role, essence and possibilities of special economic zones are considered. The study and analyses of operating special economic zones in Kazakhstan are made. The paper concludes that special economic zones will bring positive impact just in case of deep analyses and study all the possibilities and threats.

1. Introduction

Today is era of globalization and integration of world economy. Countries all over the world are interconnected. Today is the right time for developing countries to gain potential and economic power, and on the other hand, there are plenty opportunities for developed countries to invest and make profit.

Many developing countries are going through the process of fundamental changes and integration into the world economy. The governments of developing countries should be very careful and forward-looking. There are many ways to stimulate domestic economy and provide economic growth. Special economic zones can serve as an effective instrument of strengthen the national economy through possibilities of external activity.

However, the creation and functioning of special economic zones can bring as positive as negative impacts. World practice shows that hot all special economic zones brought

successful results. Formation of a special economic zone should be deeply analyze and studied. The aim of my work is investigation in necessity and need for creation of special economic zones during the period of formation of a model of an open economy.

The main tasks of my work are follows:

- Consideration of a process of forming of a model of open economy by most developing countries and countries of CIS on the example of Kazakhstan
- Study of essence, purposes and possibilities of special economic zones,
- Analysis of presently operating special economic zones in Kazakhstan. In the work textbooks, periodicals, magazines, internet sites and norms of legal base were used.

2. Tendencies of Globalization and Formation of an Open Economy in Developing Countries on the Example of the Republic of Kazakhstan

For the last several decades all countries in the world got engaged in a process of regional integration and globalization. Globalization is a process of strengthening the linkages and interdependencies, covering the economy and other spheres of life in the world scale.[1] Globalization touches all spheres of human life. It influences on politics, culture, laws and especially on economies of countries. XXI century is the time of prosperity of high-tech and information technologies which interconnect people all around the world. Products, resources, finances, ideas freely flow between countries and nations. Governments of all countries perceive the great importance of the development of international relations and foreign policy. Foreign trade relations play one of the major roles in the economic development and sustaining of steady economic growth. According to the World Trade organization the importance of international trade has increased significantly over the last 60 years.

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[1] Sidorovich, A.V. (2007). The course of economic theory: the general basis of economic theory. Microeconomics. Macroeconomics. Basis of the national economy: a manual for students; M. V. Lomonosov Moscow State University. (p. 940). Moscow, Business and service.

Figure 1: Comparison of Growth of World Export, Gross World Product, and World Production

Comparison of Growth of World Exports, Gross World Product, and World Production

Legend: Value of World Exports — Volume of World Production — Gross World Product
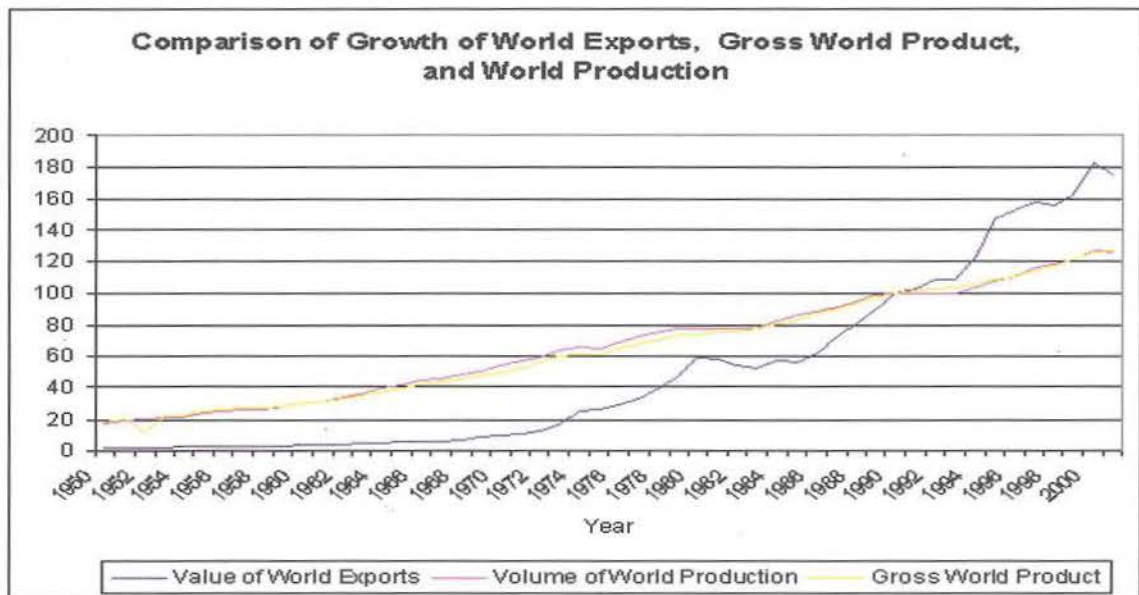
Source: World Trade Organization (Graph by Tom Hale, July 2003)

The trends of globalization expand the degree of openness of internal markets and domestic economies to the world. This process increases the demand for the competitiveness of domestic producers Countries around the world are getting involved in a process of accession to the system of international economic relations. This is a very important procedure for developing countries. In the context of globalization one of the prior tasks of developing states is constructing of a model of an open economy and conducting the correct foreign policy. On the example of the Republic of Kazakhstan let's examine and analyze the problem of the formation of an open economy and conducting true foreign policy, and the possibility of introducing an effective development tool - special economic zones.

Until 1990, Kazakhstan was a part of the Union of Soviet Socialist Republics (USSR). The economy of the USSR and other socialist countries represented a relatively closed system, which was largely independent from the rest of the world economy. There existed a system of prices which was significantly different from the world, the ruble was not freely convertible and the companies had not been directly linked to the world market and had no experience on it. The right to access external markets had a narrow range of specialized

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foreign trade organizations. Thus, the changes of the world market conditions did not directly affect the activities of manufacturing enterprises.

After Kazakhstan gained independence the radical changes in all areas of the country occurred. In the economy of Kazakhstan, like in other former USSR countries, a policy of liberalization and development of market relations was introduced and started implementing. New tendencies brought essential changes to the system of external economic relations. Still relatively closed system began to transform to an open economy. National economy gradually started integrating into the global economic system. This fundamentally changed the conditions of interaction between the domestic and world economy. Now trends in world commodity and financial markets, political changes in the international arena have a great influence on domestic conditions The open economy resulted in the competition between national production and foreign competitors in internal and external markets.

Formation of an open economy and integration into the world economic relations has both positive and negative sides. The openness of the national economy has several advantages.

They are:
- Strengthening the role of external economic relations as a factor of economic growth and structural transformation;
- Expansion of participation of countries in the global division of labor;
- Bringing the level of production, technical equipment, cost and quality of products closer to world standards;
- Improving the competitiveness of national economy;
- Expansion and consolidation of forms of cooperation: the interweaving of capital, scientific and technical cooperation, production integration;
- The formation of market infrastructure.

However, the relatively abrupt transition to an open economy led to some negative results. After the collapse of the Soviet Union the country was experiencing social and economic crisis and recession in production. The industrial infrastructure of Kazakhstani economy

was lagged behind the developed world leading industrial and technical systems, there was a severe shortage of highly effective export-oriented industries, especially hi-tech manufacturing, the cost of manufactured goods was high. Domestic production was unable to withstand competition from foreign products. This has resulted in raw material and fuel export orientation and technological dependence on developed countries.

Following the word experience, we can conclude that the basic problem of formation of an open economy is the simultaneous liberalization of domestic and international economy while protecting the interests of national economy. In the former Soviet Union pace of external liberalization was much faster than internal reforms. The consequences of this process were inflating of the domestic market with foreign goods, mitigation of economic disproportions, but the domestic market became too open to the outside. Liberalization of export and import, export of capital from the country did not encourage investment, job creation and development of domestic production.

The most important strategic objectives of foreign economic policy of Kazakhstan, as most developing countries, in modern conditions are:

- A serious restructuring promoting the successful implementation of foreign economic policy that meets the latest international standards and trends
- Enhancing the role of the state in foreign economic activities to protect national rights and interests
- Achieving a favorable trade policy regime in relations with foreign countries and economic groupings, the removal of discriminatory restrictions
- Initially, the stabilization of raw material exports as the main source of currency reception for the modernization of the economy, solving urgent social problems
- Attracting additional investments to the country for the restructuring and development of export opportunities
- Ensuring access of domestic enterprises to global machinery and equipment, technology and information, capital markets and mineral resources
- Providing moderate protection against the newly created import-substituting industries, particularly in prior industries
- The long-term regulation of the monetary and financial issues with the creditors

As international experience shows, the basis for effective foreign economic activity in the movement towards an open economy is the development of high technology export capabilities and full support of the national exporters. The positions of the countries in the world economy depend on their competitiveness. One of the most important tasks of the state is to create an enabling environment for competitive production at the firm level. The favorable actions for achieving this goal are the increase in aggregate demand, investments and innovation activities, development of scientific and technological capacity, increase in funding for basic and applied science, research and development, and education. At present, the important role in strengthening the national economy through possibilities of external activity is played by free or special economic zones.

3. Essence of Special Economic Zones

For the last several decades the free or special economic zones were widely developed throughout the world as an instrument for expansion of external policy, attracting foreign investments and developing of internal economy.

By this moment, many countries have practiced the implementing of the instrument of free economic zones. In the experts' estimation, in a total of 120 countries there are over three thousand different special economic zones with an annual turnover of 600 billion dollars. [2] This instrument is used according to economic conditions, needs and purposes of the home country. Though there are many types and definitions of free economic zones.

In the common sense, free economic zones are defined as designated areas of a state with special economic, legal, administrative, tax regime assisting to expansion of external economic ties, attraction of foreign and domestic investments, development of new technologies, and creation of modern productions. Meng Guangwen in his work on free economic zones gives the following definition: "in order to realize certain economic and political objectives, free economic is geographically defined in an area or zone inside a

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[2] Andreeva, I. (2009) Recreational facilities of the new type are developing, despite the crisis. Russian Newspaper, #4997 (173)

country or in a cross-border area between several countries where certain economic activities are especially allowed and where free trade and other preferential policies and privileges different from those in the rest of the country are granted." [3]

According to the Law of the Republic of Kazakhstan "About special economic zones in Republic of Kazakhstan", "Special Economic Zone is a limited area of the Republic of Kazakhstan with precisely defined boundaries which creates favorable conditions for the implementation of prior activities. Special economic zones are generally formed with the objective of development and support of industries, accelerating regional development and solving social problems, improving business efficiency, attracting investment, technology and modern management, creating highly efficient and competitive industries." [4]

Special economic zones can be interpreted as a tool for selective reduction of state intervention in economic processes. On the territory of the zone there is a wide range of institutional changes. These changes are associated with the preferred regime which should serve as a tool to implement the existing comparative advantages of a particular national space, rather than a mechanism of compensation of the lack of factors of development on the defined territory.

Characteristic features of the SEZ are:
- Application of different types of preferences and incentives, including the reduction or elimination of export and import duties, simplified procedure for conducting foreign trade operations; tax reductions, provision of subsidies offered by budgetary funds and preferential government loans or in the form of low prices of public utilities, lower rents for land use, etc.; simplifying procedures for business registration and arrival and departure of foreigners.
- The presence of local, relatively isolated management system with the power to make decisions in a broad economic spectrum
- Full support from the central government.

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[3] Gunagwen, M. (2003), The Theory and Practice of Free Economic Zones: a Case Study of Tianjin, People's Republic of China (p.18). University of Heidelberg, Heidelberg.
[4] Law of the Republic of Kazakhstan dated 06.07.2007 #274-3 "The Special Economic Zones in the Republic of Kazakhstan"

As a result of various incentives in SEZ rate of return is 30-35% and sometimes even more. [5]

There are different types of free economic zones. Experts and scientists argue about classification and typology of free economic zones. Some assert that that there are about 30 different types of free economic zones, some suppose that this number is about 15. All types of free economic zones can be grouped by various criteria. Generally, there 5 main criteria or attributes for classification of free economic zones:

a) Size of the area (wide area, small area)

b) Form of organization (territorial or regime type)

c) Functional purpose and nature of activities

d) Degree of integration into the world and domestic economy

e) Nature of property (state, private, international zones)

Following the history and development of free economic zones we can consider 6 main types of them:

- <u>Trade-based free economic zones.</u> This type of free economic zones has the longest history. The first zones of this type emerged in XIV-XV century. Today they are usually situated on the boundary territories, ports and airports. Firstly, they had mainly commercial objectives, but with the historical and economic development they obtain macroeconomic goals, such as integration into the global economic relations, implementing the open policy and practicing of structural reforms. "Besides free financial policy (free exchange and operation of foreign currency), free flow of capital and funds, free investment (less-restricted investment in industrial sector) and relatively free flow of personnel between the zone and the foreign countries, trade-based free trade zones enjoy the most freedoms of good import and export." [6] An example of kind of trade-based free economic zones can

[5] Solovieva, Z. (2007). Special economic zones as a tool for attracting foreign direct investment, <u>International economy,</u> #3

[6] Gunagwen, M. (2003), The Theory and Practice of Free Economic Zones: a Case Study of Tianjin, People's Republic of China (p.28). University of Heidelberg, Heidelberg.

be well known net of shops "Duty free" which is widely spread in many international airports.

- Manufacture-based free economic zones. This type of free economic zones is characterized for less developed countries. It is an instrument for realization of macro and micro economic objectives. The creation of manufacture-based free economic zones is based on several main factors which are favorable location, developed infrastructure and low labor cost. There are several varieties of manufacture-based free economic zones. The two main subtypes are import and export oriented free economic zones. The export-oriented free economic zones are designed to increase export potential of the country, attract additional investments, and stimulate currency reception which is used for modernization of the economy and solving urgent social problems. The second subtype, import-oriented free economic zones, serve to improve internal condition, for instance to saturate the domestic market with foreign goods, mitigate distortions of regional economic structure.

- Service-based free economic zones. Service-based free economic zone means that, in order to maintain the historic competitive edge or to promote the development of remote regions, and, furthermore, achieve economic benefits, the area with convenient communications in a regional economic centre or in a remote region is selected, where special economic, administrative policy, and deregulation is applied, which is not granted elsewhere in the country, and where special economic activities such as finance, insurance, tourism, and other specific services are in operation. [7]

- Science-based free economic zones. Science-based free economic zones are modern, well developed type of free economic zones. On the territory of science-based free economic zones financial and tax preferences are operating and scientific-research centers and high tech industries are concentrated. Scientific and technical progress plays the biggest role in intensive economic growth. It provides constant improvement of resources quality and productivity. In modern conditions, the competitiveness of a state economy defines by the development of high

[7] Gunagwen, M. (2003), The Theory and Practice of Free Economic Zones: a Case Study of Tianjin, People's Republic of China (p.32). University of Heidelberg, Heidelberg.

technology export capabilities. High tech industries include information technologies, biotechnologies, robotics, telecommunication, aerospace engineering and many others. The purpose of creation of science-based free economic zones is rapid economic, scientific, technological development, intensive economic growth. For formation and well-functioning of this kind of free economic zones the following conditions should be maintained: well-developed infrastructure, convenient communication capabilities, density of scientific research centers, high-qualified personnel, high-concentration of capital. The subtypes of science-based free economic zones are science-based parks, industrial parks, techno-policies and others.

- Comprehensive free economic zones. Comprehensive free economic zones are zones of new generation. This kind of zones doesn't have a narrow specialization and includes features of all above mentioned types of free economic zones. The organizational structure of the zone is complicated. Its territory is usually wide and may occupy the territory of an area and sometimes even a region. The zone is a geographically defined larger area, which enjoys comprehensive preferential policy and privilege, possesses the multifunction and comprehensive objectives, complete industrial sectors, and the spatial structure of the multi-zones. [8]

- International free economic zones. These zones started to emerge recently as one of the tendencies of integration. The zones are created in the border areas of two or more countries with the participation of both private firms and the States.

The purposes of creation of free or special economic zone in different countries can de various. For example, some countries use special economic zones as an integration tool, others for attraction of foreign technologies and investment for development of a particular region or the economy as a whole. However, we can define three main directions of purposes. They are:

- Economical, such as deeper integration into the world economy, attraction of foreign and domestic investment for development of high competitive production,

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[8] Guo Xingchang (chief edited). (1987). An Introduction to World Free Port and Free Trade Zone (p. 72). Publishing House of Beijing Aeronautical Engineering Institute.

using benefits of world division of labor for expanding of export-oriented production, magnification of currency entering into a state budget;

- Social, such as complex development of backward regions, reduction of distinctions between them and the contribution to strengthening of uniform economic space; increase in workplace, training and preparation of the high qualified national workers;

- Scientific and technical, for example enlargement of high technology production, development and use of the newest foreign and domestic technologies, implication of new forms of the management organization and production.

As world practice shows, creation and functioning of special economic zones brings not only positive results. Creation of a special economic zone should be deeply analyzed and evaluated. Several fundamental principles should be followed for creation of a profitable and successful SEZ:

- Favorable geographical position connected with main transport ways
- Presence of infrastructure; it includes presence of power resources, gas lines, plumbing, sewerage system, paving roads, easy accessible service institutions.
- Presence of cheap and simultaneously qualified human recourses
- High level of provision of financial resources
- Developed and stable legal bases
- Formation of special administration bodies
- Favorable investment climate which consists of political stability, guarantee of investment security and other assets, transparent and stable legislative framework, low level of crime

Creation of a special economic zone is innovative project with high level of risk. Process of creation and functioning of a special economic zone should be well thought, analyzed, jointly regulated by government and investors. In case of success it will bring positive impact not just on a concrete territory, but on the state economy as a whole.

4. Experience of Creation of Special Economic Zones in Kazakhstan

In 1990 the law on free economic zones was adopted in Kazakhstan. Any lawful activities were allowed on the territories of the free economic zones. Companies operating there were provided with a wide list of benefits and customs relief measures. In the period from 1991 to 1996 nine free economic zones were established in Kazakhstan. However, most zones were established without proper analysis. The management mechanism was not clearly thought out, the centers of responsibility were not identified, and the necessary legal framework was not prepared. In such conditions, only one Lisakovsk free economic zone turned out to be relatively successful. The free economic zone regime allowed to stabilize the work of two major factories and create dozens of new enterprises in the food and light industries In any case, the unsolved problems of functioning of SEZ led to the fact of their abolishment in 1996 regardless of their success.

In the same1996 a decree of the President of the Republic of Kazakhstan having the force of law "On special economic zones" was issued. There have been made substantial changes in work rules and management of SEZ. It introduced the maturity of the existence of SEZ, changes in management system of SEZ were made, the legal regime has been brought into line with current tax and customs legislation. Each zone today has its own priorities and projects. Currently there are 6 special economic zones functioning in Kazakhstan. Two of them are working actively, two - are under development and another two are in infancy.

4.1. Special Economic Zone "Information Technology Park"

At this stage of formation of the Kazakhtani economy, one of the priorities is the development of export production. In today's world there is a great need for rapid processing of large volumes of information and fast decision-making. In 2003, the decree #1166 on establishment of a special economic zone "Information Technology Park" was issued. This decision was made to establish in the country new export-oriented and import-substituting industries of information technology and to organize the best use of scientific, technological and innovative capacity of the Republic of Kazakhstan.

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Creation of the special economic zone "Information Technology Park" was a kind of innovation in the establishment of special economic zones in Kazakhstan. If the aim of previously set up special economic zones was the development of a region and the competent authority of a special economic zone was a local executive body (akimat), the main task of the special economic zone "Information Technology Park" is the development of the information and communication industry and the competent authority is a central executive body - the Ministry of Industry and Trade of the Republic of Kazakhstan.

Originally it was designed that the zone will operate until 2013; the initial area was 340 hectares. The zone is located in the Alatau village of the Medeu district of Almaty and Almaty region adjacent land. Construction of the zone was planned to be held in 2 stages. In 2006 was completed and put into operation the first construction set. According to the experts by mid-2008, state investment in this special economic zone totaled $ 40 million. The amount of private investment was estimated at 10 million dollars.

The special economic zone "Information Technology Park" is assumed to be a regional center of IT industry in the region of Central Asia and Siberia. Striving to reach this position, the main objectives of the functioning of the zone are follows:
- High-tech, information industries development;
- Acceleration of the integration of Kazakhstani economy in the global economic system;
- Creation of highly effective, high-tech and export-oriented information technologies manufactures,
- The development of new types of information technologies products
- Attracting investments. [9]

Creating and functioning of a park of information technologies is an innovative and effective phenomenon. The major activities based in the territory of special economic zone "Park of information technologies" conduct to creation of highly effective, high-tech technologies. Among them are:

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[9] www.itk.kz

- Formation of a modern infrastructure of the special economic zone, including the development of business plans, design and construction documents, construction and installation work, work on improvement of the special economic zone;
- Training and retraining of qualified professionals who have certifications in the field of information technology on international standards;
- Design, development, introduction, and production of software and databases on:
  - Translation and adaptation of software products from leading producers to the state language;
  - Mathematical modeling of processes in strategic industries;
  - Information and telecommunications systems and data networks, intranet / internet systems in key sectors;
  - Information Security Systems;
  - Automated process of control in production;
- Design, development, introduction, and production of information technology on the basis of:
  - New technologies in mobile systems based on GPS (global position system), GPNS (global position navigation system), and others;
  - Information security at the level of storage, processing and transmission of information;
  - Information and telecommunications systems and data networks;
- Creation of new information technologies based on artificial immune and neural systems;
- Marketing research in the field of information technology;
- Conducting research and development on the creation and implementation of projects in the field of information technology. [10]

The special economic zone "Information Technology Park" has attractive tax and customs regimes:
- Corporate income tax and property tax is paid at a rate of 0%, as well as the VAT (for operations within the SEZ PIT);
- There are preferences on import and export customs duties;

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[10] www.itk.kz

- There are no trade barriers, restrictions on the share of foreign ownership, etc.

Currently, 38 enterprises realize their projects in the designated directions. Among them are companies such as IT tool group, Caspian Geo Tools, Logicom, ERP Central Asia and others. The partners are world famous companies such as Microsoft, Siemens, Hewlett-Packard, Thales, Gilat, CiscoSystems. According to the Ministry of Industry and Trade of the Republic of Kazakhstan on July 2009 working on the territory of the special economic zone companies have made products to 5.6 billion tenge ($37812 thousands), and the state budget received 645 million tenge ($4355 thousands) in taxes.

Figure 2: Tendency of increase in the number of companies working in the special economic zone "Information Technology Park
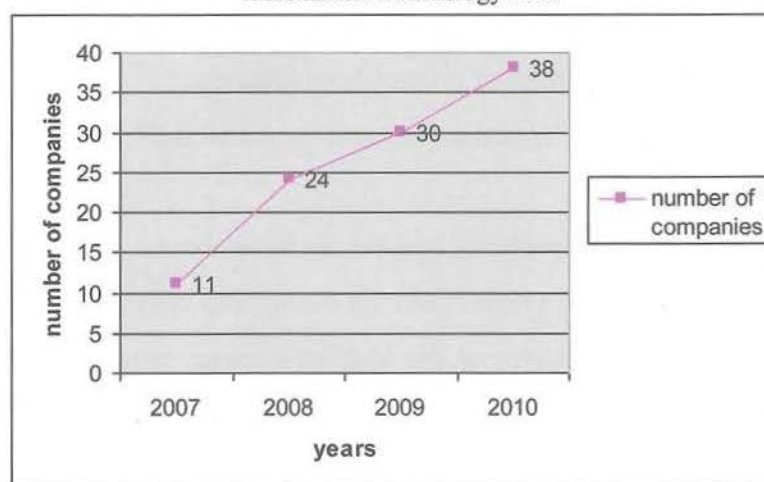
Source: own using www.medeu.almaty.kz and www.itk.kz

However, despite the increase in revenues and number of participating companies the problems occurred with the second phase of construction. Four key issues aroused. They are closely interrelated and require urgent solutions:

- Land issue
- The need for urgent development of external infrastructure
- Lack of power resources
- Shortage of funds and investments

Of the total area allotted for the special economic zone a large part was owned by a huge agro-formation. As a result of the overall 340 acres set aside for the zone, only were 163

hectares were used for the primary objectives. This greatly hindered the development of the zone. In this regard, in the Presidential Decree "On Amendments to Some Decrees of the President of the Republic of Kazakhstan» № 873 dated September 21, 2009 was stated that the area of the zone was reduced to 163.02 hectares of land. The same decree increased the duration of the SEZ for 15 years and extended up until 2028. Such considerable increase in the zone duration was made because that the all the objectives were not fulfilled during planned period and was not exploited the potential of the special economic zone.

The following two problems: lack of power and poor infrastructure are closely intertwined. Already invested funds were insufficient for the development and maintenance of such a large-scale project. The emergence of these problems or the slowing down factors has its prerequisites. Emerged problems primarily aroused due to insufficient analysis and incomplete study of the planned project. In the process of formation and restructuring of the special economic zone the economic values, prospects for future development were not studied fairly and many details were not taken into account. Some of the most important steps of planning, analyses and evaluation were not fully completed. In particular, has not been fully analyzed and assessed the economic prospects of the special economic zone, its profitability, payback, long-term perspective, the alleged threats, constraints and obstacles to the successful development and functioning of the zone. When creating the special economic zone "Information Technology Park" the history of the establishment of technology parks in the world should be thoroughly studied. Thus, according to the study conducted by Deloitte on the order of JSC "National Innovation Fund" in 2007, " only a quarter of technology parks reaches the category of successful".

Speaking specifically about the special economic zone "Information Technology Park" competitive advantages of neighboring states were underestimated, particularly competitive advantages of China. Many experts agree that the special economic zone "Information Technology Park" is not in a position to quickly achieve the goal of establishing and developing export-oriented manufactures of advanced information technologies, taking into account the undeniable global supremacy of China. Proof of this is the fact that two production unit more than 2 thousand kilometers each have not yet been

rent. [11] It shows a reduced interest in high tech production in the market under existing conditions. For the development of efficient, high-tech industries large investments a well-developed infrastructure and highly qualified personnel are required. Unfortunately, the current situation of Kazakhstani economy does not meet these requirements. However, this does not mean to abandon the development of new technologies and modern high-tech industries. This direction of development is, in my opinion, promising, relevant and accurate. This is the key to boosting the economy of the country as a whole and increasing of competitiveness. Kazakhstan has a favorable geographical position. It is a transcontinental state and can serve as a bridge between the developed western and eastern worlds. Kazakhstan friendly borders with 5 states. Most of them are a source of cheaper skilled labor force and technology, as well as convenient and profitable markets. These factors demonstrate the long-term perspective competitive advantage of Kazakhstan. It should be taken into account that high technologies are characterized by a high level of risk and necessity of big investments. Therefore, the development of these industries should be fully investigated, analyzed and applied to suit local conditions and opportunities.

Location of the special economic zone "Information Technology Park" also drawn criticism. Remoteness from the major regional center Almaty city affected the lack of development of external infrastructure. Currently, the main problem is the lack of power. Thus, at this point the zone has only 2 MW of electricity in its disposal, of which approximately 1 MB is already used by an existing facility complex, the remaining 1 MW will be fully utilized by launching production modules.

Emerged problems related to technical flaws in the analysis and design. The problem of external infrastructure is not limited by lack of power. For efficient operation of enterprises in the special economic zone gas line, plumbing, sewerage system and paving roads should be conducted. According to experts, to supply industries with necessary external infrastructure another 280 million dollars is need. Another disadvantage of location of the zone is that it is situated in two territorial and administrative units. 92.9 hectares belongs to the territory of Almaty, and the rest - to the territory of Almaty region (Talgar district). Thus both of the areas show little interest in addressing infrastructure issues of the special

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[11] www.itk.kz

economic zone. The situation is compounded by the fact that competent authority of the zone is the Ministry of Industry and Trade of the Republic of Kazakhstan and not the local executive bodies.

Weak external infrastructure affects the investment attractiveness of the special economic zone and is a retarding factor. Numerous visitors repeatedly confirmed their interest in realization of their projects in the special economic zone "Information Technology Park" due to own or attracted investment, but on one condition: solved issues of external infrastructure The source of funding could be National Welfare and National Innovative Funds.

After solving the urgent problems that have arisen in the course of the zone functioning, the next challenge will be the solution to issue of qualified personnel. The Government of Kazakhstan attaches great importance to the problems of education and the formation of highly qualified personnel. Therefore, in this regard the IT University will be located at the territory of the special economic zone. Thus decision was presented in the general project of the Special Economic Zone "Information Technology Park". The university has already started its work in September 2009. Currently IT University is situated in the Almaty city.

4.2. Special Economic Zone "Astana-new city"

Special Economic Zone "Astana-new city" has been created by the Decree of the President and had been functioning since January, 1st, 2002. It was initially planned, that the zone would operate till 2007, but then in 2005 it's term was prolonged by the Decree of President of Republic of Kazakhstan till 2010. For 2007 it's territory extended twice, and now the territory of the zone has exceeded 5440.4 hectare.

The special economic zone "Astana-new city" fundamentally differs from other zones. The main purpose of its creation is rapid development of the left bank of the river Ishim Astana, creating a modern infrastructure, the construction of unique objects of the administrative and socio-cultural facilities, comfortable accommodation, as well as providing an enabling environment for economic and social development of the capital of

the Republic of Kazakhstan. Building and construction on the territory of the special economic zone are main activities, where as in other special economic zones it is just a means to create conditions for the implementation of companies' activities.

For achievement of the goals posed the following tools are used:

- attracting foreign investment;
- use of new techniques and technologies, the best international practices, associations and multiple use of public, commercial and foreign capital;
- approval of new management techniques, based on a combination of different forms of ownership.

The special economic zone "Astana-new city" provides privilege regime for investors:

- State support for direct investment in the construction of facilities in the SEZ;
- availability of tax and customs privileges;
- simplified registration procedures and decision-making on investment objects;
- provision of land for construction of a new center for engineering of developed land;
- liberal labor laws.

The cost of construction of objects within the borders of the special economic zone "Astana - new city" for investor is lower on 14-20 %, than costs of similar objects constructed in a usual mode (without application of privileges).

On the territory of special economic zone work all the largest construction companies of Kazakhstan: "Kuat", "Basis A", "BI-group", "High Vill Kazakhstan" and many others. Among the foreign companies are "MabcoConstractions s.a.", "KrugerHoch-& TiefbauGmbH", "Ferrimex-Stahwarenhandel Gesellschaft m.b.h" and others.

By the middle of 2008 since formation of the special economic zone "Astana-new city" on its territory 231 sites were registered, of which: 74 facility engineering and transport infrastructure, 62 - Apartment Buildings, objects of social and community values - 59, 30 - office buildings and 6 manufacturing facilities. To that date, 118 facilities were put into

operation acts of labor and the state commissions, On July 1, 2007 were attracted 684, 803 billion tenge, including: budget - 277.595 billion tenge (the national budget - 230.777 billion tenge, the local budget - 46.817 billion tenge), own funds of enterprises - 194.031 billion tenge, means national companies 45.587 billion tenge, foreign investment - 152.048 billion tenge, grants foreign states - 15.543 billion tenge. Construction has about 85 general contractors and more than 600 subcontractors. Of these, domestic companies - 68, foreign – 17[12] and by the end of 2007 beginning from 2002 were attracted more than $6 billion and were utilized more than $4.3 billion (165 billion tenge were utilized in 2007, that compared to the year 2006 more than 18% (139.3 billion tenge). [13]

Figure 3: Attracted investment to the special economic zone "Astana-new city"
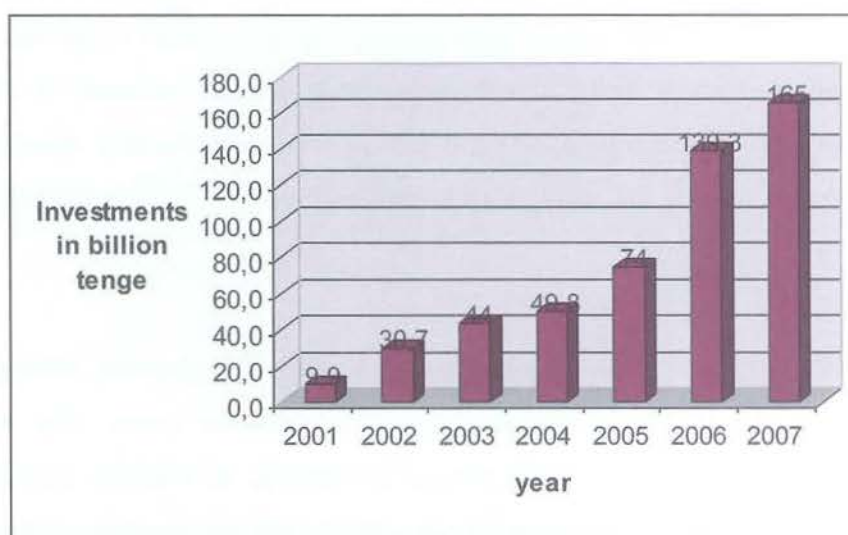
Source: own using Mukanov B. National News Agency "Kazinform". 08/10/2007 and
http://www.ferroli.kz/index.php?p=news_more&id=117&n=2

Construction carries out nearby 85 general contractors and more than 600 subcontractors. Of these, domestic companies - 68, foreign - 17 who are building organizations in Turkey, Germany, Russia, China, USA, Spain, Slovakia, Korea. [14]

The special economic zone "Astana-new city" is the most productive special economic zone in Kazakhstan. For the period of existence it achieved all the posed goals.

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[12] Mukanov B. National News Agency "Kazinform". 08/10/2007
[13] http://www.ferroli.kz/index.php?p=news_more&id=117&n=2
[14] http://www.ferroli.kz/index.php?p=news_more&id=117&n=2

5. Conclusion

The economic integration and globalization are one of the most important movements in the world today. If handled correctly, economic integration lays the foundation for a rise in standards of living, an improvement in quality of life, and expanded opportunity for people around the world, in particular for many who have lived at or near the poverty line. However, this process has some negative sides.

In the context of globalization one of the prior tasks of developing states is constructing of a model of an open economy and conducting the correct foreign policy. The governments should follow several fundamental principles to get benefits from the process of integration and protect domestic economy. As international experience shows, the basis for effective foreign economic activity in the movement towards an open economy is the development of high technology export capabilities and full support of the national exporters. One of the most important tasks of the state is to create an enabling environment for competitive production at the firm level.

At present, the important role in strengthening the national economy through possibilities of external activity is played by free or special economic zones. The primary aim of creation special economic zones is deeper connecting of national economies into the international geographical division of labor. Other aims are: creation of highly effective, hi-tech and export-oriented manufactures, development of new kinds of production, attraction of investments, perfection of legal regulations of market relations, introduction of modern methods of management and managing, and also solving of social problems, such as increasing of employment and creation of free work places. Mainly, creation and development of free or special economic zones is orientated on solving of priority economic tasks, realization of the strategic programs and projects.

As world practice shows, creation and functioning of special economic zones brings not only positive results. Creation of a special economic zone should be deeply analyzed and evaluated. Newly created special economic zones should posses several fundamental features. They include: favorable geographical position connected with main transport

ways, presence of infrastructure; it includes presence of power resources, gas lines, plumbing, sewerage system, paving roads, easy accessible service institutions, presence of cheap and simultaneously qualified human recourses, high level of provision of financial resources, developed and stable legal bases, formation of special administration bodies, favorable investment climate which consists of political stability, guarantee of investment security and other assets, transparent and stable legislative framework, low level of crime. One of the most important keys for creation of a new special economic zone is support by the government and providence with basic infrastructure.

In case of insufficient analysis and incomplete study of the planned project a special economic zone will not satisfy posed goals and will cause loss of huge amount of investments.

Creation of national system of special economic zones requires taking into account local specificities and studying of foreign experience. It's necessary to rely on experience of other countries and bring the best to our domestic economy.

Well developed, analyzed special economic zones are called to execute their specific roles: concentration of export-orientated, import-substitution and technical innovations production, stimulation external economic connections. Special economic zones are a powerful instrument for attraction foreign investments and they can be used for smoothing of economic distinctions between regions of the country.

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A Time Series Analysis of ISE Sector Indexes and Macro Variables in Turkey

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Abstract

This study investigates bidirectional long term and dynamics relationship among the Istanbul Stock Exchange (ISE) 100 index and main sector indexes of ISE (industry, finance and services) with some fundamental macro economic variables (interest, money supply (M1), gold prices and exchange rate). The study uses monthly data covering time period of 2001:06 to 2009:06. The rationale behind selecting that time period is to observe that relation after the major financial crisis endured in Turkey in 2001.Although there are prior studies conducted on relation of ISE100 index and macro economic variables, our study's contribution is twofold by both imposing a bidirectional perspective and extending the exploration of the causality relation in the sector indexes level. Moreover, data selection of subsequent crisis time will provide support for the policy makers and investors in their decision making process compatible with current environment following to crisis time. The study shows that industry sector index is not aligned with any of the macro variables in the long run. However services sector index is granger caused by the monetary expansion with application of Toda Yamamoto process as a disparity from the other indexes in concern. Other two indexes, finance and ISE100 show similarities in the analysis. Shocks to the variables reveal the magnitude of bidirectional influence among indexes, interest, exchange rates and gold prices. Revealed differences among indexes provide both future topics to explore for researchers and open rooms for new investment strategies for investors.

1. Introduction

Several prior studies observed the relations among macro economic variables such as interest, money supply, exchange rates and stock returns for different countries and various time intervals. That type of work rooted back in finance to the efficient market hypothesis discussion and the valuation of company (Fama (1981), Geske and Roll (1983)). The

macro economic theory supports the analysis of the relations among several macro indicators and stock prices. Faded barriers in the capital market flow emphasis even further the role of the stock exchanges fluctuations in the finance policy decisions of the countries. Innovations in the econometric methodology and the heightened role of the indexes lead researchers to look not from a unidirectional perspective but from a two sided mirror (Mahdavi and Sohrabian (1992), Fitzpatrick (1994), Mukherjie and Naka (1995), Lee (1992). Thus, currently we observe that the stock indexes might be a leading factor for other macro indicators in to economy to respond.

The research in that area reveals that focus should not be only on to the composite indexes, yet the sector indexes might react different to the changes in conditions in the financial environment or only some might move along or lead with the macro indicators. Thus recently Ewing, Forbes and Payne (2003) were concerned with the influence of five major S&P sector indexes. Another motive for the flourish of that type of vein in the literature was the increasing role of sector specific investment options especially under the fund format. Emerging markets were focus of some studies such as the Pyeman and Ahmad (2009) considering Bursa Malaysia's construction, plantation, consumer product, finance, industrial product, mining, hotel, property and trading services indexes and the Maysami, Howe, Hamzah (2004) examining the Singapore All-S Sector indexes, finance index, property index and hotel index, along with the main Singapore stock index. That new vision would allow us to look beyond the general association by taking into consideration the fundamental dissimilarities in the sensitivity of firms to macro indicators due to their the operational, structural and financial choices might be attributable to their sector.

Limited number of studies available in the developing sector indexes of ISE in Turkey and necessity for the test of bi-directional relationship of ISE sector specific indexes with macro variables using the recent econometric models are the main motivations of this study. The topic becomes even more important to explore considering the accelerated rate of foreign portfolio investment in the ISE after the unwillingness and lack of sources of domestic investors in the market. Thus the separation of the reasoning behind the fluctuations of sector indexes might grant additional points for the decision making process of policy makers. Apart from that the sector inclined funds were introduced to the market

recently in Turkey as a response to investor choices. Thus, we believe that further analysis of sector decomposition in responses to the changes in the macro policies would be beneficial for the portfolio composition decisions of investors.

In light of these objectives, we chose to employ Toda Yamamoto process which allows us to search for bi-directional association. Main sector indexes of ISE, Industry, Finance and Services along with the ISE 100's association with interest, exchange rates, gold prices and monetary expansion will be investigated in the study. Time period configured as to cover 2001:06 to 2009:06 to cover the periods after the major financial crisis of Turkey in 2001.

Considering the mixed results obtained for some of the variables for unit root tests and various additional benefits offered such as immunity from the bias of pretesting for cointegration, we prefer to employ Toda Yamamoto to look for Granger causality among macro variables and indexes. However, that process only provides evidence for the long run relationships; neither identifies the influence of innovations, nor informs about the direction of them. As a response to that necessity, we chose to employ generalized various decomposition and impulse response analysis. That selection is triggered by the fact that alternative orderings of the variables may have effect on both of the results of various decomposition and impulse repossesses, if instead we had been employ orthogonalized model.

The results of the Toda Yamamoto process indicates that industry sector index is not aligned with any of the selected macro variables in the long run. However services sector index is granger caused by the monetary expansion which displays the disparity among indexes in concern. Another main finding is the similarities observed among finance and ISE 100 indexes. Shocks to the variables enable us to reveal the magnitude of bidirectional influence among indexes and selected macro variables which highlights the exchange rate as a leading indicator. Differentiation observed among indexes to these innovations confirms the necessity of further analysis in the sector indexes levels.

Study proceeds as follows. First section allocated to literature review. Then, the data were introduced. The assessment of the time series properties of the data provided next. After the analysis of the results, study concludes.

2. Literature Review

The curiosity to investigate the relationship among macro variables and stock indexes has been attracted several prior studies to discover the leading variables on the movements of stock exchanges and whether the movements in the stock exchange have any influence on the policy decisions in the economy.

One of the primary reasons behind that appeal can be found in eagerness to test efficient market hypothesis theory. The efficient market hypothesis theory, if accepted, forces us to acknowledge that nobody can beat the market using the prior information. However, there are others supporting a contradictory view that there is a trend in the stock returns which can be discovered with the analysis of a variety of factors. Thus, effect of variation of the macro variables on cash flows or discount rates used for valuation of companies (Fama (1981), Geske and Roll (1983) provides venues for research).

Varying point of view employed in that area of studies as well. Some seek only the leading factors or causal relationship on the stock exchanges, whereas a number of them explore a bidirectional association (Mahdavi and Sohrabian (1992), Fitzpatrick (1994), Mukherjie and Naka(1995), Lee(1992)). Second stated type of work is recent compared to former.

Most prominent macro economic variables searched for association in that type of research were interest rates, inflation, money supply, exchange rates and industrial productions. Logic of the selection of these variables depends on the expected movements among these variables and stock prices which theories of economics and finance suggests.

As theory proposes, decrease in interest will lower the borrowing costs of companies and enables inexpensive sources for investment in stock markets. Contrarily, higher interest rates would cause stock investments to be more costly due to alternative investment

opportunities provided in the debt market or other interest nominated instruments. Negative relationship has been verified by various studies such as Murphy and Sahu (2001), Wagner at all (2005), Omran (2003), Fitzpatick (1994), Chen at all (1986). Graham (1996) presents bidirectional relationship in reaching each other in long run in his study regarding the Standard&Poors 500 and short term corporate bond rates in the United States.

Exchange rates trigger investment in some currencies which is preferred for its high liquidity and protection quality as a safe haven from depreciation of domestic currency. A depreciation of domestic money lead exports to rise, eventual consequence will be the raise in the future cash flows of exporting companies as evidenced provided by Aggrawal (1981). That impact is constraint by the level of countries' dependence on export-import activities. Since foreign investors would base their strategy on the total gain expected from their investments, the level of exchange rate would affect the demand in stocks due to their position. We can assume a casual relation directed from capital markets towards the foreign exchange as well. The rise in the share prices would attract foreign investors, which as a result will boost the demand for domestic currency, leading a rise in the value of domestic currency (Franke, 1993). Besides, that movement influences the money demand and the interest accordingly. The falling share prices will have an impact in the opposite direction. That relation has been investigated for a variety of developed and developing countries. Bahmani-Oskooee and Sohrabian (1992), Hatemi-J and Irandust (2002), Ma and Kao (1990), Abdalla and Murinde (1997), Gündüz and Hatemi-J (2002), Hatemi-J and Roca (2005), Ibrahim (2000), Symth and Nandha (2003) were some representatives of those studies. Bahmani-Oskooee and Sohrabian (1992) has observed a short term but a bi-directional association applying the Granger Causality. In their research for some selected Asian emerging countries, Abdalla and Murinde (1997) observed for India, Korea and Pakistan a relation from exchange rates through the stock prices, where a shifted position for Philippines. Gündüz and Hatemi-J (2002) and Hatemi-J and Roca (2005), arrange their studies covering the periods before and after the Asia crisis and seek for the direction of the relation among these two variables. The conclusion of the study differs according to subject countries, for some the results distinguish due to before and

following to crisis period. Direction of the association also varies in periods and according to country base.

Monetary growth has been employed among other macro economic factors in that type of studies. When monetary supply enlarges, with the available liquidity, security prices might rise. Apart from that in the long run money supply may cause inflation, increase discount rates and thus reduce stock prices (Fama, 1981). On the other hand this negative effect might be eliminated by the economical consequences of money growth, via increasing company earnings. This would enlarge future cash flows and have positive influence on the stock prices. Friedman (1988) confers that significant relation using the M2 proxy.

Moreover, in times of economic uncertainty, gold prices provides a safe harbor for the money. As an alternative investment opportunity, a jump in its price would reassign some money invested in stock markets to gold. That assumption might hold especially in the underdeveloped market structure which gold has a role as a traditional instrument to forward their savings.

Recently it is realized that, particularly stemming from rising separate investment tools, sector specific instruments, results of the analysis in sector specific indexes might differ due to distinctive nature of stocks reflected in those indexes. Ewing, Forbes and Payne (2003) was concerned the research question of how the imposed shocks using generalized impulse response analysis to the macro economics variables influence five major S&P sector indexes. With that new line of research, they were able to identify numerous reactions to unanticipated changes in macro variables. There are some other examples following to that type of reasoning in the developing capital markets. Pyeman and Ahmad (2009) is one of them. Their results suggested that changes in macroeconomic variables lead similar patterns in some sector specific indexes with differing effects in terms of speed of the adjustment towards equilibrium in the long run. They use VECM of Johansen for long run movement and Granger causality for the dynamic reaction between the sector indexes and macro economic variables.

In Maysami, Howe, Hamzah (2004), examines the Singapore All-S Sector indexes, finance index, property index and hotel index, along with the main Singapore stock index under the Johansen VECM methodology through 1989:01 to 2001:12.They have concluded that although the general index and the property index formed significant relations with all macro economic variables, yet Finance and Hotel Index have connections only with some of the macro economic variables.

Most of the studies regarding Turkish stock exchange investigates its relation with only one macro variable, mostly predominantly with the exchange rates. Such as Bahmani-Oskooee and Domac (1997) explores and found relation among the stock prices and exchange rates. Kıran (2009) employs Toda Yamamoto process and acknowledges that for 1990:01-2008:07 terms, there is a bi-directional relation with the exchange rates and stock prices for monthly observations. Study of Ozmen (2007) for the periods of 1989-2006 has been reached a similar conclusion except for the sub periods of 1989-1994 and 1994-1999.

Temporal relation has been investigated by the Mugan and Yuce (1998) for Turkey. Along with other macro economic variables, they encompass the gold prices as a variable in their study. The found no co integration relation between for ISE 100 and gold coin prices for the period of January 1 through December 31 1994.

Muradoğlu, Kıvılcım and Argaç (2001) argues that considering the significant role of governments in financial markets in developing countries and lack of specific information in the developing stage, they have selected monetary variables to test their relation with stock index using co integration techniques. They use overnight interest rates, several definitions of money supply and foreign exchange rates of US Dollar, German Mark, British Sterling and Japanese Yen. The period of the study was designed as 1988-1989 sub periods as initial phase of the market, 1990-1992, and 1993-1995 taking into account of the trade volume and information development of the market. They reached a conclusion that as the market became more mature, the influence of monetary expansion and interest rates vanishes by leaving the foreign currency gain the expected significance employing the co integration analysis.

Another study employed more than one macro economic variables is Erbaykal and Okuyan (2007). Taking the inflation, interest rate, exchange rate and economic growth as macro economic variables, they conduct the Toda Yamamoto methods for causality relationship for using the quarterly observations of these variables for 1987:01-2006:03. They have reached a causality relation in the direction of the stock prices to economic growth and interest rate and inflation towards stock prices.

Attraction of the research topic in Turkey especially limited to main Istanbul Stock Exchange index, ISE100. Currently, we are able to point out only two studies both employ the GARCH framework, Erdem, Arslan, Erdem (2005) and more recent one Vardar, Aksoy and Can (2008) analyzing the sector indexes of ISE. In their work, Erdem, Arslan, Erdem (2005) on monthly data for the period 1991:01-2004:01, reached a conclusion that there is unidirectional volatility spill over from inflation, interest rate to all stock price indexes. Besides spillovers from M 1 to finance index, from exchange rate to both ISE 100 and industry index were obtained. They reach a conclusion of no volatility spillover from industrial production to any index. Vardar, Aksoy and Can (2008) for 2001-2008 period pertaining all sector indexes daily price and volume data, found that even tough index returns have negative response to interest rates, only the service index changes in the opposite direction for an increase in the exchange rates. They additionally observed that market volatility is more sensitive to exchange rate movements.

Our motivation for the study is that despite the several researches on the main ISE Index, there is a room for a study to search for the differences of the bidirectional relations of sector specific indexes with macro indicators employing recent time series methods. We believe timing of the research is appropriate due to higher foreign investment in the ISE under various strategies including sector specific perspective after the 2001 crisis and exposing the right angles for a position on the various sector concentrated investment funds newly introduced in Turkey. A study allowing sector specific assessment, we believe will open new opportunities for future research, improve the sector specific policy development opportunities for the authorities and will reveal investment opportunities for sector specific portfolio management.

Moreover, for the special time period selected for our study to focus on the times after a major crisis, we would be able to observe the influence of the structural change experienced in the economy and capital markets following to crisis, especially, the role of the higher foreign alignment in the ISE.

3. Model and Methodology and Results

Our study investigates the long term bi-directional relationship among the ISE 100 index and its main sector indexes (industry, finance and services) with the fundamental macro economic variables (interest (INTM), money supply (M1), gold prices (GOLD), exchange rate (FX)). Time period is defined as 2001:06 to 2009:06 to cover the period after financial crisis in Turkey. Istanbul Stock Exchange 100 index illustrated by ISE 100 abbreviation, with the same manner the ISE IND, ISE SERV and ISE FIN represents sector specific indexes of ISE, as industry, services and finance in order. Interest (INTM) is the monthly time deposit rates. Exchange Rates (FX) is the buying prices of US Dollar. US Dollar selected due to its qualification as main reserve money and highly frequent usage in Turkey in determination of prices of the products and services. Money supply (M1) is presented by M1 to show the money expansion in Turkey. Originally M1 data were presented in weekly intervals, to make it compatible with other series the conversion tool of the Central Bank statistical data base is utilized. Gold Prices (GOLD) is stated by the Cumhuriyet monthly gold selling prices, as number/ TL basis. All the data expect INTM is collected in monthly basis from the Central Bank Turkey website (www.tcmb.gov.tr). The interest data is gathered from the Turkish Statics Institute web site (http://www.turkstat.gov.tr). All data of the study is publicly available and selected following the most of the preceding studies on the topic in Turkey. INTM variable were used as percentages, other variables after taking their natural logarithms following to Ewing, Forbes and Payne (2003).

We initiated our study with the test of the unit roots of our series using EViews 6. Order of integration shows us how many times we should take difference of our series to make them stationary. Results of the tests employed were provided in Table 1 and 2.

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Table 1-Unit Root Results –Level

Variables	Type	ADF		DF-GLS		PP	KPSS	ERS-PO		NP	
		Statistics	Lag	Statistics	Lag	Statistics	Statistics	Statistics	Lag	Statistics	Lag
LISE 100		-1.472832	1	-1.882303	3	-1.150026	1.102776(*)	35.504152	3	-0.515888	3
LISE IND		-1.963769	3	-0.397693	3	-1.497877	1.096483(*)	39.395679	3	-0.519893	3
LISE SERV	Intercept	-0.857339	0	0.0857846	3	-0.891791	1.257120(*)	76.701787	0	0.5391948	3
LISE FIN		-1.695503	3	-1.582047	3	-1.068858	1.065696(*)	25.806350	3	25.806350	3
LM1		-2.639462(***)	12	-0.344624	12	-1.996608	1.272423(*)	1463.211526	12	-7.145149(***)	12
LFX		-2.802888(**)	3	-1.928616(***)	3	-2.906299(**)	0.260241	3.091109(**)	3	-8.851442(**)	3
INT		-3.346446 (**)	1	0.2203634	1	-3.406265(**)	0.950568(*)	259.11785	2	0.3890026	1
INTM		-2.688924(***)	1	0.449067	1	-2.909271 (**)	1.074779 (*)	222.704827	1	0.5849566	1
LGOLD		-1.908692	1	0.9812230	1	-0.823411	-3.09234(*)	75.114744	1	1.3533506	1

Variables	Type	ADF		DF-GLS		PP	KPSS	ERS-PO		NP	
		Statistics	Lag	Statistics	Lag	Statistics	Statistics	Statistics	Lag	Statistics	Lag
LISE 100		-1.593324	1	-1.882303	3	-1.442614	1.102776 (*)	13.991628	3	-7.127056	3
LISE IND		-1.823676	3	-1.986633	3	-1.323229	0.231507(*)	11.131378	3	-9.702332	3
LISE SERV	Intercept and Trend	-1.854631	3	-2.285291	3	-1.931574	0.158829(**)	11.498465	3	-8.591374	3
LISE FIN		-1.582047	3	-1.877082	3	-1.547320	0.220124(*)	13.975114	3	-6.876274	3
M1		-1.596502	12	-1.460423	12	-0.985470	0.313564(*)	49.569231	12	-48.751887(*)	12
LFX		-3.003052	3	-2.508856	3	-3.088538	0.080279	5.3443708(**)	3	-13.702278	3
INT		-3.266693	1	-0.973959	1	-3.406265	0.309163(*)	100.80745	2	-1.908692	1
INTM		-1.76471	1	-0.964531	1	-1.385666	0.314643(*)	57.632486	1	57.632486	1
LGOLD		-3.483736(**)	1	-3.083632(**)	1	-3.092346	0.130658 (***)	5.126021(**)	1	-18.823318(**)	1

Table 2-Unit Root Results –First Difference

Variables	Type	ADF		DF-GLS		PP	KPSS	ERS-PO		NP	
		Statistics	Lag	Statistics	Lag	Statistics	Statistics	Statistics	Lag	Statistics	Lag
LISE 100		-7.731605(*)	0	-2.005708(**)	2	-7.760650(*)	0.140512	1.996820(**)	2	3.171498(*)	2
LISE IND		1.353350(*)	0	-7.529673(*)	2	-7.494809(*)	0.175108	0.985285(*)	0	-23.387515	2
LISE SERV	Intercept	-8.034635(*)	0	-0.520739	7	-7.944938(*)	0.080128	2.784799(***)	0	-1.195051	7
LISE FIN		-5.009075(*)	2	-1.869807 (***)	2	-7.455069(*)	0.130225	2.194207(**)	2	-13.474114(**)	2
LM1		-1.386285	11	-0.283299	11	-12.157831(*)	0.415599(***)	54.780834	11	-0.163630	11
LFX		-7.168771(*)	1	-1.051165	6	-6.345294(*)	0.102786	1.277892(*)	1	-1.943426	6
INT		-5.621234(*)	0	-5.151556(*)	0	-5.5584756(*)	0.674740(**)	0.822537(*)	0	-31.920620(*)	0
INTM		-5.353603(*)	0	-5.042356(*)	0	-5.264125(*)	0.621959(**)	0.813654(*)	0	-32.147928(*)	0
LGOLD		-7.377860(*)	0	-3.216738(*)	2	-7.128075(*)	0.051749	1.142270(*)	0	-17.961840(*)	2

Variables	Type	ADF		DF-GLS		PP	KPSS	ERS-PO		NP	
		Statistics	Lag	Statistics	Lag	Statistics	Statistics	Statistics	Lag	Statistics	Lag
LISE 100		-7.750872(*)	0	-2.005708 (**)	2	-7.683533(*)	0.097572	3.171498(*)	0	-24.992976(*)	2
LISE IND		-7.529674(*)	0	-3.820212(*)	2	-7.529674 (*)	0.069187	2.490751(*)	0	-29.242655(*)	2
LISE SERV	Intercept and Trend	-8.028773(*)	0	-3.135102(**)	1	-7.939428(*)	0.070326	4.085566(*)	0	-23.319514(**)	2
LISE FIN		-5.112656(*)	2	-3.152382(**)	2	-7.422943(*)	0.108921	3.691044(*)	2	-23.644301(**)	2
LM1		-2.609395	11	-2.599929(***)	11	-12.533502(*)	0.052411	14.888500	11	-3.249993	11
LFX		-7.133766(*)	1	-1.051165(**)	2	-6.2889341(*)	0.101349	2.093539(*)	1	-1.943426(*)	2

INT	-6.170194(*)	0	-5.541742 (*)	0	-6.030647(*)	0.124719(***)	2.927119(*)	0	-33.339024(*)	0
INTM	-5.809005(*)	0	-5.357546(*)	0	-5.490464(*)	0.105443	2.940929(*)	0	-34.239319(*)	0
LGOLD	-7.337008(*)	0	-6.577294(*)	0	-7.075560(*)	0.052734	2.566901(*)	0	-41.675577(*)	0

ISE 100 abbreviation illustrates Istanbul Stock Exchange 100 index, the ISE IND, ISE SERV and ISE FIN represents sector specific indexes of ISE, as INDUSTRY, SERVICES and FINANCE in order.M1 is selected to indicate monetary expansion. FX is the exchange rate of US Dollar. INTM is the monthly deposit interest rates. GOLD is the codification of Cumhuriyet Gold (a designated measurement) selling price (TR/Number). INTM is used as percentages, other variables after taking their natural logarithms, thus L indicates natural logarithm. *, **, *** codifies the 1 %, 5 % and 10 % significance levels correspondingly. Akaike Information Criterion was employed to find relevant lags.

Augmented Dickey Fuller (ADF), Dickey Fuller Generalized Least Square (ERS)(DF-GLS), Phillips-Perron (PP), Elliot-Rothenberg Stock Point Optimal (ERS-PO) and Ng-Perron Modified (NG-Z) tests set the null hypothesis as the series has a unit root. On the other hand, Kwiatkowski-Phillips-Schmidt-Shin (KPSS), constructs the null as the series are stationary. Lag lengths of the series presented in tables 1 and 2 is determined using the Akaike Information Criterion.

With the assessment of our test results, we reach the conclusion that we can easily reject the null hypothesis of unit root for all stock index variables for first differences (ISE100, ISEIND, ISE- SERV, ISEFIN). The levels of these indicators are clearly observed not stationary according to test results. M1 variable has presented a similar structure with indexes. Thus, those cited five variables are I(1).

However for, FX, INTM and GOLD, the test results is not as robust as the indexes and M1. For the FX variables both the level-intercept and first difference intercept and trend configured results were indicative of stationary. INTM reflects mixed results for levels, first difference-trend and intercept options are more apparent in rejecting the null hypothesis of unit root. GOLD is observed stationary in both level-intercept and trend tests and first differences for all options, however the statistical significance are higher for first differences.

In the study we prefer to use Toda Yamamoto (TY) (1995) taking in to account of several additional properties it offers compared to other time series methodology. To begin with, this method does not require prior check for co integration. Thus TY eliminates all the biases might be experienced in the pretest phase. Besides, Zapata and Rambaldi (1997) prove that the TY cannot only be processed without any pretesting but also can be utilized for any level of integration in the series. Therefore, we concluded that considering the obtained mixed unit root results and our objective of testing for bi-directional association, TY is the most appropriate technique for our study.

TY process uses a vector auto regression (VAR) in levels. First, we construct our base model to investigate the relationship with ISE100 and other selected macro economic variables (M1, FX, INTM and GOLD). (Model 1). Then replacing the position of ISE100 with one of the indicated macro variables, we have constructed other models to test the long term relationship. Taking into account of space constraints we here only provide the base model. In the models, L denotes natural logarithm.

$$LISE100_t = a_0 + \sum_{i=1}^{k} b_{1i} LISE100_{t-i} + \sum_{j=k+1}^{dmax} b_{2j} LISE100_{t-j} + \sum_{i=1}^{k} c_{1i} LM1_{t-i} + \sum_{j=k+1}^{dmax} c_{2j} LM1_{t-j} + \sum_{i=1}^{k} d_{1i} LFX_{t-i} + \sum_{j=k+1}^{dmax} d_{2j} LFX_{t-j} + \sum_{i=1}^{k} e_{1i} INTM_{t-i}$$

$$+ \sum_{j=k+1}^{dmax} e_{2j} INTM_{t-j} +$$

$$\sum_{i=1}^{k} f_{1i} LGOLD_{t-i} + \sum_{j=k+1}^{dmax} f_{2j} LGOLD_{t-j} + u_t \qquad (1)$$

Our research question is structured to concentrate not only to relation of ISE100 and selected macro variables, but also investigate the same relationship for main sector indexes of ISE, which are IND, FIN and SERV. Thus, above explained model composition approach has been repeated for these indexes as well.

$$LISEIND_t = a_0 + \sum_{i=1}^{k} b_{1i} LISEIND_{t-i} + \sum_{j=k+1}^{dmax} b_{2j} LISEIND_{t-j} + \sum_{i=1}^{k} c_{1i} LM1_{t-i} + \sum_{j=k+1}^{dmax} c_{2j} LM1_{t-j} +$$

$$\sum_{i=1}^{k} d_{1i} LFX_{t-i} + \sum_{j=k+1}^{dmax} d_{2j} LFX_{t-j} + \sum_{i=1}^{k} e_{1i} INTM_{t-i} + \sum_{j=k+1}^{dmax} e_{2j} INTM_{t-j} + \sum_{i=1}^{k} f_{1i} LGOLD_{t-i}$$

$$+ \sum_{j=k+1}^{dmax} f_{2j} LGOLD_{t-j} + u_t \qquad (2)$$

$$LISEFIN_t = a_0 + \sum_{i=1}^{k} b_{1i} LISEFIN_{t-i} + \sum_{j=k+1}^{dmax} b_{2j} LISE100_{t-j} + \sum_{i=1}^{k} c_{1i} LM1_{t-i} + \sum_{j=k+1}^{dmax} c_{2j} LM1_{t-j}$$

$$+ \sum_{i=1}^{k} d_{1i} LFX_{t-i} + \sum_{j=k+1}^{dmax} d_{2j} LFX_{t-j} + \sum_{i=1}^{k} e_{1i} INTM_{t-i} + \sum_{j=k+1}^{dmax} e_{2j} INTM_{t-j} + \sum_{i=1}^{k} f_{1i} LGOLD_{t-i}$$

$$+ \sum_{j=k+1}^{dmax} f_{2j} LGOLD_{t-j} + u_t \qquad (3)$$

$$LISESERV_t = a_0 + \sum_{i=1}^{k} b_{1i} LISESERV_{t-i} + \sum_{j=k+1}^{dmax} b_{2j} LISE100_{t-j} + \sum_{i=1}^{k} c_{1i} LM1_{t-i}$$

$$+ \sum_{j=k+1}^{dmax} c_{2j} LM1_{t-j} + \sum_{i=1}^{k} d_{1i} LFX_{t-i} + \sum_{j=k+1}^{dmax} d_{2j} LFX_{t-j} + \sum_{i=1}^{k} e_{1i} INTM_{t-i} + \sum_{j=k+1}^{dmax} e_{2j} INTM_{t-j}$$

$$+ \sum_{i=1}^{k} f_{1i} LGOLD_{t-i} + \sum_{j=k+1}^{dmax} f_{2j} LGOLD_{t-j} + u_t \qquad (4)$$

The execution of TY necessitates the finding of maximum order of integration, dmax. From the above presented unit root test result, dmax is designated as one. It followed by the optimal lag length selection. Optimum lag lengths are presented by k in the model.

Care should be given in that step, especially for the low length results obtained in VAR. Remedy to that problem is to try various selection criteria (Soytas and Sarı (2006)). Therefore, we principally decide the lag lengths considering the Akaike and Hannan-Quinn Information Criterion and Final prediction error as 2. According the TY, if the VAR (k+dmax) passes some diagnostic tests, then to test joint significance Wald test employed on first k parameters. If the result of that test found to be significant, it permits us to reject the null hypothesis of non-causality. Obtained Granger causality results are summarized in the tables 3 to 6.

Note that, outcome summarized in the table 3 only allow us to conclude that Gold prices granger cause the ISE 100 at 10 % significance levels. However, this relationship is only unidirectional. The ISE100 only granger causes at a higher significance level (1 %), the interest. This finding do not just resembles the results obtained in Erbaykal and Okuyan (2007) which can be associated to differences in the periods of data (quarterly data), time interval of the samples and modeling (model composed including indexes and one macro variable at a time).

Results of the Industry index in table 4 are similar to ISE100 in the aspects of showing statistically significant information about the prospective changes of interest rates. Conversely, only variable have influence on the ISE100, gold, loses its effect for ISEIND. Thus, selected macro variables have shown any indicative power in the movements of industry index in the long run. Finance index results reported in table 5 follows the ISE100 for its causal relationship with macro variables. That obtained picture might be due to the result of the weight of the finance companies in ISE100 not to its segregated nature. Even the role of ISEFIN on to the movements of interest resembles the identical significance levels of ISE100. Like other two indexes services index show causal effect on the interest. Diverging from all other indexes, services index is found to be leaded by the changes in monetary expansion at 5 % significance levels.

More interesting result we obtained is that all of the indexes lead the movements of interest in the market in the long run. Finance index and ISE100 acts in concert with on the leading role of gold prices on their movements. That pronouncement emphasizes the role of gold

as an alternative investment vehicle. None of the selected macro variables have found to be supporting investors on their decisions on investing industrial companies represented with the industry index. Thus, future research might concentrate on to reveal indicative factors on investments on these types of companies. Distinct feature of service index is its influence by the money expansion. We can confer that it is due to the role of the retail and marketing companies in that specific index. Money extension in the economy might be the source of increase in the consumption, which rooted to retail sector.

Our results do not coincide with the Kıran (2009) which founds employs bi-directional relation with the exchange rates and stock prices for monthly observations and the similar study of Ozmen (2007). That difference might be due to period differences of our study which might lead to differentiation in the lag periods used in the process.

Toda Yamamoto process indicates granger causality for a within sample period. It implies only the long term relation among variables. However, it does not supply any information considering the dynamic properties of the system. Alternatively, variance decomposition (VDC) is an out-of-sample causality analysis. This method permits us to separate the variance of the forecast error of a variable into proportions referred to shocks in each variable in the system including its own. Whereas impulse-response examination reflects the form of this dynamic response of one variable due to a shock imposed on another variable with the aid of graph representation. Use of that methodology allows us to assess dynamic innovations in the system to shocks which is common in the stock market environment. Besides, analysis of innovation may provide us the opportunity of disentangling the responses of each sector index in concern.

Orthogonalized version of those referred analysis Sims (1980) utilizes Choleski decomposition. Hence, that imposes the importance of ordering of the variables entering in to the model as a restriction. To save a safe position regarding that constraint, we chose to conduct generalized model Pesaran *et al.* (1993)

Before exploring the variance decomposition, variables should satisfy that they are stationary before entering into the model. Considering the more powerful results obtained

for the first differences of the variables in the unit root tests and the weak co integration obtained from the ARDL approach[1], we incorporate the first differences of variables to the composed system.

The results of the Generalized Forecast Error Variance Decomposition are provided in the tables 7-10 in the index basis. The analysis of the table expose that all of the macro variables' and indexes' differences are in the first place stem from their own innovations. Apart from that, another main finding is the slightest relation observed among M1 variable and all index types. That finding is relevant for reverse relations as well with even a lower level of influence of the variation of M1 on indexes. That finding implies that monetary policy of M1 has a weak impact on the stock exchanges compared to other macro variables in question and the fluctuations of the indexes do not strongly suggest a policy decision regarding money expansion. The highest effect is from INDSERV through to M1 which nearly explains the 4% of the changes of M1 in the long run. That indicates the relative sensitivity of monetary policy to the services sector developments which is directly influenced by the spending level of the consumer.

On the other hand, strongest bivariate relationship is detected between FX and the stock indexes. However the range of the impact differentiates regarding to type of the index in consideration. The highest impact is experienced for the ISEFIN where FX and ISEFIN explaining approximately 35 % of each other's variation. Still the impact is highest but the magnitude of that decreases to nearly 16 % in the direction from ISESERV to FX.

Relatively the reverse relation from FX to ISESERV is stronger as 19 %. That implies that the FX fluctuations have expected to show more power on the financial companies compared to services sector. That indicates the direct effect of depreciation on domestic currency on the liquidity and capital adequacy concerns of the financial companies. The more FX dominated activities of the financial companies might be conferred as another rationale for that differentiation in the level of influence.

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[1] Results of bound tests and ARDL are available upon request from the author.

Table 3-Granger Causality Test Results for Model 1

	LISE100	LM1	LFX	LGOLD	INTM
LISE100	53.408668 (0.0000)*	2.174172 (0.1205)	0.117609 (0.8892)	3.097875 (0.0507)***	0.488453 (0.6154)
LM1	1.762500 (0.1784)	25.960777 (0.0000)*	0.705378 (0.4970)	0.301621 0.7405	4.315016 (0.0134)**
LFX	0.348573 (0.7068)	1.543616 (0.2201)	0.706788 (0.0000)*	8.344202 (0.0005)*	1.946148 (0.1497)
LGOLD	0.010474 (0.9896)	1.326801 (0.2712)	0.460514 (0.6327)	48.269089 (0.0000)*	2.427374 (0.0949)***
INTM	9.346621 (0.0002)*	1.515263 (0.2261)	4.338318 (0.0163)**	2.404814 (0.0969)***	160.394874 (0.0000)*

Table 4-Granger Causality Test Results for Model 2

	LISEIND	LM1	LFX	LGOLD	INTM
LISEIND	68.240240 (0.0000)*	2.873371 (0.0625)	0.143126 (0.8669)	1.285859 (0.2822)	0.045282 (0.9558)
LM1	1.902903 (0.1560)	27.652118 (0.0000)*	0.370480 (0.6916)	0.199732 (0.8194)	4.510038 (0.0140)**
LFX	1.051810 (0.3542)	1.592108 (0.2100)	33.186396 (0.0000)*	8.515139 (0.0005)*	2.324079 (0.1046)
LGOLD	0.217110 (0.8053)	1.307181 (0.2764)	0.079241 (0.9239)	49.325796 (0.0000)*	2.076566 (0.1322)
INTM	9.462884 (0.0002)*	0.840753 (0.4353)	4.545624 (0.0136)**	2.120376 (0.1269)	155.14202 (0.0000)*

Table 5-Granger Causality Test Results for Model 3

	LISEFIN	LM1	LFX	LGOLD	INTM
LISEFIN	47.308145 (0.0000)*	1.888726 (0.1581)	0.070580 (0.9319)	3.626588 (0.0312)**	0.835337 (0.4376)
LM1	2.108183 (0.1283)	24.983208 (0.0000)*	0.891642 (0.4141)	0.330825 (0.7193)	4.473978 (0.0145)**
LFX	0.325711 (0.7230)	1.664988 (0.1958)	48.748288 (0.0000)*	7.949860 (0.0007)*	1.671539 (0.1946)
LGOLD	0.574421 (0.5654)	1.370819 (0.2599)	0.816217 (0.4458)	41.909454 (0.0000)*	2.329077 (0.1041)
INTM	7.980647 (0.0007)*	1.767671 (0.1775)	3.751945 (0.0278)**	2.547349 (0.0848)***	157.041454 (0.0000)*

Table 6-Granger Causality Test Results for Model 4

	LISESERV	LM1	LFX	LGOLD	INTM
LISESERV	74.146831 (0.0000)*	2.827713 (0.0652)** *	0.472784 (0.6250)	2.187341 (0.1191)	1.600391 (0.2084)
LM1	1.115320 (0.3330)	26.638157 (0.0000)*	0.097524 (0.9072)	0.255331 (0.7753)	5.001048 (0.0090)*
LFX	2.105420 (0.1287)	1.570154 (0.2145)	36.412650 (0.0000)*	8.755989 (0.0004)*	2.788360 (0.0677)***
LGOLD	0.482795 (0.6189)	1.296474 (0.2793)	0.553788 (0.5770)	39.310869 (0.0000)*	1.737302 (0.1827)
INTM	3.732782 (0.0283)**	1.547676 (0.2192)	5.456951 (0.0061)*	2.329758 (0.1041)	126.881354 (0.0000)*

Wald tests and p values in parenthesis are reported in the tables. Wald test statistics represents the joint significance.

*, **,*** denotes the 1 %, 5 %, 10 % significance levels respectively. L represents natural logarithm.

Table 7-Generalized Forecast Error Variance Decomposition ISE100

	Horizon	DLISE100	DLM1	DLFX	DLGOLD	DLINTM
DLISE100	0	1.000000	0.002918	0.339080	0.091140	0.098973
	1	0.949250	0.009856	0.335710	0.141570	0.111280
	2	0.920240	0.026125	0.325340	0.146720	0.109390
	3	0.906180	0.026446	0.320590	0.153060	0.113160
	...					
	8	0.903550	0.026975	0.320530	0.153360	0.113730
	9	0.903550	0.026975	0.320530	0.153360	0.113740
	10	0.903550	0.026975	0.320530	0.153360	0.113740
DLM1	0	0.002918	1.000000	0.002004	0.000348	0.002349
	1	0.004410	0.978060	0.001945	0.000917	0.007836
	2	0.005065	0.889070	0.001772	0.001050	0.077615
	3	0.005768	0.872870	0.009339	0.007743	0.080675
	...					
	11	0.007202	0.863940	0.010499	0.010910	0.080455
	12	0.007202	0.863940	0.010499	0.010910	0.080456
	13	0.007202	0.863940	0.010499	0.010910	0.080456
DLFX	0	0.339080	0.002004	1.000000	0.207860	0.009314
	1	0.344110	0.018852	0.830520	0.378160	0.033334
	2	0.341470	0.021015	0.822890	0.379200	0.034075
	3	0.330250	0.023653	0.782670	0.376470	0.062456
	4	0.322110	0.023502	0.767430	0.375360	0.070634
	...					
	13	0.321000	0.024041	0.763210	0.373440	0.070831
	14	0.321000	0.024041	0.763210	0.373440	0.070832
	15	0.321000	0.024041	0.763210	0.373440	0.070832
DLGOLD	0	0.091140	0.000348	0.207860	1.000000	0.008939
	1	0.090180	0.006912	0.213080	0.984420	0.011544
	2	0.086872	0.009328	0.205400	0.945290	0.036234
	3	0.086872	0.009328	0.205400	0.945290	0.036234
	...					
	10	0.086105	0.009738	0.206000	0.934380	0.038497
	11	0.086106	0.009738	0.206000	0.934380	0.038496
	12	0.086107	0.009738	0.206000	0.934380	0.038496
	13	0.086107	0.009738	0.206000	0.934380	0.038497
DLINTM	0	0.098973	0.002349	0.009314	0.008939	1.000000
	1	0.073322	0.003312	0.064604	0.055822	0.855910
	2	0.069586	0.010079	0.073537	0.070735	0.761600
	3	0.074742	0.009849	0.074230	0.073359	0.736580
	...					
	10	0.078193	0.009881	0.073702	0.073800	0.730830
	11	0.078194	0.009881	0.073702	0.073800	0.730830
	12	0.078194	0.009881	0.073702	0.073800	0.730830

Table 8-Generalized Forecast Error Variance Decomposition ISEIND

	Horizon	DLISEIND	DLM1	DLFX	DLGOLD	DLINTM
DLISEIND	0	1.000000	0.001466	0.288010	0.049099	0.088664
	1	0.964170	0.027853	0.280630	0.067628	0.090348
	2	0.938370	0.041329	0.273910	0.074902	0.090934
	3	0.927290	0.041381	0.271160	0.079579	0.093060
	...					
	11	0.924400	0.041599	0.270970	0.080149	0.093919
	12	0.924390	0.041599	0.270970	0.080150	0.093920
	13	0.924390	0.041599	0.270970	0.080150	0.093920
DLM1	0	0.001466	1.000000	0.003418	0.000918	0.000117
	1	0.025876	0.952170	0.003300	0.001254	0.005579
	2	0.024786	0.874860	0.003149	0.001257	0.070536
	3	0.024253	0.855450	0.010270	0.008085	0.077025
	...					
	10	0.025157	0.848330	0.011597	0.010885	0.077212
	11	0.025157	0.848320	0.011597	0.010885	0.077213
	12	0.025157	0.848320	0.011597	0.010885	0.077213
DLFX	0	0.288010	0.003418	1.000000	0.207320	0.012245
	1	0.299810	0.020137	0.820420	0.375890	0.040130
	2	0.283480	0.022462	0.776850	0.376850	0.064947
	3	0.283480	0.022462	0.776850	0.376850	0.064947
	4	0.274630	0.022716	0.757470	0.375240	0.074062
	...					
	11	0.273510	0.023356	0.754090	0.374200	0.074622
	12	0.273510	0.023356	0.754080	0.374200	0.074623
	13	0.273510	0.023356	0.754080	0.374200	0.074623
DLGOLD	0	0.049099	0.000918	0.207320	1.000000	0.006211
	1	0.048483	0.008108	0.207400	0.980130	0.011776
	2	0.048268	0.009401	0.205120	0.966360	0.017004
	3	0.047322	0.009285	0.199350	0.939000	0.034092
	...					
	12	0.046985	0.009951	0.199920	0.927410	0.037588
	13	0.046985	0.009951	0.199920	0.927410	0.037589
	14	0.046985	0.009951	0.199920	0.927410	0.037589
DLINTM	0	0.088664	0.000117	0.012245	0.006211	1.000000
	1	0.062559	0.006971	0.066980	0.054437	0.864640
	2	0.063591	0.019559	0.074346	0.069350	0.778650
	3	0.067148	0.020788	0.075098	0.072193	0.761110
	...					
	9	0.069223	0.020780	0.075060	0.072266	0.758860
	10	0.069224	0.020780	0.075061	0.072266	0.758860
	11	0.069224	0.020780	0.075061	0.072266	0.758860

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Table 9-Generalized Forecast Error Variance Decomposition ISEFIN

	Horizon	DLISEFIN	DLM1	DLFX	DLGOLD	DLINTM
DLISEFIN	0	1.000000	0.006813	0.364260	0.113550	0.078929
	1	0.944970	0.007911	0.364590	0.174800	0.096482
	2	0.918590	0.019893	0.353480	0.175980	0.095878
	3	0.908620	0.020258	0.348260	0.180600	0.098393
	...					
	11	0.907030	0.020954	0.348130	0.180590	0.098568
	12	0.907030	0.020954	0.348130	0.180590	0.098569
	13	0.907030	0.020954	0.348130	0.180590	0.098569
DLM1	0	0.006813	1.000000	0.002316	0.000052	0.004256
	1	0.006125	0.984950	0.002151	0.000658	0.008983
	2	0.007332	0.890040	0.001978	0.001016	0.082553
	3	0.008086	0.876020	0.008317	0.007615	0.084649
	...					
	10	0.009728	0.867100	0.009254	0.010513	0.084488
	11	0.009728	0.867100	0.009254	0.010513	0.084489
	12	0.009728	0.867100	0.009254	0.010513	0.084489
DLFX	0	0.364260	0.002316	1.000000	0.206330	0.005629
	1	0.359510	0.020932	0.838320	0.377320	0.025309
	2	0.350480	0.025270	0.783660	0.371380	0.058353
	3	0.350480	0.025270	0.783660	0.371380	0.058353
	4	0.342480	0.025787	0.767350	0.368060	0.066397
	...					
	11	0.342890	0.025805	0.765780	0.367270	0.066715
	12	0.342890	0.025805	0.765780	0.367270	0.066716
	13	0.342890	0.025805	0.765780	0.367270	0.066716
DLGOLD	0	0.113550	0.000052	0.206330	1.000000	0.011413
	1	0.111470	0.007288	0.214270	0.985620	0.012124
	2	0.112020	0.010100	0.209440	0.960970	0.022929
	3	0.110570	0.009879	0.205210	0.941270	0.040136
	...					
	12	0.109820	0.010395	0.205530	0.930660	0.042379
	13	0.109820	0.010395	0.205530	0.930640	0.042384
	14	0.109820	0.010395	0.205530	0.930630	0.042384
DLINTM	0	0.078929	0.004256	0.005629	0.011413	1.000000
	1	0.061865	0.003488	0.053306	0.053305	0.869180
	2	0.058246	0.008226	0.062751	0.067326	0.778900
	3	0.065677	0.007932	0.062907	0.069048	0.749910
	...					
	9	0.071309	0.008143	0.062223	0.069039	0.741730
	10	0.071310	0.008143	0.062223	0.069039	0.741730
	11	0.071310	0.008143	0.062223	0.069039	0.741730

Table 10-Generalized Forecast Error Variance Decomposition ISESERV

	Horizon	DLISESERV	DLM1	DLFX	DLGOLD	DLINTM
DLISESERV	0	1.000000	0.000254	0.168760	0.066342	0.13898
	1	0.967650	0.018043	0.161150	0.071978	0.15864
	2	0.915440	0.037953	0.155200	0.101130	0.15152
	3	0.880870	0.036737	0.152720	0.112210	0.16592
	...					
	8	0.875000	0.037655	0.154260	0.113170	0.16604
	9	0.875000	0.037654	0.154260	0.113170	0.16604
	10	0.875000	0.037655	0.154260	0.113170	0.16604
	11	0.875000	0.037654	0.154260	0.113170	0.16604
	12	0.875000	0.037654	0.154260	0.113170	0.16604
DLM1	0	0.000254	1.000000	0.000485	0.000773	0.00256
	1	0.003031	0.978010	0.000480	0.001245	0.00852
	2	0.002910	0.888720	0.000790	0.001146	0.0805
	3	0.002949	0.871070	0.009541	0.009995	0.08240
	...					
	9	0.003363	0.863490	0.010952	0.014013	0.0823
	10	0.003363	0.863490	0.010952	0.014013	0.0823
	11	0.003363	0.863490	0.010952	0.014013	0.0823
DLFX	0	0.168760	0.000485	1.000000	0.198980	0.0142
	1	0.207200	0.015638	0.810480	0.367320	0.0535
	2	0.208620	0.017910	0.802570	0.367560	0.0530
	3	0.197370	0.019229	0.757320	0.367900	0.0811
	4	0.190410	0.018590	0.736750	0.371030	0.0906
	...					
	8	0.189490	0.018885	0.733640	0.370990	0.0906
	9	0.189480	0.018884	0.733620	0.370990	0.0906
	10	0.189480	0.018884	0.733620	0.370990	0.0906
DLGOLD	0	0.066342	0.000773	0.198980	1.000000	0.0054
	1	0.068413	0.007099	0.199740	0.981980	0.0120
	2	0.067221	0.009865	0.196780	0.966300	0.0178
	3	0.065167	0.009564	0.192680	0.942730	0.0333
	...					
	8	0.064130	0.009617	0.194490	0.932710	0.0358
	9	0.064128	0.009617	0.194490	0.932690	0.0358
	10	0.064128	0.009617	0.194490	0.932690	0.0358
	11	0.064128	0.009617	0.194490	0.932690	0.0358
DLINTM	0	0.078929	0.004256	0.005629	0.011413	1.0000
	1	0.061865	0.003488	0.053306	0.053305	0.8691
	2	0.058246	0.008226	0.062751	0.067326	0.7789
	3	0.065677	0.007932	0.062907	0.069048	0.7499
	...					
	9	0.071309	0.008143	0.062223	0.069039	0.7417
	10	0.071310	0.008143	0.062223	0.069039	0.7417
	11	0.071310	0.008143	0.062223	0.069039	0.7417

The position of the gold prices and interest rate is interchanging regarding to the sector index in concern. The gold is more informative than the interest for ISE100 and ISEFIN the opposite conclusion is obtained for ISESERV and ISEIND. That consideration is accurate for the reverse relations as well. Similar response of the ISEFIN and ISE100 might be due to the more weight of financial companies on the composition of ISE100. Gold is reserve currency and the safe haven to secure investments. Thus gold is considered as the best alternative for the times of financial fragility. That argument might contribute more effective position of gold on the financial companies, explaining 7% of its fluctuations. The interest rate demonstrates relatively more impact on the industry and services sectors as nearly forcing the 7% and 9% of the index fluctuations for them respectively. Discovery of higher subjectivity of the service index to interest is consistent with the more influenced position to M1 conclusion. That all point out the sensitivity spending to the available money in the market and the cost of borrowing. Interest's impact on the industry might be related to expansion of operation possibilities affected by the interest rates.

Impulse response analysis results among indexes with the macro economic variables presented in the figures 1 to 8 provided in the appendix. Investigation of Figure 1 reveals that the changes in interest, exchange rates and gold prices have mainly negative effect on the ISE100. That is the implication of the argument that these are alternative investment vehicles to stocks. The impact of FX and the interest rate resembles each other as reflecting the major immediate reaction by ISE100. The response to FX dies out more quickly compared to interest which keep influencing the ISE100 seven months. However, the negative immediate response changes in its direction after four months, starts to impact positively to ISE100, then rebounds. Least influencing variable to the ISE100 with a shock is observed as the monetary expansion. It shows a fluctuating influence on the ISE100, first weak positive, then negative and a positive impact follows which lost significance after the 7 months. ISE100 reflects the innovations on gold strongly after two months, then significant negative effect occurs, after a stabilization period, then impact reverses and dies out after five months.

The innovation on the ISE100 index has the maximum power on the interest rates and FX negatively. That negative relationship found is in line with the prior studies such as Murphy and Sahu (2001), Wagner at all (2005), Omran (2003), Fitzpatick (1994), Chen at all (1986).That negative response of interest strengthens the argument of competing investment vehicles by reflecting a bidirectional perspective. Thus, lower ISE100 causes investors to forward money to interest dependent alternatives. That immediate influence lasts for 3 months; then lessens and lost its significance after the seven months. The format of the response of the interest and FX are similar, however recovery of FX from that unexpected shock took longer compared to interest. When ISE100 raises, it quickly spill over that to gold in opposite direction, that influence survive only three months however.

The main difference from ISEIND from the ISE100 is the higher response of ISEIND. FX and the GOLD's extended impact is changing its direction to positive after three months and lengthening horizon for influence to stop. The outcome of industry sector is more sensitive to exchange differences may stem from the endurance of that sector to export-import activities. Thus, after the prior impact, the industry index moves in line with the GOLD, that might be due to the more mature nature of the industrial firms mirroring the gold' nature as a safe haven.

The figures presented in figure 4 for the impact of ISEIND on the macro variables do not indicate major disparity compared to Figure 1 for ISE100.

When we explore the separation of the ISEFIN from ISE100 and other sector indexes, it is clear that FX is more rigorous in its impact on the ISEFIN compared to others. That might be due to exchange deficit of the finance companies placed in that index or more liquid structure due to capital adequacy rules of finance companies let them instantly more sensitive to depreciation in currency. Other than that only the slightly higher impact of gold price movements on ISEFIN worth to note here. No major variation from other indexes experienced after the imposed shocks to macro variables by the ISEFIN growth.

We should note down here that main dissimilarity of the ISESERV was the more immediate response to GOLD price movements and lower reaction to FX changes.

4. Conclusion

Our study investigates long term relationships and short term dynamics among the selected macro economic variables and the ISE100 and ISE sector indices. We construct our analysis to observe the special association and responses among these sub indexes and the main index of ISE. Toda Yamamoto process employed in the study reveals that Gold prices granger cause the ISE100 with only unidirectional manner. On the other hand ISE100 only granger causes the interest, which emphasis alternative investment tools explanation of interest dependent instruments and the shares. Moreover, our findings present resemblances regarding industry and finance index with the ISE100. Services index is found to be differentiated from other indexes as leaded by the changes in monetary expansions, which we conclude as the influence of retailer companies situated in the index. The indexes leading role reported in the study on the fluctuations of interest in the long run should highlight the role of stock indexes in the finance policy considerations. Besides, position of gold as an alternative investment vehicle is verified.

Additionally, shocks imposed to the variables are assessed with the impulse response analysis. It should be noted here that innovations on the monetary expansion has the lowest impact on the stock indexes in general. Distinct features are observed as the ISEIND's parallel move with the GOLD after initial response, FX's more rigorous impact on the ISEFIN compared to others and ISESERV's immediate response to GOLD price movements and lower reaction to FX changes. We believe that these findings would be beneficial both for the macro level analysis and the portfolio diversification purposes. Future studies might concentrate on the elaboration of causes and effects of these different responses.

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Appendix
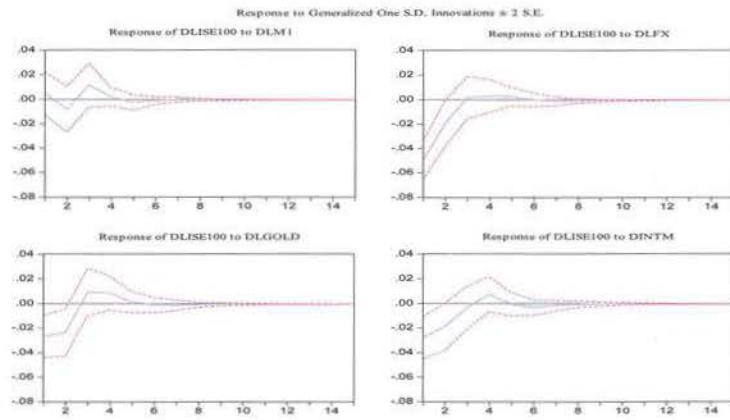
Figure 1-Genaralized impulse-responses of DLISE100 to innovations of macro variables.
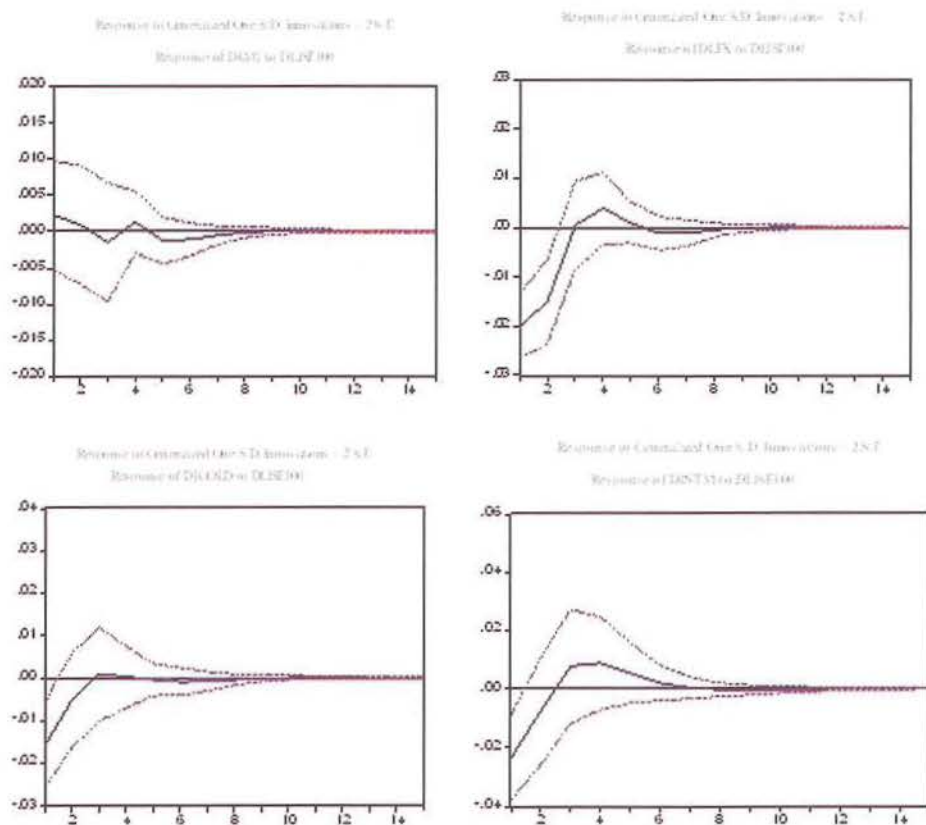
Figure 2- Responses of macro variables to innovations of DLISE100
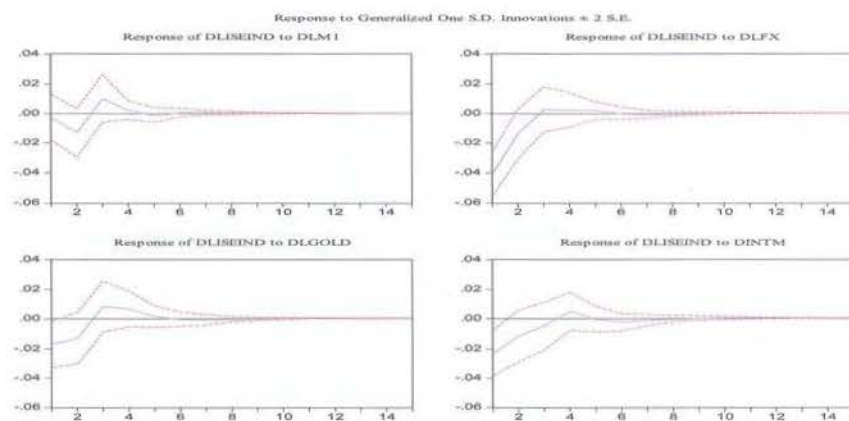
Figure 3-Genaralized impulse-responses of DISEIND to innovations of macroeconomic variables.
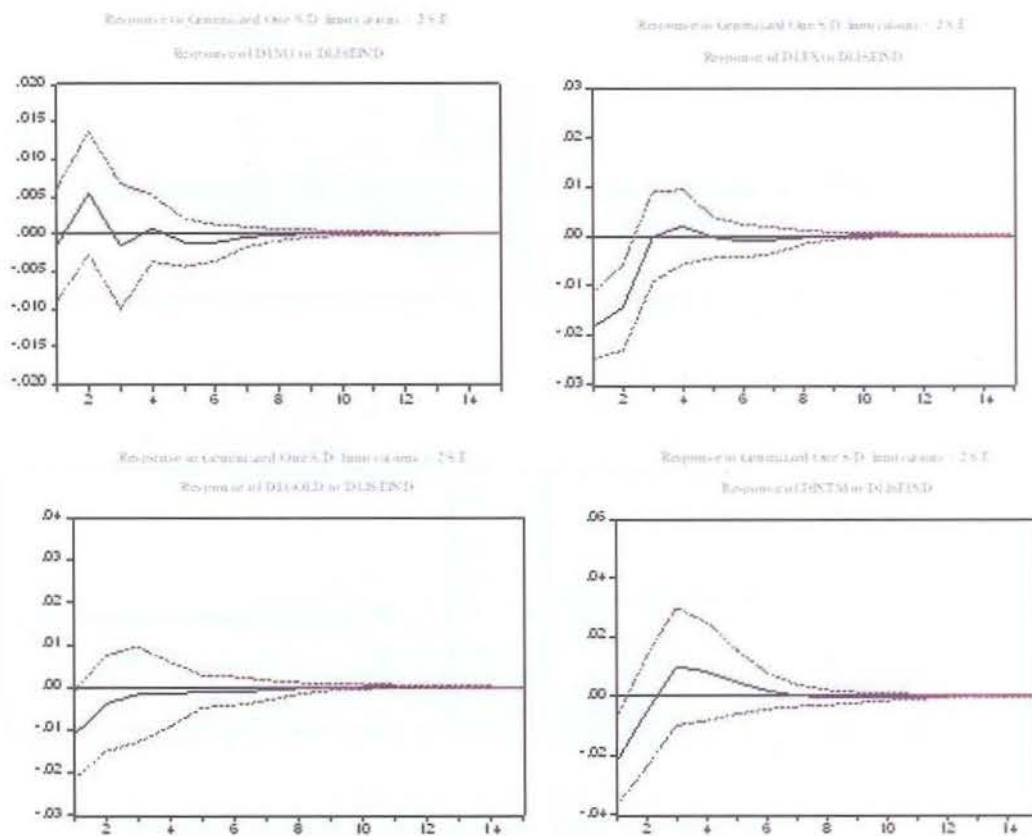
Figure 4- Responses of macro variables to innovations of DLISEIND
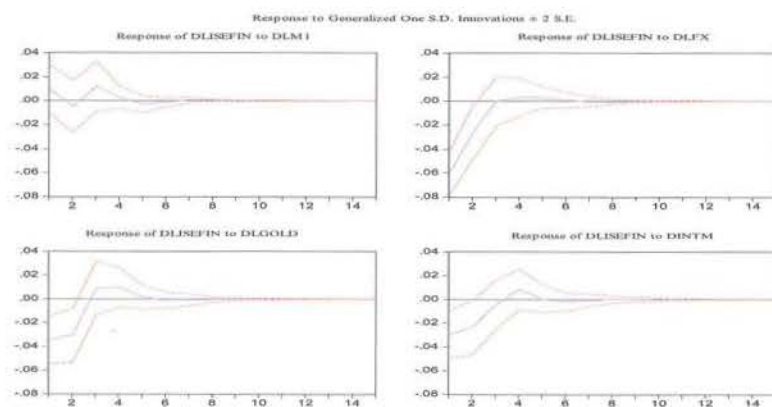
Figure 5-Genaralized impulse-responses of DLISEFIN to innovations of macro variables.
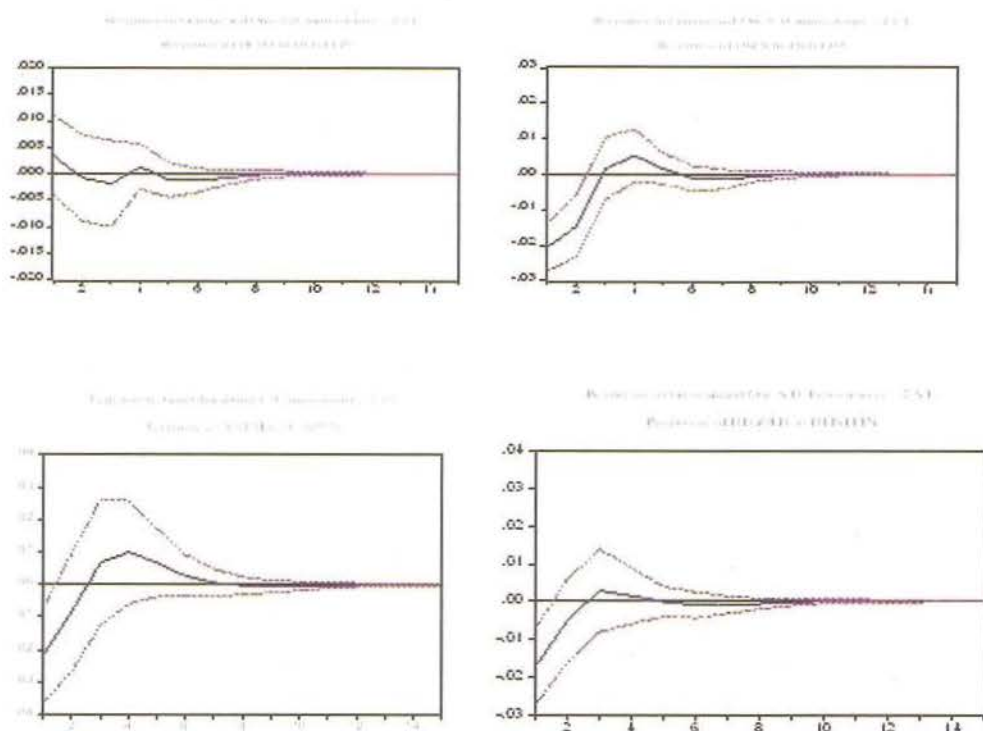
Figure 6- Responses of macro variables to innovations of DLISEFIN
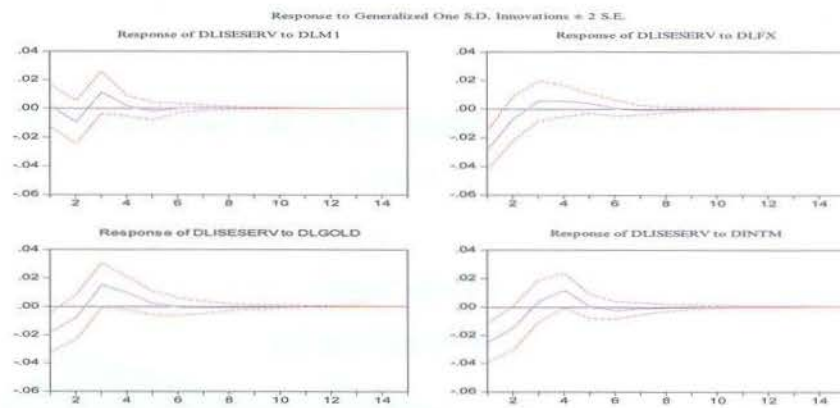
Figure 7-Genaralized impulse-responses of DLISESERV to innovations of macroeconomic variables.
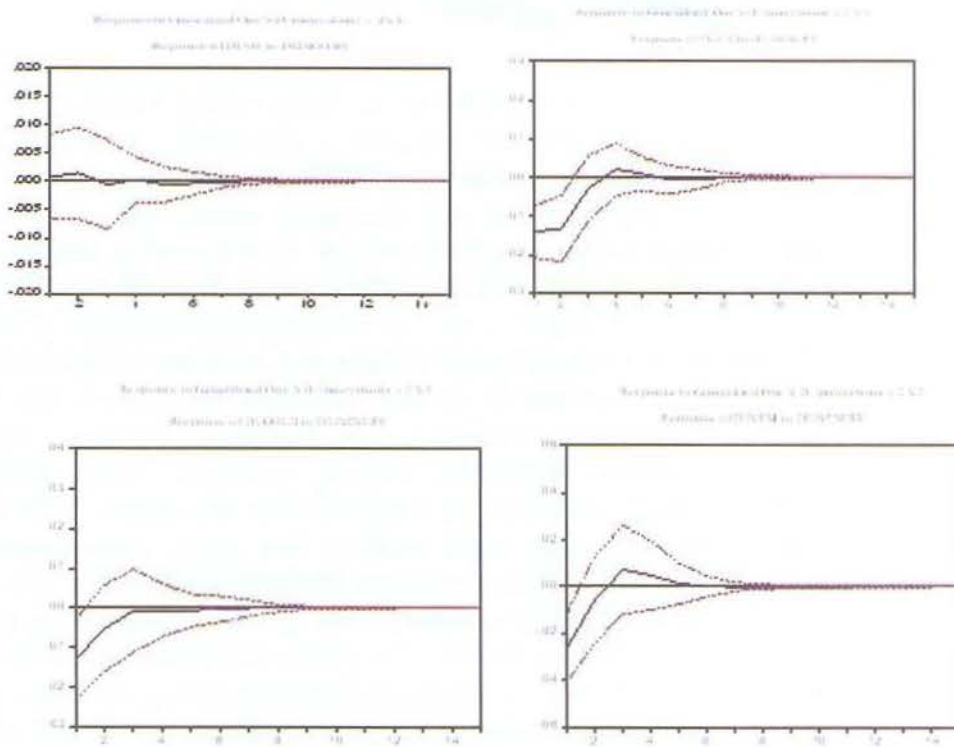
Figure 8- Responses of macro variables to innovations of DLISESERV

A Panel Cointegration Analysis of Budget Deficit and Inflation for EU Countries and Turkey

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Abstract

This paper aims to analyze the empirical relationship among budget deficit and inflation for Turkey and European countries. According to theory, fiscal imbalances result in inflation problem as 1990s experience of Turkey has shown. The major outcome from the empirical studies indicated strong evidence that a budget deficit financed through monetarisation and a rising money supply could lead to inflation. The inflationary effect of budget deficits depends on the means by which the deficit is financed and the impact of that on aggregate demand. In this paper, budget deficits and inflation relationships are studied by utilizing the Larsson *et al.* test approach for Turkey and other sixteen European countries, including Czech Republic, Hungary, Poland, Austria, Belgium, Greece, Denmark, France, Germany, Italy, Holland, Norway, Slovakia, Spain, Sweden and England over the period 1990-2008, annually. Apart from the traditional studies, this paper investigates the relationship by using panel data cointegration analysis. Firstly, LLC test, IPS test and Hadri test are employed to test the presence of unit roots among series. After that, cointegration analysis is done. Our results will point out the fact that budget deficit and inflation has long run positive relationship in some of the countries, while it has negative relation in other countries. At the end of this analysis, we will try to understand if there is difference tendency towards to budget deficit-inflation relation among developing and developed countries.

1. Introduction

The impact of fiscal policies on inflation has been widely discussed since 1990s. After the studies done for closed economies in 1990s, in 2000s the fiscal theory of price level was being debated within monetary unity of European countries framework. In the discussion

of this monetary system's sustainability, the public finance phenomenon has gained importance. In the Maastricht criteria (Maastricht treaty, 1992), while defining the basic conditions to enter euro area for the new entries, the finance of fiscal deficits is prioritized by European countries. Therefore, one can argue that the FTPL has been dominating the literature recently.

It is argued that the monetization of deficits is the fundamental reason for the high inflation problems in developing countries. Turkey, as a developing country, experienced extremely high inflations during 1990s. The underlying reasons for such a tremendous amount of inflation can be miscellaneous. However, to large extent, economists concluded that the main cause of inflation is high budget problems. The restriction of government to central bank resources which is implemented with the liberalization program of 1980s, made governing authorities focus on domestic debt financing. That is, the government avoided compensating the deficits through corresponding money supply. Meanwhile, the domestic banks became the major source of domestic debt financing that resulted in an increase in the assets of banking system. Thus, the interrelationship of budget deficit and inflation is a vital point for Turkish economy, despite the fact that the direction of relationship is uncertain.

The basic purpose of this paper is to analyze this relationship between price level and fiscal imbalances. The paper unfolds firstly by giving a theoretical framework for that relationship. In the following part, a brief literature review is provided. In the third part, empirical evidence from EU countries and Turkey is stated by using panel cointegration analysis. In the last part, the results of empirical study and its compliance with the theory is discussed.

2. Theoretical Framework

2.1. Budget Deficit and Inflation Relationship in General

The term of budget deficit can be defined as the difference between budget revenue and budget expenditure. Budget revenue includes three important components which are tax

revenue, tax-exempt revenues and private revenues. The most important component of the budget revenue is tax revenue. However, budget expenditure involves four important elements that are current expenditure, investment expenditure, real expenditure and transfer payments. Current expenditure is a kind of expenditure which is related to nondurable goods. It is usually used for short term expenses. Investment expenditure is stated as expenses related to investment and efficient use of resources. Transfer payment is an unrequited payment that has an indirect effect on GDP. Real expenditure consists of production factors and production expenditure. If budget deficit shows the disharmony and imbalance between revenue and expenditure, both the revenue and expenditure side of budget should be analyzed in detail.

It is notable about budget deficits that there is a significant difference between developed and developing countries about budget balances. Most developed countries don't have budget deficit problem because of their strong fiscal structure. In developed countries, low level of foreign indebtment prevents the debt payment to be burden on the budget. Moreover, most developed countries have a trade surplus due to having more export than import. On the other hand, developing countries usually have high inflation, lower per capita income compared to developed countries, high current account deficit and high public expenses. All these progresses cause increases in budget deficit and deterioration of macroeconomic stability. Developing countries have four different ways to finance their high budget deficit which are printing money, running down foreign exchange reserves, borrowing from abroad and domestic markets.

As stated above, developing countries have more budget deficit problems compared to developed countries. The reasons of budget deficit can be stated as unstable public revenue, low degree of economic development, low acceleration of public revenue, deficient government auditing and the regulatory role of government in the economy. Countries which have low degree of economic development, have high level of budget deficit owing to three important reasons which are high spending pressure, deficient tax revenue and low private savings. High employment cost is very crucial problem of public economy in developing countries and these governments don't have any chance to reduce it. Also, deficient public revenue leads to increase in budget deficit. In developing

countries, private saving level is so low and deficits are financed by borrowing which cause to borrowing-interest spiral by increasing budget deficit more.

In general, inflation has raising effect on budget deficit by raising nominal interest rate. According to Fischer Effect; nominal interest rate consist of real interest rate and expected inflation rate. If the inflation expectation increases, it causes to rising nominal interest rate which leads to the public debt to go up. Interest payment covers the big part of public payment in developing countries. If interest rate increases because of inflation, it leads to raise interest payment as well as budget deficit by causing the Debt/ GDP ratio to increase. Thus, high interest rate and interest payment lead to instability between budget and public deficit acceleration and tax revenue acceleration. Budget and public deficit always increase faster than public revenue so budget deficit increase as well.

In spite of the positive relationship between inflation and budget deficit as stated above, in some cases inflation and budget deficit move in reverse direction. Inflation tax is important for this. If inflation tax is higher than normal level, as inflation increase people avoid holding money because the cost of holding money is high. Thus, real monetary base tends to decrease as inflation tax correspondingly. Holding money would be a costly activity. Inflation tax would be a type of tax revenue which makes the budget deficit decline. Another type of negative relation between inflation and budget deficit occurs because of public borrowing stocks. If borrowing is not indexed to the inflation, as the inflation rise the real value of public borrowing stocks would decline. As the public borrowing stock fall, budget deficit is expected to decrease.

2.2. Budget Deficit and Inflation Relationship in Different Economic Thoughts

There is a considerable debate on budget deficits and its inflationary effects in economic theory literature. In the preceding period of Keynes, the classical economists gave importance to a balanced budget, yet they didn't analyze its impact on price levels. Apart from classical economics, Keynes saw the fiscal imbalances and budget deficits as internal components of aggregate national demand.(Corsetti and Roubini,1997:27) The underlying

reason is that when budget expenditures increase, aggregate demand curve responds it by shifting right, leading to an increase in both prices and production.(Assuming aggregate supply is not perfectly elastic/inelastic) The increasing nominal income will come up with rising transactional demand for money, which is compensated by speculative demand for money, i.e. increasing real interest rates.(Anusic,1991) In the Keynesian economic thought, the budget deficits can be tolerable in the crisis times. Moreover, Keynes saw the budget deficits as an indicator of the impact of fiscal policy on aggregate demand. Thereby, due to the fact that the budget deficit can affect economic performance, it has been perceived as an endogenous factor (Blanchard and Fischer, 1989). As a result, in Keynesian theory, because the main aim of the governments is to sustain high overall economic performance in the long run, the budget deficits can be acceptable to some degree (Altıntaş et.al., 2008).

In the neoclassic theory, the debate of Sargent and Wallace enlightens the discussion on the relationship among fiscal imbalances and inflation. Sargent and Wallace discuss two types of the coordination between monetary and fiscal authorities which is effective in controlling the inflation. In the first type of coordination in which the monetary authority is dominant, monetary authorities announce the monetary base growth and fiscal policy sets its budget by considering the revenue created by monetary policy. In the second type of coordination, in which the fiscal authorities are dominant, fiscal policy sets its budget and announces the amount of money needed for monetary authorities through seignorage and bond sales. (Sargent and Wallace, 1981) The second type of coordination provides insight to inflation problem which is led by fiscal imbalances, since the fiscal authorities sometimes demand more revenue than tolerable amounts and this creates inflation. This argument has been debated widely in the literature. The 'fiscal view of inflation has been especially prominent in developing country literature which has long recognized that less efficient tax collection, political instability and more limited access to external borrowing tend to lower the relative cost of seignorage and increase dependence on inflation tax.' (Catao and Torrentes, 2003) Thus in the neoclassic theory the effect of fiscal theory is significant especially in developing countries.

In the neo classical approach, increasing budget deficit, which is compensated by borrowing instead of taxes, results in incrementing private sector wealth, consumption and

aggregate demand, in turn. Nevertheless, this rising wealth is accompanied with a misperception by private sector about which the budget deficit will be paid by taxes in the future. Buiter (1983) argues that 'if deficits are financed by printing money, this will fuel inflation. If they are financed by borrowing this will put upward pressure on interest rates, leading to "crowding out" of interest sensitive spending.' As this kind of financing arises the real interest rates, the neoclassical theory suggests that increasing budget deficit can lead crowding out of investment and capital.

The new classical economists oppose the misperception part of the theory and asserted that such an assumption is inconsistent with rational expectation theory. That is, the demand for goods is based on expected present value of the future taxes. Fiscal policy can influence the price level through aggregate demand changes; it should change the expected value of the future taxes, which occurs by altering the spending. 'In this sense, budget deficits and taxation have equivalent effects on the economy-hence the term, "Ricardian Equivalence theorem" (Barro, 1989). In other words, there is no change in national saving, since an increase in private saving as faced by an equivalent decline in public saving. Because national savings, in turn, investment and aggregate demand do not change, one can argue that the budget deficit doesn't affect price levels.

As we can see from miscellaneous economists from different economic schools, the financing of fiscal deficits has a key role in inflationary effects of them. To this end, the type of deficit is can be either bond-financing or monetization. In case of monetization, as monetarist approach puts forward, the price levels are directly affected. In addition, if the deficits are financed by borrowing, i.e. selling bonds, then the interest rates must be lower than the monetary base growth to prevent the unexpected inflationary effects. Thus, one can assert that budget deficits are an important policy tool to be taken into account in inflation targeting policies.

3. Literature Review

The relationship between budget deficit and inflation is a very common debate in economic literature. Lots of economists have analyzed the relationship among these two

variables for years by using different countries, different econometric technique and different time period. While some economists found negative relation, most of the economists found positive relationship between budget deficit and inflation. Some of these studies are ordered below with their critical results.

Fischer (1989) analyzed the budget deficit-inflation relationship in different countries. He found that the countries with high inflation have strong relationship among inflation and budget deficit. Fischer noted that high inflation has reducing effect on tax revenue which is known as Tanzi-Olivera Effect. Also, high rate of inflation increases budget deficit by declining seignorage revenue.

Hondroyiannis and Papapetrou (1997) studied on the direct and indirect effect of budget deficit on inflation in Greece and found the result that budget deficit has an indirect raising effect on inflation. However, they also stated that an increase in inflation results in an increase in budget deficit.

Cardoso (1998) worked on the relationship between budget deficit and inflation in Brazil by following Patinkin's (1993) study. He found reverse relationship between budget deficit and inflation in Brazil.

Kıvılcım (1998) analyzed the long run relationship among budget deficit and inflation in Turkish Economy between the years 1950-1987. At the end of his study, he concluded that a change in budget deficit cause to change in inflation on the same direction. He also highlighted that this budget deficit-inflation spiral is one of the most important problems of Turkish Economy.

Tanzi (2000) researched the tax revenue and budget deficit relation in Latin American countries. He emphasized that even though the tax revenue rises, the budget deficit and public deficit also increase. He stated that this imbalance results from the deficient and inefficient social programs.

Egeli (1999) studied relations among inflation tax, budget deficit and public spending. His result was reverse relation among inflation tax and budget deficit. He also stated that increasing public spending leads to increase in budget deficit. Egeli concluded that this disequilibrium results from governments' wrong policies such as using borrowing in order to finance the deficit.

Şen (2003) analyzed the relations among tax revenue and inflation. Şen stated that high inflation cause to decrement in tax revenue in crisis time. Low level of tax revenue causes tax loss, which leads to high budget deficit. He also questioned the timing of tax collection. He concluded that short term tax collection is better than long term tax collection. In the long run the real value of tax revenue tends to decline because of high inflation.

Catao and Terrones (2000) worked on the relationship between inflation and budget deficit by using data from different countries. The result that they reached is being weak relationship in developed countries and being strong positive relationship in developing countries.

Yabal, Baldemir and Bakımlı (2004) made a study about imbalance between public spending and public revenue in Turkey. They highlighted that the government finances budget deficit by using short term advance money. It also results in the money supply to increase which results in inflation to go up. They concluded that high budget deficit leads high inflation in Turkish Economy.

Solomon and Wet (2004) made a research on Tanzania. They found a strong positive relationship between inflation and budget deficit. They stated that budget deficit has a significant effect on inflation. They also concluded that developing countries should give more importance to inflation because inflation tends to be affected from many economic shocks such as high budget deficit. According to them inflation should be controlled by efficient fiscal policies.

4. Econometric Methodology

After considering relevant theory and reviewing literature, it is time to give empirical evidence to test the consistency of the theories with the real world. To this end, firstly the series should be taken logarithms and differenced to avoid spurious regression problem that means that 'regressing a non-stationary variable on a deterministic trend does not yield a stationary variable'(Harris, 1995:20).

4.1. Panel Unit Root Test

As the involvement of macroeconomic applications in the panel data analyses has been growing recently, the Dickey-Fuller and Augmented Dickey-Fuller tests are required to be extended for testing stationarity in panel data analysis. When dealing with panel data, because the procedure is more complex, the ADF and DF tests can result in inconsistent estimators. Thus, the stationarity of the series should be tested by using three different types of tests, namely LLC (Levin *et al.*, 2002), IPS (Im *et al.*, 2003) and Hadri (2000).

In the analysis, firstly the LLC test is employed to test the stationarity. Levin *et al.* model allows heterogeneity of individual deterministic effects and heterogeneous serial correlation structure of the error terms assuming homogeneous first order autoregressive parameters (Barbieri, 2004). In addition the model provides two-way fixed effects, one of which comes from the term α_i and the other one emanates from δ_t. Moreover, these two parameters allow for heterogeneity, as the coefficient of lagged Y_i is limited to be homogenous through all individual units of the panel.

$$\Delta Y_{i,t} = \alpha_i + \rho Y_{i,t-1} + \sum_{k=1}^{n} \varphi_k \Delta Y_{i,t-k} + \lambda_i t + \delta_t + \varepsilon_{it} \qquad i = 1,...,N \qquad t = 1,...,T$$

LLC model tests the hypothesis of non-stationarity, i.e. the presence of unit roots. That is,

$$H_0 : \rho_1 = \rho_2 = \rho_3 ... = \rho_N = \rho = 0$$

$$H_1 : \rho_1 = \rho_2 = \rho_3 \ldots = \rho_N = \rho < 0$$

There are two major shortcomings of the LLC test. Firstly, it relies on the assumption of the independence across units of panel where a cross sectional correlation may be present (Barbieri, 2004). Secondly, and more importantly, autoregressive parameters are considered to be identical across the panel in this model.

Im, Persan and Shin (2003) broadened the LLC test to overcome the second limitation of it by presenting a more flexible and computationally simple test structure that permits the $\rho\rho$ to differ among individuals, i.e. by allowing heterogeneity. The IPS test made the estimation for each of the i section possible. As a result their model is such that;

$$\Delta Y_{i,t} = \alpha_i + \rho_i Y_{i,t-1} + \sum_{k=1}^{n} \varphi_k \Delta Y_{i,t-k} + \lambda_i t + \delta_t + \varepsilon_{it} \qquad i = 1, \ldots, N \qquad t = 1, \ldots, T$$

Im *et al.* tests the null of non-stationarity. That is;

$$H_0 : \rho_i = 0 \text{ for all i}$$

$$H_1 : \begin{cases} \rho_i < 0 & for \ i = 1,2,\ldots N_1 \\ \rho_i = 0 & for i = N_1 + 1,\ldots N \end{cases}$$

This alternative test clarifies that a fraction of the panel can have unit roots. This is the contrasting point of IPS to LLC. The IPS model is constructed under the restrictive assumption that T should be the same across individuals. That is to say, there should be a t-bar statistic which is the mean of ADF t-statistics for testing $\rho_i = 0$ for all i such that

$$1/N \sum_{n=1}^{i} t\rho_i$$

That is, $t\rho_i$ converges to a statistics denoted as t_{iT} which is presumed to be iid and has finite mean and variance. (Asteriou, 2005) Finally, it is significant to note that these procedures are relevant in balanced panels and it is based on collecting test statistics.

Hadri (2000) test is distinctive from other two tests mentioned above for testing the absence of unit roots, i.e. variance of the random walk equals to zero. He 'proposes a parameterization which provides an adequate representation of both stationary and non-stationarity variables and permits an easy formulation for a residual based Lagrange-Multiplier (LM) test of stationarity.' (Brabrieri, 2004) In his model, the disturbance terms are hetoroskedastic across i. He provides a LM where the series are stationary (Çelik,et.al.,2008), such that;

$$y_{it} = r_{iO} + \beta_i t + e_{it} \text{ where } e_{it} = \sum_{t=1}^{t} u_{it} + \varepsilon_{it} ,$$

$$t = 1,...,T \quad i = 1,...,N$$

4.2. Panel Cointegration Tests

Although differencing the data is a useful transformation in preventing the spurious regression problem, it also causes the loss of the long term information that the series include. At this point, cointegration analyses, which provides such an analysis that 'even though the series themselves may contain stochastic trends (i.e. non-stationary), they will nevertheless move together over time and the difference between them will be stable (i.e. stationary)', (Harris, 1995:22), are employed to examine the long-term relations between the variables. The cointegration tests are implemented through two main tests, namely Pedroni (1997, 1999 and 2000) and Larrson *et al.* (2001).

Pedroni (1997) concentrated on the homogeneity of the two simple variables in his first analysis. Nonetheless, it has some limitations. Thus, in the second study, he analyzed multi regressors models. The good feature of this test is that it allows both cointegration vectors to vary and heterogeneity in the errors across cross sectional units (Asteriou, 2005). As a result, Pedroni (1999) developed seven test statistics to test the null of no cointegration between two variables.

1.Panel v statistic

$$T^2 N^{3/2} Z_{\hat{V}N,T} \equiv T^2 N^{3/2} \left(\sum_{i=1}^{N} \sum_{t=1}^{T} \hat{L}_{11i}^{-2} \hat{e}_{i,t-1}^2 \right)^{-1}$$

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2.the panel statistic

$$T\sqrt{N}Z_{\hat{\rho}N,T} \equiv T\sqrt{N}\left(\sum_{i=1}^{N}\sum_{t=1}^{T}\hat{L}_{11i}^{-2}\hat{e}_{i,t-1}^{2}\right)^{-1}\sum_{i=1}^{N}\sum_{t=1}^{T}\hat{L}_{11i}^{-2}\left(\hat{e}_{i,t-1}\Delta\hat{e}_{i,t}-\hat{\lambda}_i\right)$$

3. the panel t statistic (Non-parametric)

$$Z_{tN,T} \equiv \left(\tilde{\sigma}_{N,T}^{2}\sum_{i=1}^{N}\sum_{t=1}^{T}\hat{L}_{11i}^{-2}\hat{e}_{i,t-1}^{2}\right)^{-1/2}\sum_{i=1}^{N}\sum_{t=1}^{T}\hat{L}_{11i}^{-2}\left(\hat{e}_{i,t-1}\Delta\hat{e}_{i,t}-\hat{\lambda}_i\right)$$

4. The panel t statistic (parametric)

$$Z_{tN,T}^{*} \equiv \left(\tilde{S}_{N,T}^{*2}\sum_{i=1}^{N}\sum_{t=1}^{T}\hat{L}_{11i}^{-2}\hat{e}_{i,t-1}^{*2}\right)^{-1/2}\sum_{i=1}^{N}\sum_{t=1}^{T}\hat{L}_{11i}^{-2}\left(\hat{e}_{i,t-1}^{*}\Delta\hat{e}_{i,t}^{*}\right)$$

5. the group ☐statistic(parametric)

$$TN^{-1/2}\tilde{Z}_{\hat{\rho}N,T-1} \equiv TN^{-1/2}\sum_{i=1}^{N}\left(\sum_{t=1}^{T}\hat{e}_{i,t-1}^{2}\right)^{-1}\sum_{t=1}^{T}\left(\hat{e}_{i,t-1}\Delta\hat{e}_{i,t}-\hat{\lambda}_i\right)$$

6. The group t statistic (non-parametric)

$$N^{-1/2}\tilde{Z}_{tN,T-1} \equiv N^{-1/2}\sum_{i=1}^{N}\left(\hat{\sigma}_i^{2}\sum_{t=1}^{T}\hat{e}_{i,t-1}^{2}\right)^{-1/2}\sum_{t=1}^{T}\left(\hat{e}_{i,t-1}\Delta\hat{e}_{i,t}-\hat{\lambda}_i\right)$$

7. The group t statistic (parametric)

$$N^{-1/2}\tilde{Z}_{tN,T}^{*} \equiv N^{-1/2}\sum_{i=1}^{N}\left(\sum_{t=1}^{T}\hat{S}_i^{*2}\hat{e}_{i,t-1}^{*2}\right)^{-1/2}\sum_{t=1}^{T}\left(\hat{e}_{i,t-1}^{*}\Delta\hat{e}_{i,t}^{*}\right)$$

Larrson, Layhagen and Löthgren (2001) constructed their model on Johansen's (1988) maximum likelihood estimator tests on residuals, i.e. a panel extension of VAR cointegration analysis. This model permitted to avoid from unit root tests on residuals, widening the unique cointegrating vector assumption (Asteriou, 2005). 'The construction of this test statistic is similar to Im, Pesaran, and Shin (2003) and hence the test statistic is given by a suitably centered and scaled version of the cross-sectional average of the

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individual trace statistics' (Wagner and Hlouskova, 2006). As a consequence, the model is represented such that;

$$\Delta Y_{i,t} = \Pi_t Y_{i,t-1} + \sum_{k=1}^{n} \Gamma_{ik} \Delta Y_{i,t-k} + \varepsilon_{i,t}$$

The Larsson *et al.* model is based on the estimation of the above model separately for each cross sectional unit by employing the maximum likelihood models to compute the trace for each. To this end the null and alternative hypothesis will be;

$$H_o = rank(\Pi_i) = r_i \leq r \text{ for al } i=1,...,N$$

$$H_1 = rank(\Pi_i) = \rho \text{ for all } i=1,...,N$$

where p is the number of variables we adopt to test cointegration among them.

We can evaluate the Larsson *et al.* process in two phases. First, after the computation of trace statistics, the rank trace statistic LR_{NT} should be calculated by taking the average of N cross sectional units. Second, the LR_{NT} statistics is used to calculate Y_{LR} by adopting the formulation below. As it can be realized, one can say that when Y_{LR} is greater than the critical value of 1.96, it moves to the upper cointegration vector number by rejecting the one it has (Çelik,et.al., 2008).

$$Y_{LR} = \sqrt{N}(LR_{NT} - E \left[Z_k \right]) / \sqrt{Var(Z_k)}$$

5. Empirical Findings

In this study, the budget deficit and inflation are investigated for 16 European Countries, namely Austria, Belgium, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Netherlands, Norway, Poland, Slovak Republic, Spain, Sweden, United Kingdom, and Turkey. As noted, the countries are selected from both developed and developing countries. Since, Turkey wants to converge to European Union countries; it is useful to examine budget deficit and inflation relationship in EU countries and Turkey.

The data are drawn from OECD stat extracts. For budget deficit statistics, the government lending/borrowing statistics are used and they are divided into gross domestic product to

understand the real meaning of those deficits for that country. For inflation data, consumer price index for each country is adopted. In overall analysis, the panel data set is employed.

5.1. Panel Unit Root Tests

As a precondition for panel cointegration tests, panel unit root tests, including LLC (2002), IPS (2003) and Hadri (2000), are implemented as individual intercept and intercept and trend for budget deficit (BD) and inflation (P) data. LLC process tests the common unit root process under the null of non-stationarity. Table 1 show that the presence of unit root could not be rejected. Nevertheless, when one takes the first difference of the variables, it can be noted that both of the variables have unit root in not only individual intercept case, but intercept and trend situations, as well.

IPS test has the same null hypothesis of having unit roots as LLC test. However, it assumes individual unit root process as stated above. This test also indicated a positive result in testing the presence of unit roots of series just like the LLC test's results.

In addition to the previous tests, Hadri test is also implemented. Apart from the previous tests, this test has a distinctive null hypothesis which claims the stationarity of the series. In the level case, the null of having no unit roots is rejected and after taking first differences, this hypothesis approached to not rejecting this null hypothesis as table 2 points out.

As a result, these outcomes obtained from panel unit root tests allowed us to go on to cointegration tests.

5.2. Panel Cointegration Tests

After assuring the same integration level for both of the series and performing panel unit root tests, it is possible to continue with cointegration tests.

Table 1. Panel Unit Root Tests- Level Case

Variable	Situation	Common Unit Root		Individual Unit Root
		LLC	Hadri	IPS
BD/GDP	Individual	-0,99905 (0,1584)	6,83418 (0,0000)	-0,81201 (0,20849)
	Individual Intercept and Trend	2,15481 (0,9844)	5,51930 (0,0000)	0,41295 (0,6602)
Inflation (P)	Individual	1,78507 (0,9629)	7,01099 (0,0000)	-6,68613 (0,0000)
	Individual Intercept and Trend	21.1715 (1,0000)	8,88533 (0,0000)	1,17610 (0,88502)

Table 2. Panel Unit Root Tests- 1st Differenced Case

Variable	Situation	Common Unit Root		Individual Unit Root
		LLC	Hadri	IPS
BD/GDP	Individual	-5.36934 (0,0000)	2,29595 (0,0108)	-5,97775 (0,0000)
	Individual Intercept and Trend	-6,45968 (0,0000)	6,44716 (0,0000)	-6,07663 (0,0000)
Inflation (P)	Individual	11,7538 (1,0000)	5,3842 (0,0000)	-9.53613 (0,0000)
	Individual Intercept and Trend	-179,185 (0,0000)	7,40287 (0,0000)	-53,3361 (0,0000)

* In the analysis, Modified-Swartz criteria's automatic selection of lags is used. The numbers in brackets represents probabilities and the others represent critical statistics.

5.2.1. Pedroni Test

Pedroni computed seven statistics to test the null of no cointegration among series. For these series, the critical value is -1.64 except v-statistic which has 1.64. That's to say, when the test statistic is lower then -1.64, (greater than 1.64 for v-statistic), then the null hypothesis is rejected. Table 3 reports these seven statistics for budget deficit- inflation relationship. As it can easily be understood from the table, there is not a strong

cointegration between two variables in both individual intercept and individual intercept and trend situations. On the other hand, the table 3 points out a remarkable cointegration between two variables.

Table 3. Pedroni Panel Cointegration Test

	Individual Intercept	Individual Intercept & Individual Trend
Panel v statistic	0,505010 (0,3068)	0,103243 (0,4589)
The panel ρ statistic	-0,652150 (0,2572)	0,282895 (0,6114)
The panel PP statistic	-4,355230 (0,0000)	-6,516146 (0,0000)
The panel ADF statistic	-4,124920 (0,0000)	-6,499010 (0,0000)
The group ρ statistic	2,035258 (0,9791)	2,477789 (0,9934)
The group PP statistic	-0,832295 (0,2026)	-4,154713 (0,0000)
The group ADF statistic	-1,022074 (0,1534)	-4,658355 (0,0000)

*The statistics are computed with 0,05 significance level

5.2.2. Larsson *et al.* Test

After utilizing Pedroni test, Larsson *et al.* test is carried out to test cointegration. As it is analyzed the 17 countries one by one by applying Johansen cointegration test, 10 of 17 countries accept the hypothesis test which claims that there is no cointegration. These countries are Austria, Belgium, Denmark, France, Germany, Italy, Netherlands, Norway, Spain and U.K. As it can be seen from these results, in developed countries usually there is no cointegration between these two variables. However, developing countries such as Czech Republic, Greece, Hungary, Poland, Slovak Republic, Sweden and Turkey reject the hypothesis.

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On the other hand, 15 of 17 countries also accept the hypothesis test which assumes there is at most one cointegration. Furthermore, Greece and Poland reject the hypothesis that there is at most one cointegration. When we combined the results obtained from two hypothesis tests, we can conclude that mostly in developing countries such as Czech Republic, Hungary, Slovak Republic, Sweden and Turkey there is cointegration. They have long run relationship between inflation and budget deficit.

As a result, Larsson *et al.* test indicates that there is no certain cointegration between these two variables. That result confirms the outcome of Pedroni test. Moreover, this test shows another fact that developing countries are more likely to have cointegrating series of price level and fiscal imbalances.

Table 4: Larsson *et al.* Test Results

Countries	r=0	r=1
Austria	0.3557	0.7318
Belgium	0.1594	0.6467
Czech Republic	0.0131	0.0580
Denmark	0.3436	0.2908
France	0.4989	0.9741
Germany	0.0851	0.2768
Greece	0.0000	0.0391
Hungary	0.0007	0.0739
Italy	0.1888	0.5582
Netherland	0.2717	0.3858
Norway	0.2423	0.6676
Poland	0.0062	0.0255
Slovak Republic	0.0300	0.3552
Spain	0.4937	0.4600
Sweden	0.0010	0.1984
Turkey	0.0004	0.7398
U.K.	0.6989	0.8722
Y_{LR}	0.0000	0.1402
Significance Level	0.05	0.05
N	17	17

6. Conclusion

In this study, 17 countries were selected by employing panel data in order to test long run inflation and budget deficit relation by using cointegration tests. Panel data were obtained by selecting annual consumer price index and budget deficit/GDP data between 1990-2008. Firstly, unit root test were applied in order to test series' stationarities. After testing unit root of series, cointegration tests were applied. Pedroni cointegration test resulted in that there was not a clear cointegration between series in the long run. In addition, Larsson *et al.* test showed that there is difference among developing and developed countries since it has been implemented one by one. As a result of Larsson *et al.* test, while developed countries have no long run relationship between inflation and budget deficit, in contrast, in most developing countries, cointegration exists between these variables.

In this study, we also focused on Turkey and other sixteen European countries in order to compare them. Turkey has a long term relationship among inflation and budget deficit between 1990-2008. Larsson *et al.* test proved this conclusion. However, although in some developing countries, cointegration between inflation and budget deficit exists, generally there is no cointegration between inflation and budget deficit, i.e. our test result pointed the fact that there not a standardized relationship between budget deficit and inflation in the long run. It changes with respect to the development level of countries or structural features of the economies.

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Regional Determinants of Income Inequality in Turkey

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Abstract

In this study, the 2003 Household Income and Consumption Expenditures Survey of Turkish Institute of Statistics is used to explore the structure of the income inequality in Turkey from a regional perspective. Mean income, coefficient of variation and Gini index are calculated for NUTS1 and NUTS2 regions while employing various equivalence scales. A variance decomposition analysis reveals that the inequality within the regions is significantly higher than the inequality between regions, and this motivates us to consider the effect of the dominant types of income within regions to understand the different inequality measurements amongst regions. Furthermore, Mincer wage regressions are performed for each NUTS1 region, and an enhanced regression is performed at the national level with regional dummies to understand if the regional differences in wages are the reason behind our findings.

1. Introduction

The distribution of income has always been a prominent theme, one which has caused great schisms in economic thought. The huge economic inequalities between individuals are criticized by those with more egalitarian views, and cherished by others who claim it is a necessary condition for economic growth. Whatever consequences economic inequality may imply, it is of essence to understand its causes and its structure; what it is correlated with and how it is distributed among the populace. In Turkey, the preoccupation with macroeconomic stability and inflation which dominated the last years of the twentieth century has fortunately decreased for the better part of the last decade, leaving enough room for the concerns about income inequality to surface. There exist heated debates and varying comments on the issue, but scant academic studies are published, which may shed

some light on the actual facts. This is especially true for the regional determinants of income inequality in Turkey. The aim of this study is therefore, to explore the nature of income inequality in Turkey with the most recent data available with a specific emphasis on regional effects. The results will hopefully help the decision makers to conclude whether regional policies in fighting inequality are necessary or not.

Income inequality is thoroughly studied by many economists, as it has very important consequences regarding social and economic life in a country. One need not think very long on why income inequality may be considered undesirable in the presence of numerous statistics reflecting the huge disparities between individuals' incomes in the world, which can be easily found in works such as World Development Report of the World Bank. While a considerably large fraction of the world population is living under an income value which is necessary for them not to starve, a very small fraction earns a disproportionately large chunk of the global income. The result is generally social and political tension in these countries, as well as a negative influence on economic growth.

The question which has been asked time and again is that if income inequality is a "necessary evil" for development. This may be a reasonable conclusion, given that the incentive mechanism that will motivate the more productive individuals to work at an optimal level will unavoidably cause some inequality, which may be justified if it serves to enriching the whole society as a result. In 1950's the view of Kuznets was very popular. Kuznets argued that the developing countries may experience a high degree of income inequality during the transition phase from an agriculture based economy to an industrialized one because of the differences in wages and income from agriculture, but in the long term this inequality would disappear as the country becomes fully developed. However, his intuition has been challenged by both new theoretical models which dropped the assumption of perfect credit markets (H. Kaelble & M. Thomas, 1991) and empirical findings from data gathered from many countries in the world (Deininger & Squire, 1998). Not was only the degree of high inequality sustained in many of the developing countries, but there were even numerous cases where inequality increased in the developed countries themselves. Hence, it is understood now that the problem of income inequality is not one that will disappear automatically as a result of economic growth and transition to an

industrial economy, but an important issue that must be dealt with by governments and international organizations.

Another important aspect of income inequality is that it may cause suboptimal allocation of skill and education expenditure in the presence of imperfect credit markets. It is seen in many countries that it is very hard for individuals from poorer families to find financing for education expenditures, since investment in education makes a poor collateral. As a result, talented individuals from poor families receive less than optimal education, resulting in a lower income for them, which in return cause the income inequality to persist between generations. One can therefore speak of an intergenerational transfer of income inequality, which may preserve or worsen the initial distribution of income in the society as time passes. The resulting suboptimal allocation of skill will directly affect the productivity of the country in general, and cause a low rate of real growth.

With the same issues in mind, the determinants of income inequality in Turkey have been studied recently with the 1987 and 1994 Household Income and Consumption Expenditure Survey data by TUSIAD (2000) and with the addition of 2002 data by Duygan and Guner (2006). In these studies, the focus has been more on the level of education of the household members, its size, and other demographic variables. On the other hand, although discussed to an extent in the report by TUSIAD, the regional effects on income inequality have not been examined thoroughly while checking for the effects of other significant variables. The publishing of the 2003 data which is more representative than the previous ones opens new possibilities to investigate the regional aspect of income inequality in a more rigorous manner.

Many have argued that there is a bias in Turkey against the less developed regions, and the people living in rural areas suffer from an interregional income inequality. It is generally claimed that the less developed regions have lower mean incomes, because less importance is given to them by the government, or less investments are attracted to these regions. Similar claims have also surfaced in other countries such as in the UK, and it has been shown that when checked for other variables, the regional bias is insignificant: the increase in the difference between mean incomes in the UK was not because of a rise in the

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difference between regional determinants, but the result of the clustering of more skilled individuals in certain regions (Monastiriotis, 2002). This paper aims to test if the same hypothesis is also true for Turkey by means of a regression analysis on wage income.

The paper is structured as follows: Section II provides a general overview of the income distribution in Turkey, along with an international comparison. In Section III, regional income distribution figures are presented, and a variance decomposition analysis is concluded to understand if inequality in Turkey is caused by differences within or between regions. Section IV examines the contribution of different types of income to the general income inequality. In section V, a regression analysis is performed to examine how wage income is determined by regional and non-regional factors to understand the considerable differences in mean incomes across regions. Section VI is where the conclusions from this study are summarized, and further questions worth investigation are proposed regarding the income distribution in Turkey.

2. Income Distribution in Turkey

The first study of the nation-wide income inequality in Turkey was undertaken by Bulutay, Ersel and Timur (1971) using 1968 data. Starting from this period, more studies have dealt with the determination of income inequality, which differ widely as a result of differences in data gathering processes and the methods used to calculate the inequality measures. As a result, it would not be fair to compare them, but to give an overview of the results is nevertheless considered to be beneficial.

Table 2.1. Findings of Previous Studies on Income Inequality in Turkey

Household Percentages	1963 (a)	1968 (b)	1973 (c)	1978 (d)	1983 (e)	1986 (f)	1987 (g)	1994 (h)	2002 (i)	2003 (j)
Lowest quintile	4.5	3.0	3.5	2.9	2.7	3.9	5.2	4.9	5.3	6.0
Second quintile	8.5	7.0	8.0	7.4	7.0	8.4	9.6	8.6	9.8	10.3
Third quintile	11.5	10.0	12.5	13.0	12.6	12.6	14.1	12.6	14.0	14.5
Fourth quintile	18.5	20.0	19.5	22.1	21.9	19.2	21.2	19.0	20.8	20.9
Highest quintile	57.0	60.0	56.5	54.7	55.8	55.9	49.9	54.9	50.1	48.3
Gini Index	0.55	0.56	0.51	0.51	0.52	0.50	0.43	0.49	0.46	0.42

Sources:

(a) 1963 - Çavuşoğlu & Hamurdan, Gelir Dağılımı Araştırması 1963, Ankara, 1966

(b) 1968 - Bulutay, Timur & Ersel, Türkiye Gelir Dağılımı, Ankara, 1971

(c) 1973 – SPI, Gelir Dağılımı 1973, Ankara, 1976

(d) 1978 - Celasun, M., Income Distribution and Domestic Terms of Trade in Turkey, 1986

(e) 1983 - Celasun, M., Income Distribution and Domestic Terms of Trade in Turkey, 1986

(f) 1986 - Esmer, Fişek & Kalaycıoğlu, Türkiye'de Sosyo-Ekonomik Öncelikler, Hane Gelirleri, Harcamaları ve Sosyo-Ekonomik İhtiyaçlar Üzerine Araştırma Dizisi, TUSIAD, İstanbul, 1986

(g) 1987 – SIS, 1987 Gelir Dağılımı, Ankara, 1990

(h) 1994 – SIS, 1994 Hanehalkı Gelir Dağılımı Anketi Sonuçları, Ankara, 1996

(i)-(j) 2002, 2003 - Duygan & Güner, Income and Consumption Inequality in Turkey: What role does education play?, 2006

It is important to state that the last two studies by TUSIAD and Duygan and Guner use disposable income per equivalent adult to calculate inequality measures using adult equivalence scales, whereas the previous studies only show the income distribution between households and not individuals. As a result, it can be said that the effect of the size of a household is ignored in these earlier studies. Despite the differences in methodology, a clear trend of reduction in income inequality can be observed throughout the last 40 years, although the change in the last 10 years is more ambiguous.

All of these findings about the state of income distribution in Turkey at various years show clearly that Turkey is suffering from a severe problem of income inequality in comparison to the rest of the developing and developed countries. The following table summarizes the latest Gini indices calculated for relevant countries, which is taken from Human Development Report 2007/2008 (UNDP, 2008)

It should be stated once again that the methods used in the studies in which the coefficients are calculated differ in methodology and timing, so strict comparisons between countries should be avoided. But the small changes caused by these cannot possibly account for the

fact that Turkey ranks as a very unequal country in comparison to EU and OECD countries.

Table 2.2. Gini Indices of Selected Countries as of 2008

Country	Gini	GDP per capita (PPP)
Japan	24.9	31,267
Czech Republic	25.4	20,538
Hungary	26.9	17,887
Germany	28.3	29,461
Austria	29.1	33,700
Bulgaria	29.2	9,032
Korea (Republic of)	31.6	22,029
France	32.7	30,386
Switzerland	33.7	35,633
Greece	34.3	23,381
Egypt	34.4	4,337
Spain	34.7	27,169
Australia	35.2	31,794
United Kingdom	36	33,238
Italy	36	28,529
India	36.8	3,452
Russian Federation	39.9	10,845
United States	40.8	41,890
Iran (Islamic Republic of)	43	7,968
Turkey	43.6	8,407
Mexico	46.1	10,751
China	46.9	6,757
Malaysia	49.2	10,882
Argentina	51.3	14,280
Brazil	57	8,402

Source: Human Development Report 2007/2008, UNDP, 2008

From another perspective, compared against countries like Mexico, Brazil and China which have similar GDP per capita numbers, Turkey stands out as a country where the income inequality is less. So it can be said that Turkey is in the middle of two clusters of countries in terms of income inequality: Those which have very high GDP per capita and low income inequality; and those which have low GDP per capita and high income equality.

In order to calculate the inequality measures in this study, many different equivalence scales have been used, but it is believed that the Oxford equivalence scale is the most relevant one for Turkey. In general, Oxford scale foresees a lesser degree of economies of

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scale resulting from shared consumption of income within a household, compared to other equivalence scales. The reasoning behind this choice stems from the lower mean income values of Turkey in comparison to EU countries. Eurostat equivalence scale, which is devised for use in these countries, assumes a higher degree of economies of scale. However, at low income levels, the consumption of private goods such as food is greater, whereas it is less likely for the average family to own commonly used items like household durables. Intuitively, the degree of economies of scale should be lower for Turkey. Hence the Oxford scale is considered to reflect the true picture more than others. Naturally, the best thing to do would be to conduct a separate study to devise a unique equivalence measure for Turkey, but it is beyond the scope of this study. The equation used to calculate the measure is as follows:

$$e = 1 + a(N^a - 1) + bN^c$$

N^a: number of adults; N^c: number of children; a=0.7; b=0.5

Individual incomes within the household are calculated simply by dividing the total disposable income of the household to the number calculated by the equivalence scale, and then assigned to each individual within the household equally. Here lies an implicit assumption that the income is divided equally between all household members. The explanations for other equivalence scales, as well as the recalculated statistics employing them are provided in the appendices. [1]

An individual is considered to be a child if he or she is younger than 15 years in urban areas, and younger than 12 in the rural areas. The justification for this choice is that the minimum age of an individual to actively participate in an economic activity is observed to be lower in the rural areas, especially among households in which farming and husbandry income dominates other kinds of income. The results when this assumption is dropped (i.e. all individuals are considered to be children if they are younger than 15 years) can be found in the appendices.

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[1] Please contact the author of the text to obtain the appendices.

Table 2.3. Comparative Statistics Calculated with Different Equivalence Scales

Equivalence Scale	Mean	St. Dev.	CV	Gini
HS	2.61	3.62	1.387	0.468
OECD	5.20	6.39	1.229	0.427
Eurostat	4.40	5.56	1.264	0.438
Oxford	3.52	4.60	1.307	0.449

Mean and standard deviation of yearly individual disposable income in billion liras)

Using the HICES 2003 data, the mean disposable income per equivalent individual, standard deviation, coefficient of variation (CV) and Gini indices are calculated using household size (HS), OECD, Eurostat and Oxford equivalence scales. As expected, the Gini index from the uncorrected data paints a much more optimistic picture than the others as it ignored the household size altogether. Coupled with the negative correlation between household size and total household income, the real inequality is hidden. Among the corrected indices, the ordering is also as expected. The direct household size correction exaggerates the inequality since it doesn't account for any degree of economies for scale. The other equivalence scales reflect less inequality as the assumed degree of economies of scale increases.

3. Regional Income Distribution

The figures provided in the previous section give a foresight into the situation in Turkey, but more information is revealed with the application of the same procedures for each region. Using the NUTS 1 classifications for regions, the results are presented in the table above. Unsurprisingly, Istanbul ranks first in both mean income and income inequality as measured by the Gini index. This can be explained by the provision of incentives for educated and skilled workers, as Istanbul is the largest metropolis of the country, and wholly industrialized. The inequality in income may hence be attributed to the differences in income of wage earners due to their productivity and education. However, although competing with each other for the last place in mean income, the three eastern-most regions rank also very high in terms of inequality. Surely, the argument devised for Istanbul is cannot be valid in these regions, where the degree of industrialization is close to nonexistent.

Table 3.1. Gini Indices of NUTS1 Regions and Inequality Rankings (Decreasing)

Code	NUTS1 Regions	Gini Indices				Inequality Ranking			
		HS	OECD	Eurostat	Oxford	HS	OECD	Eurostat	Oxford
TR1	İstanbul	0.481	0.438	0.448	0.460	1	1	1	1
TR2	Batı Marmara	0.370	0.354	0.355	0.360	12	11	11	12
TR3	Ege	0.414	0.377	0.385	0.396	8	9	8	8
TR4	Doğu Marmara	0.392	0.382	0.381	0.384	10	7	9	9
TR5	Batı Anadolu	0.453	0.416	0.425	0.435	2	2	2	2
TR6	Akdeniz	0.429	0.409	0.408	0.415	6	3	4	6
TR7	Orta Anadolu	0.395	0.381	0.377	0.383	9	8	10	10
TR8	Batı Karadeniz	0.437	0.399	0.414	0.423	4	4	3	3
TR9	Doğu Karadeniz	0.381	0.338	0.352	0.363	11	12	12	11
TRA	Kuzeydoğu Anadolu	0.434	0.394	0.407	0.418	5	5	5	4
TRB	Ortadoğu Anadolu	0.438	0.385	0.405	0.418	3	6	6	4
TRC	Güneydoğu Anadolu	0.424	0.375	0.390	0.403	7	10	7	7

Table 3.2. Comparative Statistics of NUTS1 Regions (Oxford)

Code	NUTS1 Regions	Statistics (Oxford)			Rankings		
		Mean	St. Dev	CV	Mean	CV	Gini
TR1	İstanbul	5.84	7.75	1.327	1	1	1
TR2	Batı Marmara	3.74	3.31	0.885	3	12	12
TR3	Ege	3.56	3.84	1.079	5	5	8
TR4	Doğu Marmara	3.72	4.93	1.325	4	2	9
TR5	Batı Anadolu	4.08	4.32	1.059	2	7	2
TR6	Akdeniz	3.46	3.80	1.098	6	4	6
TR7	Orta Anadolu	2.73	2.94	1.077	8	6	10
TR8	Batı Karadeniz	2.50	3.25	1.300	9	3	3
TR9	Doğu Karadeniz	3.09	2.76	0.893	7	10	11
TRA	Kuzeydoğu Anadolu	2.31	2.10	0.909	10	9	4
TRB	Ortadoğu Anadolu	2.15	1.91	0.888	11	11	4
TRC	Güneydoğu Anadolu	1.61	1.65	1.025	12	8	7

Examining the results further, Western Anatolia ranks second in both mean income and inequality, due to Ankara's inclusion in this region. Based on this finding and that of Istanbul, one might be tempted to conclude that high income implies high inequality. However, Western Marmara region invalidates this claim without any room for doubt: It is ranked the third in mean income, but it has the least income inequality among all NUTS1 regions in Turkey. As a result of these examples, it is clear that there isn't a clear pattern of negative or positive correlation between mean income and income inequality. To get a better picture, the statistics for NUTS2 regions are considered next.

Table 3.3. Gini Indices of NUTS2 Regions and Inequality Rankings (Decreasing)

Code	NUTS2 Regions	Gini Indices				Inequality Ranking			
		HS	OECD	Eurostat	Oxford	HS	OECD	Eurostat	Oxford
TR10	İstanbul	0.481	0.438	0.448	0.460	1	1	1	1
TR21	Tekirdağ	0.373	0.368	0.363	0.365	21	15	17	18
TR22	Balıkesir	0.367	0.338	0.347	0.354	24	21	24	24
TR31	İzmir	0.425	0.388	0.394	0.405	8	12	11	9
TR32	Aydın	0.398	0.359	0.37	0.380	15	17	16	15
TR33	Manisa	0.361	0.339	0.338	0.345	25	20	25	25
TR41	Bursa	0.406	0.406	0.400	0.401	13	6	8	11
TR42	Kocaeli	0.373	0.351	0.355	0.361	21	18	18	21
TR51	Ankara	0.450	0.417	0.422	0.432	5	4	6	5
TR52	Konya	0.393	0.365	0.371	0.379	16	16	15	16
TR61	Antalya	0.405	0.383	0.386	0.392	14	14	14	14
TR62	Adana	0.409	0.391	0.388	0.394	11	10	13	13
TR63	Hatay	0.445	0.427	0.423	0.430	7	2	5	6
TR71	Kırıkkale	0.372	0.346	0.348	0.356	23	19	23	23
TR72	Kayseri	0.408	0.401	0.394	0.398	12	8	11	12
TR81	Zonguldak	0.375	0.333	0.354	0.363	19	24	19	19
TR82	Kastamonu	0.415	0.385	0.395	0.402	10	13	10	10
TR83	Samsun	0.458	0.420	0.435	0.444	3	3	2	3
TR90	Trabzon	0.381	0.338	0.352	0.363	18	21	21	19
TRA1	Erzurum	0.422	0.389	0.397	0.406	9	11	9	8
TRA2	Ağrı	0.446	0.397	0.417	0.429	6	9	7	7
TRB1	Malatya	0.375	0.333	0.349	0.359	19	24	22	22
TRB2	Van	0.468	0.417	0.435	0.448	2	4	2	2
TRC1	Gaziantep	0.325	0.307	0.296	0.305	26	26	26	26
TRC2	Şanlıurfa	0.458	0.403	0.424	0.437	3	7	4	4
TRC3	Mardin	0.388	0.335	0.354	0.367	17	23	19	17

As we zoom into the NUTS2 level, the situation does not change at all. Again, we have sub-regions from the Western Marmara region, namely Tekirdag and Balikesir, which have high mean incomes but very low Gini indices show us that more income does not necessarily result in higher inequality. Van, Sanliurfa, Agri and Erzurum from the Eastern regions of Anatolia, on the other hand, seem to possess a very different outlook, where the average income is close to the national minimum, despite the extremely high amount of inequality. Erzurum and Agri, again Eastern regions, follow the previous three closely along with the surprising addition of Samsun from Western Black Sea region. Samsun was considered an unlikely candidate because of the high degree of industrialization. The data is telling us that there is a serious problem of low income in the Samsun region which has not been noticed before.

These unexpected results tell us sharply that the possible expectations on the economic situation in the Eastern regions of Turkey that may be reached by following Kuznets' line of thought, which would foresee a very poor population which earns more or less the same income, are fundamentally flawed. It is concluded that the least developed provinces of Turkey suffer both from a very low income and an extremely high degree of inequality. Then, the East must be dominated by very high stratification in terms of income.

Table 3.4. Comparative Statistics of NUTS2 Regions (Oxford)

Code	NUTS2 Regions	Statistics (Oxford)			Rankings		
		Mean	St. Dev	CV	Mean	CV	Gini
TR10	İstanbul	5.84	7.75	1.327	1	4	1
TR21	Tekirdağ	3.92	3.69	0.941	5	17	18
TR22	Balıkesir	3.59	2.92	0.813	7	23	24
TR31	İzmir	4.40	5.14	1.168	4	7	9
TR32	Aydın	3.50	3.04	0.869	9	21	15
TR33	Manisa	2.68	2.17	0.810	17	24	25
TR41	Bursa	3.87	3.98	1.028	6	11	11
TR42	Kocaeli	3.54	5.81	1.641	8	1	21
TR51	Ankara	4.84	4.97	1.027	2	12	5
TR52	Konya	2.82	2.48	0.879	15	20	16
TR61	Antalya	4.45	4.33	0.973	3	15	14
TR62	Adana	3.00	3.19	1.063	12	10	13
TR63	Hatay	3.16	3.86	1.222	10	6	6
TR71	Kırıkkale	2.83	2.73	0.965	14	16	23
TR72	Kayseri	2.66	3.08	1.158	18	8	12
TR81	Zonguldak	2.88	2.55	0.885	13	19	19
TR82	Kastamonu	2.77	4.35	1.570	16	2	10
TR83	Samsun	2.31	3.08	1.333	21	3	3
TR90	Trabzon	3.09	2.76	0.893	11	18	19
TRA1	Erzurum	2.38	2.04	0.857	20	22	8
TRA2	Ağrı	2.23	2.18	0.978	22	14	7
TRB1	Malatya	2.61	1.96	0.751	19	25	22
TRB2	Van	1.74	1.76	1.011	24	13	2
TRC1	Gaziantep	2.05	1.27	0.620	23	26	26
TRC2	Şanlıurfa	1.58	1.99	1.259	25	5	4
TRC3	Mardin	1.12	1.24	1.107	26	9	17

The underlying reasons must be further investigated, but in the absence of industrial sector in most of these cities, it is quite likely that the unequal distribution of land may be the cause of this, which would cause a direct inequality in farming incomes. The validity of this claim is to be tested on the next section, where the effect of different types of income on the general inequality will be considered. Providing some subsidies and economic incentives for new enterprises in the region has been undertaken in the past, which did not

prove to be very successful. The situation of the region compared to the rest of the country points towards the need for some fundamental solutions to be devised specific to the area.

To summarize the regional findings, there are certainly great differences in mean income between various parts of Turkey, but it is also seen that high inequality can be observed in some regions despite their low average income. This could mean that the overall inequality in Turkey may be caused more by inequality within the regions, rather than an interregional inequality. In order to test this claim, a variance decomposition analysis is attempted at NUTS1 and NUTS2 levels to get the results on Table 3.5.

The numbers tell us that about 80% of the inequality in Turkey is caused within the regions as opposed to only 20% resulting from differences among the regions. The direct result which may be derived is, that the efforts that focus on increasing the economic growth in less developed regions is not going to solve the problem of overall inequality in Turkey. If the main aim is to reduce the income inequality in Turkey, specific policies within regions must be pursued instead of trying to help poorer regions to catch up with others. Therefore, it can be claimed that the income inequality problem in Turkey is not regional in nature, although certain regions are clearly suffering more from it. But if regional differences in average income levels are not the answer to the question where the inequality originates from, then what may be the cause? One striking difference between the most equal and unequal regions is the predominant type of income earned by the households in these regions as will be shown in the next section, which motivates us to examine the contribution of different types of income to the overall income inequality.

Table 3.5. Results of Variance Decomposition Analysis

Equivalence Scale	NUTS1		NUTS2	
	Between	Within	Between	Within
HS	0.743	3.220	0.764	3.190
OECD	1.220	5.540	1.250	5.500
Eurostat	1.130	4.830	1.160	4.790
Oxford	0.945	4.020	0.972	3.990
HS	18.7%	81.3%	19.3%	80.7%
OECD	18.0%	82.0%	18.5%	81.5%
Eurostat	19.0%	81.0%	19.5%	80.5%
Oxford	19.0%	81.0%	19.6%	80.4%

4. Contribution of Different Types of Income to Income Inequality

The individual incomes from the 2003 HICES data are decomposed into many different channels they originate from. However, for the purpose of this study, they will be aggregated under five distinct types of income, which differ in nature. The wage income is the sum of all salaries and wages from an individual's full-time and part-time jobs, and represents the return of to labor. As expected, it has the largest share among the five types of income, singly constituting the 42.7% of the total income in the country. Entrepreneurship income is the earnings of small and large enterprises, which can range from a small shop to a whole company. Agricultural income is the income generated by an individual from the farms and livestock he or she owns, along with any rent from tenants. [2] The interest and returns (henceforth called interest), is the sum of all income derived directly from wealth. It consists of interest earnings, dividends, rent from real estate, profits from arbitrage in the stock and exchange markets and so on. The last item is transfer payments, which primarily consists of the retirement benefits of previous workers. These transfers do not come solely from the government, and some other transfers like scholarships from independent institutions, or money transfers from abroad are also included. However, the inter-household transfers of income are not captured in this item, which is added or subtracted separately in the calculation of yearly disposable income of a household by the Turkish Institute of Statistics.

It is worth mentioning, that the relative sizes of types of income have undergone a phenomenal transition in the past years. Wage income constituted only 24.1% percent of the total income in 1987, and 35.5% in 1994 (TUSIAD, 2000). This rapid growth implies a distribution which is depends less on wealth in the future if the trend does not change, as it means that the wage income which is a flow, and which does not depend on wealth, is dominating the other types of income, which are more dependent of the wealth; thus reducing the distortionary effect of wealth. The entrepreneurship income has decreased significantly from 40.9% in 1987 and 35% in 1994. Similarly, agriculture income has also

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[2] It should be noted that the earnings of agricultural workers are not listed under this item.

fallen from 24% to 14.9%, and then to the current 9.4%. This reflects the fact that the share of agriculture in the economy has decreased substantially as a result of the industrialization process. This may mean that the unequal distribution of land among people is less relevant as an issue, since its contribution to the general inequality is no more as significant as in the past. Bulutay, Timur and Ersel have identified the agriculture income as an important source of income inequality with the data of 1968, which is less likely as of 2003. However, the earnings of agricultural workers are not included in this, so it is possible that we are not seeing the complete picture. More importantly, despite the low share of the agricultural sector in total income, 36% of the working population is still employed in this low-return sector, which adds to the total inequality. Compared to the single digit numbers in developed countries, this situation is guessed to cause a significant setback in total productivity of the country in addition to the distortion to the income distribution.

The share of transfer income has increased substantially from 9.8% in 1987 and 10.6% in 1994. This is to be expected, as retirement benefits should have a close positive correlation with the changes in wage income. Further increases in the future could prove to be detrimental, but the new legislation which has changed the minimum age of retirement to 65 years will most likely prevent such an occurrence. Lastly, the ratio of interest income has increased from 1.3% in 1987 and 4% in 1994 to the current 6.2% level. And before concluding this part, it should be noted that these relative ratios may have been influenced by the 2001 currency crisis. The earliest data ranges from January 2002 to December 2003, so it would be wrong to discard this possibility altogether. Examination of the future data published by Turkish Institute of Statistics (TUIS) can show if these trends reflect a clear pattern, or are just side effects of the particular economic situation in Turkey at 2002-2003.

In Section III, it was claimed that the different patterns in mean income and income distribution could be possibly linked to differences in shares of types of income in specific regions. To test this hypothesis, the statistics on Table 5.1 are obtained.

Firstly, the metropolitan regions of Istanbul, Ankara and Izmir[3] were all found to possess high mean income as well as high income inequality. When we look at the types of income in these regions, we immediately see that the percentage of interest is at its highest level among all NUTS2 regions: Istanbul, Izmir and Ankara rank first, second and fourth respectively. We also see nonexistent agricultural income coupled with a high wage income rate, portraying the developed nature of the production and service sectors. Ankara differs from the other two, in which it has the second highest ratio of transfer earnings in the country, which is reflected as a very low ratio for the entrepreneurship income.

Table 5.1. Means and Relative Shares of Types of Income among NUTS2 regions

Code	NUTS2 Regions	Mean Individual Income						Percentage of Total				
		Wage	Entr.	Agri.	Interest	Transfer	Total	Wage	Entr.	Agri.	Interest	Transfer
TR10	İstanbul	1.89	0.86	0.01	0.39	0.64	3.79	49.9%	22.6%	0.3%	10.3%	16.9%
TR21	Tekirdağ	0.90	0.34	0.71	0.20	0.54	2.69	33.6%	12.7%	26.2%	7.5%	20.0%
TR22	Balıkesir	0.86	0.55	0.29	0.13	0.62	2.45	34.8%	22.5%	11.9%	5.4%	25.3%
TR31	İzmir	1.34	0.53	0.06	0.28	0.75	2.97	45.2%	18.0%	2.1%	9.4%	25.3%
TR32	Aydın	0.85	0.53	0.32	0.14	0.57	2.40	35.2%	22.0%	13.5%	5.7%	23.6%
TR33	Manisa	0.60	0.32	0.43	0.07	0.43	1.85	32.3%	17.3%	23.2%	3.7%	23.4%
TR41	Bursa	1.14	0.65	0.31	0.09	0.43	2.62	43.6%	24.8%	11.8%	3.6%	16.3%
TR42	Kocaeli	1.12	0.65	0.02	0.09	0.50	2.39	46.9%	27.2%	1.0%	3.9%	21.0%
TR51	Ankara	1.63	0.49	0.02	0.23	0.82	3.19	51.0%	15.5%	0.6%	7.1%	25.8%
TR52	Konya	0.61	0.45	0.41	0.05	0.39	1.91	31.9%	23.5%	21.4%	2.8%	20.4%
TR61	Antalya	1.04	0.78	0.58	0.15	0.51	3.05	34.1%	25.5%	19.0%	4.9%	16.6%
TR62	Adana	0.74	0.43	0.38	0.09	0.40	2.05	36.0%	21.2%	18.7%	4.5%	19.6%
TR63	Hatay	0.74	0.65	0.25	0.11	0.38	2.12	34.7%	30.4%	12.0%	5.1%	17.9%
TR71	Kırıkkale	0.79	0.35	0.17	0.11	0.49	1.91	41.6%	18.3%	9.1%	5.6%	25.5%
TR72	Kayseri	0.58	0.49	0.22	0.06	0.44	1.79	32.2%	27.1%	12.4%	3.6%	24.8%
TR81	Zonguldak	0.83	0.28	0.11	0.06	0.68	1.96	42.6%	14.0%	5.7%	2.9%	34.8%
TR82	Kastamonu	0.64	0.41	0.36	0.05	0.48	1.94	33.1%	20.9%	18.3%	2.7%	24.9%
TR83	Samsun	0.51	0.30	0.33	0.06	0.34	1.55	33.1%	19.6%	20.9%	4.2%	22.2%
TR90	Trabzon	0.82	0.56	0.22	0.07	0.44	2.10	39.1%	26.5%	10.4%	3.2%	20.7%
TRA1	Erzurum	0.43	0.26	0.55	0.02	0.34	1.60	26.9%	16.0%	34.6%	1.5%	21.0%
TRA2	Ağrı	0.70	0.38	0.19	0.04	0.14	1.45	48.5%	25.9%	13.3%	2.8%	9.6%
TRB1	Malatya	0.86	0.36	0.17	0.05	0.27	1.70	50.3%	21.1%	9.9%	3.0%	15.7%
TRB2	Van	0.56	0.23	0.13	0.03	0.14	1.09	50.9%	21.2%	11.5%	3.1%	13.2%
TRC1	Gaziantep	0.77	0.26	0.03	0.03	0.20	1.29	59.6%	20.0%	2.5%	2.3%	15.6%
TRC2	Şanlıurfa	0.42	0.14	0.28	0.03	0.12	0.98	42.7%	14.4%	28.3%	2.9%	11.7%
TRC3	Mardin	0.36	0.08	0.21	0.02	0.04	0.70	51.1%	11.7%	29.6%	2.2%	5.5%

This is most likely caused by its capital status: the retired bureaucrats may account for that difference. The pattern which is observed here is the old industrial centers of the country

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[3] Izmir has a lower degree of income inequality compared to Istanbul and Ankara, but it still has a higher than average inequality, and shares the same income dynamics.

becoming commercial and financial centers. They attract the wealthy people, and this fact is reflected in the high returns income. They are also places where there is great inequality in the distribution of income as a result.

Table 5.2. Means and Relative Shares of Types of Income among NUTS1 regions

Code	NUTS1 Regions	Mean Individual Income (Unmodified)						Percentage of Total				
		Wage	Entr.	Agri	Interest	Transfer	Total	Wage	Entr.	Agri.	Interest	Transfer
TR1	İstanbul	1.89	0.86	0.01	0.39	0.64	3.79	49.9%	22.6%	0.3%	10.3%	16.9%
TR2	Batı Marmara	0.88	0.45	0.49	0.17	0.58	2.56	34.2%	17.7%	18.9%	6.4%	22.7%
TR3	Ege	0.95	0.46	0.26	0.17	0.59	2.43	39.1%	18.9%	10.7%	6.9%	24.3%
TR4	Doğu Marmara	1.13	0.65	0.17	0.09	0.46	2.51	45.1%	25.9%	6.9%	3.7%	18.4%
TR5	Batı Anadolu	1.25	0.48	0.17	0.16	0.66	2.71	46.1%	17.5%	6.1%	6.0%	24.3%
TR6	Akdeniz	0.82	0.60	0.40	0.11	0.42	2.35	34.9%	25.3%	17.0%	4.8%	18.0%
TR7	Orta Anadolu	0.66	0.43	0.20	0.08	0.46	1.84	36.1%	23.4%	11.0%	4.4%	25.1%
TR8	Batı Karadeniz	0.60	0.32	0.29	0.06	0.44	1.70	35.3%	18.6%	16.9%	3.6%	25.6%
TR9	Doğu Karadeniz	0.82	0.56	0.22	0.07	0.44	2.10	39.1%	26.5%	10.4%	3.2%	20.7%
TRA	Kuzeydoğu Anadolu	0.56	0.31	0.39	0.03	0.25	1.53	36.2%	20.3%	25.4%	2.0%	16.1%
TRB	Ortadoğu Anadolu	0.70	0.29	0.15	0.04	0.20	1.38	50.5%	21.2%	10.6%	3.0%	14.7%
TRC	Güneydoğu Anadolu	0.51	0.16	0.18	0.03	0.12	1.00	51.0%	16.2%	18.1%	2.5%	12.1%

The second group consists of regions with very high mean incomes, but very low inequality. Balikesir and Tekirdag in the Western Marmara region and Antalya in the Mediterranean region are the best examples. Their unifying characteristics are the low wage income ratios and relatively high interest income ratios. In the cases of Antalya and Tekirdağ, the agriculture incomes are also relatively high. For Balikesir, this is replaced by a high transfer income ratio. Are these cities special cases, or are high mean incomes possible to achieve without generating too much inequality? The Western Marmara and the Mediterranean regions seem to offer such a combination. It may be caused by a more egalitarian distribution of property, or as a consequence of their special geographical and economic conditions. But one thing is certain: High mean income does not have to necessarily imply high income inequality.

The last distinct group to be considered consists of regions that have the both low mean income and high income inequality. Sanliurfa, Agri, Erzurum and Van, all in the eastern part of the country, belong to this group. Erzurum is a unique case where wage, entrepreneurship and interest income ratios are at the national lows, whereas the ratio of agriculture income is the highest, followed by a slightly above average transfer payments. The transfer part may be explained by the migration of youth to other cities, leaving a

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higher than average ratio. The agriculture income reflects the backbone sector of the region, which is husbandry. The high degree of inequality in this region may be caused by this, as the income from husbandry is directly related to the size of the livestock one has, hence their wealth.

Sanliurfa, Agri and Van, on the other hand, possess very low interest and transfer payments ratios, but high wage income ratios. Sanliurfa has a higher agriculture income ratio than the others, and the others have a higher wage income ratio in return. However, when one considers the percentages of population that are actively working in the agricultural sector, they do not really differ. This may be reflecting the fact there are more agricultural workers or tenants in Agri and Van. Whatever the structure, these cities are facing extreme amounts of income inequality, and they are united in their reliance on agricultural sector as the dominant economic activity. Perhaps the finding that agricultural enterprise income generates high income inequality which was true for whole Turkey in 1968 is still relevant for these regions of Turkey because of the lack of industrialization. The other regions do not share the same distribution of types of income ratios, so the claim that the types of income resulting in such an economic outlook seems like a plausible scenario.

The last case worth studying is Samsun. Despite its recognition as an industrialized region, the mean income is extremely low, whereas the income inequality is the third highest in Turkey. It is also seen that agricultural and transfer income ratios are very high in comparison to the wage income ratio, which is the fifth lowest nationwide. This is certainly in contradiction with the image of an industrialized region. This can be because of the fact that the Samsun region is still dominated by agriculture as its dominant economic activity. Whatever the underlying cause may be, it is seen that investigating and solving the problem in Samsun should be prioritized by the decision makers who aim reducing income inequality.

The rest of the country consists of two main groups of regions, which can be generalized into two stereotypes: industrialized and agrarian. The more industrialized ones benefit from a higher mean income, but suffer from higher income inequality. The agrarian ones are just

the opposite. In any case, these regions are not extreme cases like the previous examples, and do not need separate analyses.

To summarize the outlook into the regions of Turkey, one can arrive at the conclusion that the regions that have similar income type distributions exhibit similar mean incomes and Gini indices. Moreover, the interpretation of Kuznets regarding income inequality fails to wholly explain the situation in Turkey. If we consider the dependent variable to be income inequality, and the independent variable to be the rate of industrialization, we do not get the concave second degree curve Kuznets has predicted, as it can be seen in the extreme examples of the industrialized Istanbul region and the non-industrialized eastern regions, which have the highest inequality rankings, despite what Kuznets would have predicted.

In order to further analyze the aggregated effect of income types on the general income distribution of the country, we are going to perform kernel density estimations on total income before and after the addition of one type of income at a time, and calculate their similarities by the overlapping areas, as well as calculating Gini indices to understand their contribution to the overall income distribution. The Gini indices are presented on Table 5.3.

Although the direct removal of an income type altogether from the total income distribution is intuitively not a good way to measure its effects on the distribution - since the nonexistence of one type of income would make the economic agents earn an income in another field - the results are quite intriguing. The great increase in inequality when wage income, agriculture income or transfer payments are removed is expected. But the very small change in the absence of entrepreneurship income implies that it is a major cause of inequality, since even though its removal leaves many entrepreneurs and their families without a significant income, it still doesn't significantly increase the Gini index of the total distribution. The interest income, on the other hand, is clearly a distortionary type of income, since its complete removal results in a more equal distribution. Hence, we may conclude that entrepreneurship and interest income create inequality in the income distribution, which is only to be expected, since these types of income are directly correlated with the initial distribution of wealth in the society.

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Table 5.3. Change in Gini Index by Removal of Certain Types of Income

(Oxford)	Gini	Contribution
Total Disposable Income	0.449	
Without Wage Income	0.583	0.134
Without Entrepreneurship Income	0.462	0.013
Without Agriculture Income	0.500	0.051
Without Interest Income	0.436	-0.013
Without Transfer Income	0.502	0.053

The results of the kernel density estimations and the following evaluation of the overlapping regions of the altered distributions with the original distribution are presented on Table 5-4. The column labeled "total" gives information of the total overlap, whereas the following three columns makes it possible to understand which parts of the distribution were affected more by the removal. All types of income except interest income, cause great changes in the distribution, since they account for the most of the total income in the country. It is observed that removal of agriculture income affects the upper part of the distribution very little, while the converse is true for interest income. For the entrepreneurship income, the upper and the lower parts of the distribution change remarkably, while the middle part remains more or less the same as it was. But perhaps the most surprising finding is that the effect of the removal of transfer income on the upper part of the distribution. Contemporary literature on transfers suggests that the transfer payments in developed countries generally remain confined to the middle class, where the upper classes do not benefit from them. The results imply that either the upper class is very small in Turkey, which is hard to believe with Istanbul being the fourth city in the world ranking of billionaires, or that upper or middle-upper classes still benefit from transfer payments. This is an interesting finding, and further studies on the effects of transfer payments in Turkey might reveal previously unknown facts.

Table 5.4. Percentage of Overlap of Kernel Density Estimates

Overlap of Kernel Density Estimates				
	Total	$< \mu - \sigma$	Between	$> \mu + \sigma$
Without Wage Income	55.2%	30.8%	68.1%	61.8%
Without Entrepreneurship Income	82.0%	59.1%	91.0%	71.6%
Without Agriculture Income	81.9%	51.5%	89.1%	93.8%
Without Interest Income	92.6%	93.5%	94.7%	82.1%
Without Transfer Income	75.1%	51.0%	83.5%	75.1%

5. Difference in Determinants of Wage Income between Regions

The total wage income in Turkey accounts for only 42.7% of the total income earned by households in Turkey. This is a very low rate in comparison to the rates of 60-70% which is usual for developed and developing countries. Still, it is the dominant type of income and any insight into how it is distributed is crucial in understanding the dynamics of income distribution in Turkey. Furthermore, it should be noted that retirement benefits form the bulk of the transfer payments, which is basically an intertemporal transfer of income for the wage earners. If we consider the transfer payments to be a direct extension of the wage income, the wage income can account for up to 62.7% of the total income. In general, the literature in income distribution sees wage income as an equalizing factor in comparison to the other types of income, which are often the byproducts of the initial distribution of wealth and property in the society. As a result, the analysis of determinants of wage income may shed some light into how income inequality is generated, or can be reduced.

The methodology to determine the determinants of wage income is as follows: In the first stage, the traditional Mincer regression (1974) of the logarithm individual wages of full-time employees on gender, education, experience and experience squared will be performed on the national scale. The same regression shall be repeated for all NUTS1 regions to observe the differences in return on education and experience, as well as the gender gap and the depreciation of experience, which is manifested as the coefficient of experience squared being negative. Lastly, an enhanced version of the Mincer wage regression shall be used, in which the working sector and position of the individual are also checked for, along with dummy variables for NUTS1 and NUTS2 regions. The functional forms are as follows:

$$ln(Y) = \beta_o + \beta_1 GEN + \beta_2 EDUC + \beta_3 EXP + \beta_4 EXPSQ + \varepsilon$$

$$ln(Y) = \beta_o + \beta_1 GEN + \beta_2 EDUC + \beta_3 EXP + \beta_4 EXPSQ + \Sigma \lambda_i SEC_i + \Sigma \alpha_j POS_j + \Sigma \gamma_k REG_k + \varepsilon$$

GEN: Gender; EDUC: Education; EXP: Experience; EXOSQ: Exp. Squared; SEC: Sector; POS: Position; REG: Region; ε : Error Term

The gender variable is positive, which means that on the average, a male earns more than a female. This gender gap, which proves to be significant all over the world, is also significant for all NUTS1 regions with the exception of Northeastern and Eastern Anatolia regions. Although comparing the coefficients between the regions is not justifiable, comparing their ratios to mean incomes of the region is meaningful. The Istanbul region has one of the lowest coefficients, despite its status as the region where mean income is the highest. This shows that the gender gap is relatively smaller in Istanbul in comparison to other NUTS1 regions in Turkey. Eastern Black Sea region, however, exhibits a very large gender gap: It is nearly two times the national average, although its mean income is slightly below the national mean.

When we look at education as measured in years spent, the coefficient is positive in every region. However, it is seen that the return of education to an individual's wage income is lower in regions like Istanbul and Eastern Marmara, where the average education of people in the region is also high. On the other hand, the return on education is much higher in Western and Eastern Black Sea regions, as well as Northeastern and Southeastern Anatolia. The underlying cause may be the concentration of educated people in these regions. In Istanbul, where the average education is much higher than the rest of the country, the clustering of educated individuals may create competition between them, lowering their wages. In contrast, in regions where highly educated people are more uncommon, their income also rises.

Table 6.1. Results of Regression 1

Code	NUTS1 Regions	Const	GEN	EDUC	EXP	EXPSQ	R2
TR	Turkey	19.470	0.483	0.141	0.086	-0.0014	32.4%
TR1	İstanbul	20.454	0.345	0.117	0.062	-0.0010	28.5%
TR2	Batı Marmara	19.453	0.567	0.142	0.072	-0.0013	28.3%
TR3	Ege	19.312	0.561	0.143	0.091	-0.0016	33.9%
TR4	Doğu Marmara	19.717	0.447	0.123	0.084	-0.0014	25.4%
TR5	Batı Anadolu	19.386	0.529	0.149	0.081	-0.0013	35.0%
TR6	Akdeniz	19.080	0.570	0.141	0.107	-0.0018	35.3%
TR7	Orta Anadolu	19.665	0.334	0.125	0.086	-0.0013	32.8%
TR8	Batı Karadeniz	19.210	0.409	0.154	0.097	-0.0015	37.5%
TR9	Doğu Karadeniz	18.140	0.905	0.187	0.111	-0.0018	44.7%
TRA	Kuzeydoğu Anadolu	19.595	*0.045*	0.158	0.096	-0.0016	43.3%
TRB	Ortadoğu Anadolu	19.638	*0.166*	0.139	0.080	-0.0009	39.9%
TRC	Güneydoğu Anadolu	19.421	0.344	0.145	0.086	-0.0012	45.0%

(All coefficients are significant at 0.01 significance level except β_1 for TRA and TRB)

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Return on experience exhibits a similar pattern which was observed in the education case. Istanbul and Western Marmara regions have the lowest returns to experience, where it is the highest in Eastern Black Sea region. This might once again be caused by the clustering of more experienced people in regions such as Istanbul, instead of less developed regions. The higher amount of competition where experienced people gather could cause this difference. The magnitude of the depreciation of experience, which is the coefficient of experience squared, is negative in all regions as expected in a Mincer wage regression, and its magnitude is the lowest in Istanbul. There is a very high correlation between experience and experience squared, which is not surprising since a wage which increases faster with experience must also fall faster as the individual ages, if they are expected to have a lower income when they retire.

All these findings show that returns on human capital such as education and experience is lower in regions of the country, where the concentration of skilled individuals is higher, and the converse is true for regions with fewer highly educated or experienced people. The gender difference on the other hand is not directly correlated with returns on human capital, but still if only the extreme regions Istanbul and Eastern Black Sea are considered, one might argue that the gender gap is smaller in regions where return on education and experience are lower, which was argued to be the result of the clustering of skilled individuals in these regions. The gender gap is most likely to be affected by some socioeconomic factors that are unobservable in our current regression.

Taking our examination one step further, we are going to add the dummy variables for the working sector, the position in work and NUTS1 and NUTS2 regions. The rationale is to reduce the omitted variable bias in our regression analysis, and to check the significance of regions in the determination of the wage income. The results are presented on Table 6.2.

To avoid perfect multicollinearity, one dummy from each group of dummies is dropped. The base case is a female who is an unqualified worker in the household service sector, and lives in Istanbul. The results of the second regression, when compared with the unaltered Mincer regression, show that most the effect of more profitable positions and

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sectors were included in the coefficients of the gender, education and experience variables. The return on education and experience are not as high as previously determined, but it is important not to forget that working in a better position or a lucrative sector is also a byproduct of high education or experience. The gender gap is also found out to be smaller, which is most likely due to the small representation rate of women in high wage sectors and positions.

The dummies for NUTS1 regions are both statistically and economically significant. One striking observation is that the Western Marmara region has the second lowest dummy coefficient, although it ranks the third in individual mean income. The coefficients of the three eastern regions are on the same level as most of the other regions of Turkey, like the West Anatolia which contains Ankara. Furthermore, they are even higher than the coefficient of the Ege region, which houses Izmir. This suggests that the differences in the mean income levels of individuals across regions are not caused by lower wages for similar individuals in these regions. On the contrary, the same man in Southeastern Anatolia earns more than his equivalent in Western Marmara. This means that there is no "bias" against the poorer regions in terms of lower wages. The difference in mean incomes across regions arises because of the asymmetrical distribution of education, experience and high income sectors and occupations between regions. The individuals in the eastern regions are not poorer because they get a lower wage, but because they mostly have to work in the field of agriculture, and because they have lower education.

Repeating the same process with NUTS2 regions, we again get the same results.[4] The previous conclusion is repeated once again, as the coefficient of Balikesir is the lowest in the whole country, despite its relatively high mean income level. Low income regions like Gaziantep, Sanliurfa and Mardin have relatively normal coefficients in comparison to the national average. Once again, one can conclude that the difference in mean incomes in different regions can be explained by the sectors and positions available for workers, and their education levels.

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[4] Please contact the author of the text to obtain the table of the regression results for the NUTS2 regions which is omitted to save space.

Table 6.2. Results of Regression 2 with NUTS1 Regions

	COEFFICIENT
Gender	0.384***
Education	0.0993***
Experience	0.0806***
Experience Squared	-0.00127***
NUTS1 Regions:	
Batı Marmara	-0.507***
Ege	-0.436***
Doğu Marmara	-0.361***
Batı Anadolu	-0.383***
Akdeniz	-0.425***
Orta Anadolu	-0.371***
Batı Karadeniz	-0.402***
Doğu Karadeniz	-0.539***
Kuzeydoğu Anadolu	-0.380***
Ortadoğu Anadolu	-0.370***
Güneydoğu Anadolu	-0.378***
Sectors:	
Service	0.369***
Public & Administrative	0.580***
Education	0.467***
Finance	0.505***
Agriculture	-0.301***
Industrial	0.544***
Positions:	
Manager	0.329***
Professional	0.425***
Service	0.204***
Agriculture	-0.218***
Arts	0.114***
Technician	0.266***
Constant	19.72***
Observations	17622
R-squared	0.453

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

6. Conclusion

In this study, it was aimed to understand the structure of income inequality in Turkey better, specifically from a regional perspective. The results of the previous studies show that the income inequality has reduced over the past 40 years, but has been stuck on the same level during the nineties and the first 3 years of the 21st century. The indices calculated in this study show that there has been no change in this outlook in 2003. It is also seen that Turkey has a much more unequal distribution of income compared to several

OECD and EU countries, whereas it is less unequal than countries that have similar income per capita. Further analysis has revealed that mean income and income inequality varies wildly between NUTS1 and NUTS2 regions, and there is no clear pattern between these two indicators.

The calculation of the percentages of types of income in each region has revealed that the levels of mean income and income inequality in a region may be explained by the shares of different types of income, hence by the economic activities in those regions. The historical trends in the change of relative shares of these types of income has also shown that wage income is becoming the dominant type of income, which is found to be a more equalizing type of income in comparison to others, which implies that the continuation of this trend may decrease income inequality in general on the national scale.

A Mincer wage regression executed at each NUTS1 region also revealed that the returns to human capital such as education and experience, as well as the gender gap, differ across regions, where the clustering of educated or skilled individuals implies lower returns to the respective qualities most likely because of the competition. Also, it is found out that the coefficients of regional dummies do not explain the considerable differences between the mean incomes of different regions. On the other hand, the sectors and positions available for wage-earners to work in, and the average education level in the regions are able to explain these differences. This finding is similar to the case in the UK as examined by Monastiriotis, where the increasing gaps between the regions were caused by movement of more educated individuals to certain regions, despite the trend of decrease in regional dummies, differences between the coefficients of education and the gender gaps.

This study was aimed to be an exploratory study, and several questions worth investigation on income inequality in Turkey have arisen as a result of the process. The patterns on how mean income and income inequality accompany each other, and what the underlying reasons may be, still remains as a question worth consideration. Our findings show that the dominant economic activities in these regions may explain the patterns of income inequality.

Regions like Samsun and most of the eastern regions are found out to have extremely high inequality ratings, and the decision makers may want to focus on this issue. Income inequality is regarded as a serious problem if not in moderation, and if simultaneously accompanied by a low mean income, which directly translates into a considerable percentage of the population in a region living under the starvation and poverty lines. Such socio-economic deprivations are known to cause other social problems, and may be detrimental for economic growth of the country in the long term.

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Who Cares? Determinants of the Fathers' Use of Parental Leave in Germany

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Abstract

The aim of this study is the identification of socio-economic and workplace-related determinants of the fathers' use of parental leave after the introduction of the Parental Allowance and Parental Leave Act in Germany in 2007. Using the German Microcensus as a data basis and a logit model as a method, it is estimated which factors influence the fathers' use of parental leave. The findings are partly consistent with German studies that have been conducted under the former family policy regime and partly with Scandinavian studies.

1. Introduction

Since the 1980s, several European countries have established some kind of paternity leave or have reserved a part of the parental leave for the parent who does not take the lion's share of the leave, which is the father in most cases. In Germany, from 1996 till 2006, the Federal Child-Raising Allowance Act (Bundeserziehungsgeldgesetz, BErzGG) was in place. According to this law, mothers and fathers could share a child-raising leave for up to three years after the birth of a child, while receiving a means-tested benefit if the income was below a certain threshold. However, take-up rates of fathers stagnated between 2.1 and 3.3% (Statistisches Bundesamt, 2009). Meanwhile, the total fertility rate remained between 1.33 and 1.37 in the past decade, and therefore substantially below the replacement level of 2.1 children per women on average. At the same time, the female employment rate increased from 55.3% in 1996 to 62.2% in 2006, but stayed at an average level compared to other EU countries (EU-27 average: 57.3% in 2006, Eurostat, 2009). But due to several extensions of the child-raising leave, the mothers' actual number of working hours even

decreased during the 1990s, while the mothers on leave were counted as employed in the national statistics (Merz 2004).

The replacement of the BErzGG by the Parental Allowance and Parental Leave Act (Bundeselterngeld- und Elternzeitgesetz, BEEG) in 2007 implied a strong paradigm shift with regard to German family policy. The BErzGG promoted the male-breadwinner family model. On the contrary, the aim of the BEEG is that a parent should neither be dependent on her or his spouse nor on governmental support in the long run. According to this law, which is geared towards the Swedish model of family policy, parents can share 14 months parental leave among each other, while receiving a parental benefit of 67 %[1] of the monthly net income. However, following the "use-it-or-lose-it"-system, two months are reserved for the other parent (usually the father). One result which is already visible is that take-up rates of fathers increased sharply to over 20 % in 2009 (see figure 1).
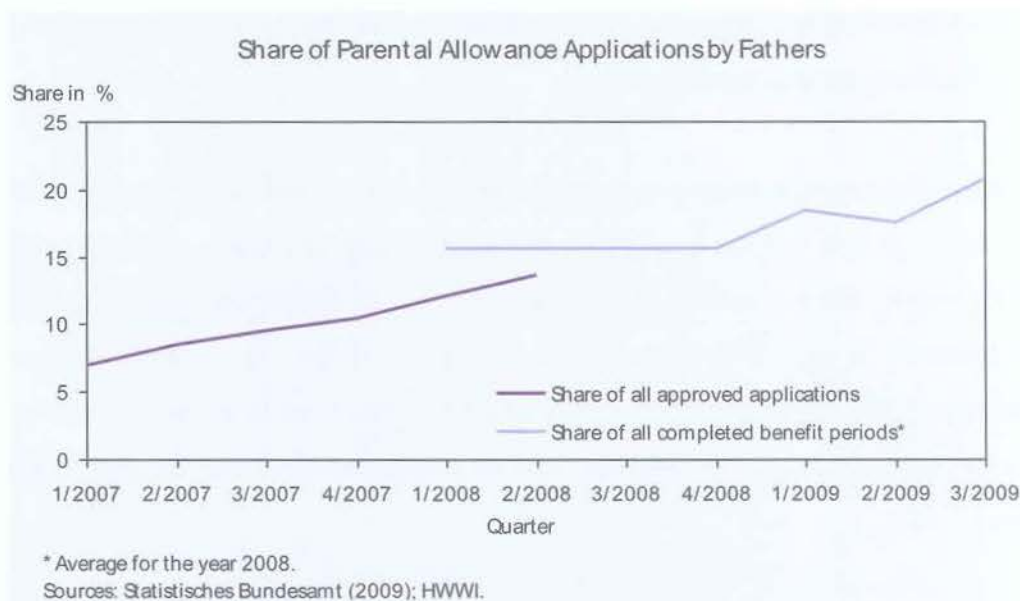

Figure 1 Share of Parental Allowance Applications by Fathers[2]

In the year 2007, which is explored in this study, more than 60,000 fathers applied for parental leave with parental benefit (Statistisches Bundesamt, 2008a). About two thirds took parental leave for a period of two months. Obviously, these are the months that are

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[1] Minimum amount of allowance for all: 300 Euros, maximum: 1,800 Euros.
[2] Change in the official statistical records in 2008/2009: Parental Allowance is no longer recorded in the application month but in the month of the end of the benefit period.

reserved for the partner and that would be lost otherwise. About one fifth (21.2%) took between three and eleven months of parental leave, and 17.6% took twelve months which is the maximum amount of months a parent of a two parent household is entitled to.

If parents share the parental leave months and take them successively, the mother will be absent from work for a shorter period, which entails numerous positive effects. It reduces a mother's losses of human capital and income induced by the birth of a child.[3] This promotes equal opportunities with regard to job applications and wages. This, in turn, reduces the poverty risk of mothers and children. Besides, the fathers' involvement in childcare is associated with strong father-child bonds and lower divorce rates (Hausegger, Schrems, and Strobl, 2003). Furthermore, analyses from several European countries show that it raises the number of desired children in a household (e.g. Cooke, 2003, Buber, 2002, Lappegård, 2008b). This effect is of great importance for Germany, as, due to the demographic change, there is a lack of qualified workers both at the present (the non-employed mothers) and in the future (the children). This can be countersteered with higher female employment and fertility rates.

This study explores the determinants of fathers' use of parental leave, because knowledge about these factors can be applied to the formulation of policy recommendations that further promote the leave-taking of fathers. As the BEEG rather resembles the parental leave schemes found in Scandinavian countries than the former German system, the hypothesis is that the results differ substantially from those of previous German studies that were conducted under the BErzGG and may rather be similar to those of Scandinavian studies.

In the next step, economic theories and international literature on these determinants is evaluated. After the description of the data and method, descriptive results are presented and the hypothesis is tested with binary response models using data of the German Microcensus 2007. It is raised to question which variables affect the fathers' use of

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[3] Boll (2009) finds that a woman who takes three years of leave plus three years of part-time work at the age of 28 looses between 29 and 36 % of the maximum wage (depending on the education level) until the age of 45. If she only takes one year of parental leave and two years of part-time employment, the income loss is halved.

parental leave, and, if applicable, how strong their effects are. At the end, the results are summarized and discussed.

2. The Fathers' Use of Parental Leave: Theoretical and Empirical Background

2.1. Theoretical Background

In the 20th century, micro economists as well as sociologists have developed theories about intra-family time allocation. They generally contrast between market employment and time use in the household, but do not clearly distinguish between household chores and childcare. In microeconomic theory, two strands of literature have widely spread: time-allocation models of the New Home Economics and game-theoretic bargaining models.

In the model of the allocation of time by Gary S. Becker, the spouses maximise a joint utility function (Becker 1965). Hence, a household forms one consumption and production unit. It produces "goods" that are not available on the market, among them children. The demand for such goods depends on their prices, which, in turn, are based on direct costs as well as time and opportunity costs. Additionally, it is subject to an income and a time constraint. The total available time equals the sum of working time and consumption time, which includes parental leave. An individual's division of time depends on the utilities of the different options. The higher the opportunity costs of the consumption time, which consists of the foregone earnings and human capital depreciation, the lower the utility of this time. A higher income implies higher opportunity costs and thus a higher relative price of the consumption time. Consequently, as the income rises, a rational individual increases the time spend on work and reduces the time for consumption. Becker (1981) claims that due to the "biological commitment" of women for child "production" and care, they are more productive in the household, even if both spouses are endowed with the same human capital. In addition, early specialisation of women into household tasks as well as limited career advancements and lower wages further contribute to the gender-specific distribution of market work and nonmarket work.

On the contrary, household bargaining models assume the maximisation of an individual utility function to each spouse (e.g. Ott, 1992). This is a plausible assumption, since rising divorce rates and decreasing alimony claims imply an asymmetric risk to the partner that has specialized in household production and childcare. Therefore, neither spouse agrees to specialize in these tasks. Each spouse's allocation of time is the result of bargaining and depends on her or his individual's bargaining position. This, in turn, is positively related to individual income and human capital resources. To sum up, although both microeconomic approaches differ substantially in their assumptions and mechanisms, the results are quite similar. The spouse with the relatively higher work-related resources concentrates on market work, while the other one takes the lion's share of household and childcare tasks.

However, empirical findings suggest that there are more factors that influence the allocation of time between spouses. Several studies argue that even if the female partner exhibits a higher human capital endowment and income or works as many hours as her partner, she is still responsible for most of the housework and childcare (Beblo, 1999, Lauk, and Meyer, 2005, Strancanelli, 2003, Yamada, Yamada, and Kang 1999).

For that reason, sociologists argue that not only rational considerations but also cultural factors, especially gender role expectations, are important factors that determine intra-family time allocation. This idea is the quintessence of sociologist theories like the "doing gender" (e.g. Berk, 1985, Brines, 1994) and the "gender display" approaches (West, and Fenstermaker, 2002). As Geisler and Kreyenfeld (2009) have summarized before, numerous empirical studies support this assumption. According to empirical findings, collective beliefs may have a stronger effect than individual attitudes: It is widely observed that there is hardly any difference in time for household chores of "traditional" and "modern" men, especially when a couple has children, despite very different views in regard to the gendered division of labour (e.g. Schulz, and Blossfeld, 2006, Wengler, Trappe, and Schmitt, 2008, Zerle, and Krok, 2008). The enhancement of the bargaining model through the variable "identity" by Akerlof and Kranton (2000) may contribute to the explanation of this phenomenon. They argue that female labour market participation threatens the identity of husband and wife, which implies a loss of utility. This, in turn, is

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compensated by a stereotypical behaviour of the female partner concerning household tasks, which probably results in stereotypical behaviour on the male partner's side.

2.2. Empirical Background

Most empirical studies on the fathers' use of parental leave have been conducted in the Scandinavian countries, as they had been the first ones that introduced "daddy months" and parental leave for both parents in the late 1970s and early 1980s. Sundström and Duvander (2002) use data from the 1994 registers of the National Insurance Board of Sweden to analyze the determinants of the fraction of parental leave days used by the father. They find that this fraction is positively correlated with the education and income of both spouses, but fathers' income had a greater impact. Moreover, fathers use a larger fraction if they were married and if it was the firstborn child. For the same country, Bygren and Duvander (2006) confirm the positive impact of the mother's education and income, but not of the father's. Even so, fathers' workplace characteristics have a stronger effect than those of the mother. Fathers who work in the public sector, in large firms and in female-dominated professions take more parental leave. Hoem (1995)[4] finds the same results as Sundström and Duvander (2002) for the fathers' education and the birth order. In addition, they reveal that growing up in Sweden has a positive influence on the fathers' leave-taking. In this context, Haas, Allard and Hwang (2002) point to the importance of organizational culture of firms. They show that a company's commitment to caring values, the level of "father friendliness", the support for women's equal employment opportunities, the fathers' perception of support from senior managers as well as a rewarding system that is geared to task performance instead of the number of attended hours are crucial factors for the use of parental leave by fathers.

For Norway, Lappegård (2008a) conducts a comprehensive analysis of the determinants of fathers' leave-taking using data from the Norwegian population registers. She distinguished between one-child and two-child couples as well as between paternity leave (leave for fathers exclusively) and gender-neutral leave (parental leave that can be used by

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[4] Hoem (1995): Kvinnors och mäns liv, i. Sysselsättining från 17 åra ålder (The lives of women and men, i. employment from age 17). Statistics Sweden, Stockholm. Cited in Sundström and Duvander (2002).

either parent). For one-child couples, the workplace characteristics rather affect the gender-neutral leave of fathers than the use of the paternity leave, since the gender-neutral leave has to be negotiated among the spouses. The use of the paternity leave is positively correlated with both spouses' education and the father's employment in a medium sized company. This is also true for the gender-neutral leave, but in addition, fathers are more likely to take this leave if both parents work in the public sector and in a male-dominated profession. In both models, the fathers are more likely to take leave if his partner's income is only slightly lower than his own, compared to a much lower income or a higher income of the mother than of the father. Another study for Norway shows that fathers' education, mothers' income, mothers' fulltime employment prior to birth and the number of pre-school children positively affects the fathers' use of paternity leave and gender-neutral leave (Naz, 2007). Besides, married fathers and those working in a female-dominated profession as well as those from a Western country are more likely to use leave. In this study, the father's workplace does not have an effect on the paternity leave but a strong effect on the use of the gender-neutral leave.

To the best of my knowledge, there is only one German study on the determinants of the fathers' use of parental leave after the introduction of the new parental leave scheme in 2007. Pfahl and Reuß (2009) conducted a quantitative descriptive analysis with a sample of 624 fathers that took part in a survey they had launched on the internet. This sample consisted of 0.7 % of all fathers that took parental leave in 2008. However, because of the method of drawing the sample and the restriction to employed fathers, it is not representative, so that the results have to be considered with care. About two thirds of the fathers in the sample went on parental leave in the first two months after the child's birth, and half of them took this opportunity with their spouse at the same time. The results show further that a majority of them were comparatively old, hold a university degree, have a partner that is working, too, and live in large cities. About two thirds of the fathers had more than one child. A decisive factor for the decision to use parental leave was the amount of the father's income in comparison to his spouse's income, as well as his workplace situation. Almost two thirds of the fathers worked in the public sector or in other service branches and three fourth were employed in companies with more than 100 employees. Besides, flexible work schemes facilitated the decision to take parental leave.

Geisler and Kreyenfeld (2009) conducted a multivariate analysis on the use of the child-raising leave of fathers between 1999 and 2005. According to this study, fathers are more likely to take child-raising leave if they live in eastern Germany, are of German nationality, not married but cohabiting, have multiple births or an older spouse or are less educated than their partner. Furthermore, the father's age and the number of children are positively associated with his use of the leave. As to workplace characteristics, fathers with a permanent work contract are more likely to take leave than self-employed men and those with a temporary contract, and so are fathers that are employed in the public sector in comparison to the private sector. The main conclusion of studies that investigate women's and men's attitudes towards the uptake of child-raising leave is that the omnipresent fear of income losses deters fathers from using this leave (Beckmann, 2001, Institut für Demoskopie Allensbach, 2005, Kassner, and Rüling, 2005, Rost, 2002). Further reasons are career disadvantages as well as the fear of stigmatization and losing the job (Beckmann, 2001, Institut für Demoskopie Allensbach, 2005). With regard to personal characteristics of fathers involving in child-raising leave, Kassner and Rüling (2005) suggest that these men are highly educated and live in an urban environment.

3. Data and Method

The Microcensus is a 1% representative sample of the German population. It comprises about 370,000 households with about 820,000 individuals. This survey has been conducted in western Germany since 1957 and in eastern Germany since 1991. By extrapolation, the data are representative for the total resident population in Germany (Statistisches Bundesamt, 2008b). The questionnaires reveal whether a father is taking parental leave (at all, less than three months, three months or more) (Statistisches Bundesamt, 2007b). The advantage of this survey is that it provides enough cases for a multivariate analysis due to the large sample size.

However, there are a few disadvantages. Firstly, the individual is only asked whether she or he is currently on parental leave. It is not recorded whether they have already taken parental leave in the corresponding year or whether they intend to use it. Therefore, the

group of fathers that are currently not on parental leave include those that have completed their parental leave months or have not started yet. Intuitively, it is expected that many fathers take the two parental leave months that would otherwise be lost in the 13th and 14th months after the child's birth. But, as 2007 is the first year under the new legislation, only fathers that took parental leave during the first year after the child's birth are included in the sample. Thus, the fact that this database provides only information on a particular time (a snapshot) of the respondents' lives calls for caution with regard to the results and their interpretation.

Secondly, as the biological kinship between family members is not accounted for, our sample includes all male persons with one or more children below the age of one in the family, although some of them may not be the biological father of the child. This probability is higher among fathers that are currently not on parental leave, as only the biological or the legal father of a child is eligible for parental leave.

As stated above, this sample includes all men that reported to have a child under the age of one in the family. It is further restricted to men between 22 and 54 years of age who live with a spouse in the same household. I apply three logistic regression models. The dichotomous dependent variable takes the value 1 if the father is on parental leave and 0 if not. The selection of the independent variables is based on the empirical literature on the determinants of the fathers' use of parental leave, as summarized in section 2.2. Model 1 includes personal traits of character and work-related characteristics of the father as well as differences between the spouses (i=1,2 denotes the categories of categorical variables):

$$
parentalleave = \alpha + \beta_1 age + \sum_{i=1}^{2} \beta_{2,i} citizen_i + \beta_3 cohab + \beta_4 kids + \sum_{i=1}^{2} \beta_{5,i} edu_i + \sum_{i=1}^{2} \beta_{6,i} regtype_i
$$

$$
+ \beta_7 east + \beta_8 inc + \sum_{i=1}^{2} \beta_{9,i} contract_i + \beta_{10} public + \beta_{11} lead + \sum_{i=1}^{2} \beta_{12,i} fsize_i + \sum_{i=1}^{2} \beta_{13,i} sratio_i
$$

$$
+ \sum_{i=1}^{4} \beta_{14,i} agdif_i + \sum_{i=1}^{2} \beta_{15,i} incdif_i + \sum_{i=1}^{2} \beta_{16,i} eddif_i + \sum_{i=1}^{3} \beta_{17,i} leaddif_i + \sum_{i=1}^{3} \beta_{18,i} pubdif_i + \sum_{i=1}^{2} \beta_{19,i} sizedif_i
$$

$$
+ \sum_{i=1}^{3} \beta_{20,i} condif_i + \sum_{i=1}^{4} \beta_{21,i} ratiodif_i
$$

As to personal characteristics, the age (*age*), family status (*cohab*), nationality (*citizen*), number of children in preschool age (*kids*), the level of education (*edu*), the type of the region (*regtype*) and the region (*east*) are included in the model. In regard to the father's workplace, the model accounts for the type of work contract (*contract*), the firm size (*fsize*), the personal net income of the last month (*inc*), having a leading position or not (*lead*)[5], sector affiliation (*public*) and the sex ratio of the profession (*sratio*). Finally, the differences between the spouses regarding the age (*agedif*), and the mentioned workplace-related variables are included.[6] α denotes the axis intercept. Model 1 is restricted to the fathers' personal and occupational characteristics whereas model 2 accounts for his personal characteristics and differences between the spouses. Model 3 includes all variables of the equation. All independent variables are also used for the descriptive analysis.

Note that model 2 and 3 are restricted to couples with two employed spouses.[7] This allows firstly, a verification of the discussed theories, and secondly, a comparison with the results of the empirical studies referred to in section 2.2. However, the comparison with model 1 is limited by implication. By contrast, model 1 provides important insights about the determinants of all fathers' use of parental leave, regardless of their spouse's employment status. The inclusion of this model with non-employed mothers is of utmost importance as the employment rate of mothers is considerably lower in Germany than in the Scandinavian countries (Aliaga, 2005).

4. Descriptive Results

The descriptive results which refer to the sample described in section 3 are shown in table 1. The sample contains 4493 fathers. 227 (5.0%) of them were on parental leave in the reference week. The majority (218, 4.8%) took parental leave for less than three months,

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[5] Individuals that hold a leading position are public officers in the upper grades of civil servants (gehobener Dienst and höherer Dienst) or employees with tasks on one's own responsibility or those with broad managerial functions and decision-making power.
[6] Income differences (*incdif*), differences in the educational level (*eddif*), differences in holding a leading position (*leaddif*), differences in sector affiliation (*pubdif*), differences in firm size (*sizedif*), differences in the work contract (*condif*), differences in the sex ratio of the profession (*ratiodif*).
[7] Farmers and soldiers are excluded because they lack answers of most variables.

while only nine fathers (0.2%) took parental leave for three or more months. Almost half of the fathers took parental leave at the same time as their partner (100 fathers, 44.0%), while 127 fathers (56.0%) were on leave not at the same time as their partner.

As to the personal characteristics, the two groups of fathers – those taking parental leave and those not taking it – do hardly differ in regard to the marital status. However, the fraction of fathers taking parental leave is somewhat higher in families with only one or two children in preschool age. Firstly, this may be due to a financial rationale, as the costs of children increase with their number, so that the relinquishment of the father's income is more likely to be accepted after the birth of the first child than after subsequent births. Secondly, if the mother has already done the lion's share of childcare after the first birth while the father was continuously employed, the specialization of household productivity and hence the reservation wage of the mother rises whereas the father's productivity on the labour market increases. Finally, the birth of the first child has a greater importance for the reaffirmation of the parental and partnership status (Vikat, Thomson, and Hoem, 1999).

The average age of fathers that take parental leave is 35.3 years, which is more than one year older than the average age of the reference group. The highest fraction of fathers taking parental leave can be found in the middle aged group, while the fraction is lower in the oldest age group and at a medium range in the youngest age group. The difference between the middle and the oldest age group can probably be explained with the higher income and thus higher opportunity costs and / or the prevalence of traditional gender roles of older cohorts (Wengler, Trappe, and Schmitt, 2008). Considering that the family formation age rises with the educational level, and higher educated men are more likely to share domestic tasks (Wengler, Trappe, and Schmitt, 2008), the comparatively low share of fathers using parental leave in the youngest age group comes at no surprise.

Regarding the citizenship, 5.5% of German fathers and 5.6% of fathers with dual citizenship, but only 2.9% of fathers with a foreign citizenship take parental leave. Low labour market participation rates of foreign women as well as culture-specific gender role models are possible explanations for this result. Fathers in western and eastern Germany do not differ substantially from one another with regard to parental leave-taking. However, the

fraction of fathers using this opportunity is lowest in rural regions, medium in urbanized regions and comparatively high in agglomerated regions. In addition, the probability of leave-taking by fathers increases with the educational level. Only 3.7% of fathers with a low educational level take parental leave, compared to 6.3% of those with a high educational level. Firstly, this is in line with the prevalence of modern role models at higher educational levels. Secondly, the female partners of highly educated men are likely to be well-educated, too. Thus, they pursue a career eagerly, so that they are characterized by a high human capital accumulation and income, which, in turn, strengthens their bargaining position.

With regard to the workplace-related variables, especially the results for the firm size are standing out. While only 3% of fathers in small firms are taking parental leave, 7% of those in a large firm take this opportunity. This finding hints at lower costs for the substitution of employees and a high flexibility of working times in large companies. Furthermore, the fathers that have a permanent contract take substantially more often parental leave (6.3%) than fathers with a temporary work contract (4.5%) or self-employed fathers (2.4%). Additionally, fathers that are employed in the public sector (versus the private sector) and hold a leading position take parental leave more often. Of all fathers that have a leading position, 8.3% are taking parental leave, of those without a leading position only 4.7%. Hence, it is not surprising that fathers taking parental leave are overrepresented in higher income categories. All in all, the fraction of fathers that take parental leave is particularly high among those with sophisticated, secure and well-paid jobs. Moreover, their fraction is notably high in female-dominated professions. On the one hand, selection effects are likely to be at play. On the other hand, female-dominated professions can generally better be reconciled with household and caring tasks (Datta Gupta, and Smith, 2000, Jacobs 1995), while male-dominated professions are associated with higher costs of taking parental leave (Jacobs, 1995, Polachek, 1981).

Recalling the suggestions of theoretic models and empirical literature, it is expected that fathers taking parental leave differ from the reference group in terms of differences to their spouses. Regarding age differences, it is striking that the fraction of leave-taking fathers is small for couples in which the female partner is between two and five years older, while

the fraction is highest for couples with a female partner who is more than five years older. The results for the last-mentioned type of couples are in line with the bargaining model rationale that the older spouse has the advantageous position with regard to human capital and, therefore, income. Yet, traditional gender roles do not seem to be easy to overcome, as the result for couples with a female partner that is between two and five years older indicates. The mothers in this age category probably have a strong preference for caring for the child themselves. They have a higher average age than in the other categories (34 years), and thus might have realized motherhood comparatively late.

Concerning couples where the father's income is higher, his bargaining position at his workplace might be the reason for the positive impact of his wage on the leave-taking. As to the educational level, the share of fathers taking parental leave varies only slightly between the categories. Looking at the type of work contract, however, the share of fathers taking parental leave is considerably higher when both partners have a permanent contract. Hence, not only the father's job security, but also the mother's one is decisive for the parental leave taking of fathers. By contrast, regarding the firm size, the probability that the father uses parental leave is higher when the father is employed in a larger firm. The exploration of the female- and male-dominated professions shows that an eminently high fraction of fathers on parental leave can be found among couples of which both spouses work in a profession that is not typical for their sexes. On the contrary, the fraction is small when the woman works in a female-dominated profession and the father in a male-dominated profession. As mentioned above, the opportunity costs of parental leave are lower in professions with a comparatively high share of women.

5. Regression Results

Table 2 provides the results of the three different logit models for the assessment of determinants of the parental leave taking of fathers. The tests for the goodness of fit of the models show a good adaptation of all three models. Precisely, model 3 is suited best to explain the dependent variable. However, multicollinearity problems are amplified by the large number of independent variables on the one hand and the small number of fathers using parental leave as well as of female partners that reported work-related information on

the other hand. This is the reason why not all variables of model 1 and 2 could be included in model 3. Besides, it impinges the level of significance of work-related variables.

As to model 1, which controls for personal and workplace-related characteristics of the father, the age of the father influences his use of parental leave significantly. The odds of taking leave increase by 4% with each additional year. While there is no difference between German fathers and those with a dual citizenship, the odds of leave-taking is reduced by more than 50% for fathers of a foreign nationality. They are also significantly lower for fathers living in rural regions than for those living in agglomerated regions. Contrary to the expectations, the fathers' use of parental leave depends negatively on the income. However, the results for the work position, the firm size and the gender ratio meet the expectations derived by the descriptive results. The odds are two thirds higher if the father holds a leading position. They are 44% higher if the father works in a female-dominated profession. They are also significantly higher for large companies compared to small and medium-sized ones. Neither the number of preschool children, nor the educational level, the region or the type of work contract affect the fathers' use of parental leave significantly. However, a permanent job contract and the employment in the public sector tend to be positively correlated with the dependent variable. As to the educational level, collinearity with the monthly net income is at play, which can affect the significance level. But it may also imply that the fathers' use of parental leave rather depends on the current personal and occupational situation.

Model 2 accounts for personal characteristics as well as differences between the spouses. It is therefore restricted to employed men with an employed female partner. In this model, the residence in a rural area is the only significant variable out of the personal characteristics. In comparison with the spouse, the age, the level of education, and workplace-related variables contribute to the explanation of leave-taking by fathers. The odds of taking parental leave increase by almost 150% if the father earns less than his spouse, and they tend to be lower if his earnings are higher. They are higher if both spouses have a leading position, are employed in the public sector and have permanent work contracts. Obviously, the security of both the father's and his partner's jobs play a crucial role in the decision on the distribution of parental leave months. As to the firm size,

the odds are 50% higher if the father is employed in the larger firm. Besides, they are significantly lower if the spouses work in occupations that are typical for their sex. With regard to the age differences, the significantly lower odds for couples of which the mother is between two and five years older are striking and cannot be explained without further analysis.

Model 3 includes all three categories of variables and the same cases as model 2. It reveals that the differences between the spouses are more important than the characteristics of the fathers' workplace alone. The odds ratios and the significance levels are similar to those in model 2. The father's age, his employment in a large firm and a higher monthly net income of the mother increase the odds for fathers to use parental leave significantly. In contrast, living in a rural region, being employed in a small company, having a spouse that is between two and five years older, being self-employed or having a temporary contract, while the mother has a permanent contract reduce the odds. The same applies for couples where only one spouse is employed in the public sector and for those where only the father or none of the spouses has a leading position.

All in all, the three models show that the fathers' use of parental leave is hardly significantly influenced by personal characteristics except for the age and the type of the region. The determining factors are features of the father's and the mother's workplaces. In this context, the positive relations between the fathers' uptake of parental leave and variables that are related to the job security (sector affiliation, type of work contract, occupational position) as well as the father's income in comparison to his partner's income are remarkable.

6. Summary and Discussion

Using data from the German Microcensus 2007, this paper provides insights into the determinants of the fathers' use of parental leave after the introduction of the new parental leave scheme in Germany that is geared towards the Swedish model of family policy. The "new fathers" in this sample are on average older than the reference group as well as better educated and therefore overrepresented in leading positions. Moreover, they are more

frequently employed in the public sector, in large companies and female-dominated professions. Their share is also higher among German fathers and those living in agglomerated regions. The small percentaged differences between the values of each variable could be related to the fact that the data is restricted to fathers that take leave during the first twelve months after a child's birth, and that almost half of them take this opportunity with her spouse at the same time. The binary regression models are in line with most of the results of the descriptive analysis, but point to the fact that workplace characteristics, especially in comparison with the partner, have a greater impact on the use of parental leave than personal traits of character. With regard to the father's sector affiliation and firm size, the mother's income as well as the share of females in the both spouses' professions, the results are consistent with those of most Swedish and Norwegian studies. They differ with respect to the effect of the educational level and the marital status, also in comparison with the German study by Geisler and Kreyenfeld (2009) on the use of the child-raising leave by fathers. Besides, this study departs from the latter with regard to age differences, region and nationality. However, concerning the effects of the age, the type of the region as well as the type of work contract, the results are similar. All in all, the findings of this study are partly consistent with Scandinavian analyses and partly with the German Study under the former family policy regime. With regard to the theoretical approaches, the economic theory of relative resources is confirmed in the comparison of both spouses. The comparison between fathers on leave and those not on leave partly supports the sociologist view that individual gender role models are a decisive factor. On the one hand, urban and highly educated men are the advocates of an equal division of childcare tasks. On the other hand, mothers that earn more than their partner do not reaffirm their role as the only childminder.

The finding that fathers with a secure job, namely those with a permanent contract, in the public sector and in leading positions, face fewer obstacles when considering taking parental leave, comes at no surprise. Thus, more "father friendliness" in the private sector, for self-employed fathers or those with a temporary contract and not in a leading position could enhance the share of fathers that use parental leave. In addition, the reduction of the gender pay gap would presumably boost parental leave taking by fathers, since this study demonstrates its positive dependence on the female partner's net wage. In this context, the

reduction of child-related career breaks through shorter parental leave periods, paternity leave months that cannot be used with the mother at the same time as well as an abundant supply of fulltime public childcare slots are essential instruments against mothers' human capital and income deprivation. The replacement of the joint tax system for married couples by a progressive individual taxation of each parent would further have a positive impact on women's wages and therefore enhance fathers' use of parental leave. This reform would stop the positive discrimination of couples with a large wage gap and would raise most women's net wages during the fiscal year, which is associated with a positive incentive to work, as theoretical frameworks (e.g. Apps and Rees, 2004) and empirical studies (e.g. Wrohlich, 2007) suggest.

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Appendix

Table 1: Descriptive Results

	Share of fathers using parental leave (%)
personal traits of character	
Age	
22 - 32 years	3.74
33 - 43 years	6.04
44 - 54 years	5.13
Citizenship	
German	5.46
dual citizenship	5.62
foreign citizenship	2.85
marital status	
Married	5.22
Cohabiting	4.26
number of children below the age of seven	
One	5.31
Two	5.07
three or more	3.13
Education	
low: school-leaving certificate "Hauptschul-abschluss" or "Oberschule of the GDR"	3.66
medium: school-leaving certificate "Realschulabschluss"	5.49
high: school-leaving certificate "Fachhochschulreife" or "Abitur"	6.30
type of region	
Agglomerated	5.43
Urbanized	4.92
Rural	3.74
Region	
western Germany	5.04
eastern Germany	5.13
work-related characteristics	
monthly net wage	
0 - 500 Euro	3.09
500 - 1300 Euro	3.71
1300 - 2600 Euro	5.54
2600 - 4000 Euro	5.70
4000 Euro or more	7.42
Sector affiliation	
Public sector	8.95
private sector	5.12
leading position	
Yes	8.30
No	4.69
Firm size	
small: 1 - 9 employees	2.95
medium: 10 - 49 employees	4.97

large: at least 50 employees	6.95
type of work contract	
temporary	4.52
permanent	6.28
Self-employed	2.41
Sex ratio of the profession	
male-dominated: share of women < 30 %	5.16
balanced: share of women between 30 and 49,9 %	5.41
female-dominated: share of women > 50 %	7.02
differences between the spouses	
Age differences	
male partner is more than 5 years older	5.11
male partner is between 2 and 5 years older	5.36
Less than 2 years age difference	5.26
female partner is between 2 and 5 years older	1.87
female partner is more than 5 years older	7.42
income differences	
male partner has a higher income	5.03
same income category	3.67
female partner has a higher income	6.25
educational level (ISCED classification)	
male partner has higher educational level	4.88
same educational level	5.02
female partner has the same educational level	5.45
occupational position	
only male partner holds a leading position	7.11
both hold a leading position	14.62
only female partner holds a leading position	9.89
none holds a leading position	5.63
Sector affiliation	
only male partner is employed in the public sector	7.07
both are employed in the public sector	14.47
only female partner is employed in the public sector	6.77
both are not employed in the public sector	6.61
Firm size	
male partner is employed in the larger firm	8.66
same firm size category	7.66
female partner is employed in the larger firm	4.23
work contract	
female: temporary or self-employed, male: permanent	5.29
both permanent	8.44
both temporary or self-employed	6.96
female: permanent, male: temporary or self-employed	2.65
Sex ratio of the profession	
both employed in a profession with a similar share of women	9.26
female: male-dominated profession, male: female-dominated or balanced profession	9.76
female: balanced, male: male-dominated	8.26
female: balanced, male: female-dominated	6.67

female: female-dominated, male: male-dominated or balanced	5.61
N (total number of fathers in the sample)	4493
not using parental leave	4266
using parental leave	227

Table 2: Regression Models

	Model 1 Odds Ratio		Model 2 Odds Ratio		Model 2 Odds Ratio	
personal traits of character						
Age	1.04	***	1.03		1.04	*
Citizenship						
German	1.00		1.00		1.00	
dual citizenship	1.00		1.22		1.06	
Foreign	0.42	***	0.62		0.61	
marital status						
Married	1.00		1.00		1.00	
Cohabiting	0.97		1.19		1.18	
children below the age of 7	0.92		0.97		0.99	
educational level						
Low	1.00		1.00		1.00	
Medium	1.29		1.10		1.16	
High	1.18		0.81		0.90	
type of region						
agglomerated	1.00		1.00		1.00	
Urbanized	0.88		1.04		1.00	
Rural	0.60	*	0.44	**	0.43	**
Region						
western Germany	1.00		1.00		1.00	
eastern Germany	1.15		1.14		1.14	
workplace-related characteristics						
monthly net income	0.94	**			0.97	
type of work contract						
Temporary	1.03					
Permanent	1.41					
self-employed	1.00					
employed in the public sector	1.36					
leading position	1.68	***				
firm size						
Small	0.52	**			0.49	*
Medium	0.69	*			0.68	
Large	1.00				1.00	
sex ratio of the profession						
male-dominated: share of women < 30 %	1.28				1.53	
balanced: share of women between 30 - 49,9 %	1.00				1.00	
female-dominated: share of women > 50 %	1.44	*			1.58	
differences between the spouses						
age differences						
male partner is more than 5 years older			1.01		0.99	
male partner is between 2 and 5 years older			1.00		1.00	
less than 2 years age difference			0.90		0.92	
female partner is between 2 and 5 years older			0.16	**	0.16	**
female partner is more than 5 years older			2.00		2.13	
income differences						
male partner has the higher income			0.83		0.89	
same educational level			1.00		1.00	
female partner has the higher income			2.44	**	2.23	*
educational level (ISCED classification)						

male partner has higher educational level		1.05		1.09	
same educational level		1.00		1.00	
female partner has the same educational level		1.17		1.17	
leading position					
only male partner holds a leading position		0.63		0.58	*
both hold a leading position		1.00		1.00	
only female partner holds a leading position		0.91		0.39	
none holds a leading position		0.45	***	0.85	***
sector affiliation					
only male partner employed in the public sector		0.50	*	0.50	*
both employed in the public sector		1.00		1.00	
only female partner employed in the public sector		0.50	**	0.48	**
both employed in the private sector		0.55	**	0.62	
fim size					
male partner employed in the larger firm		1.54	**	1.54	**
same firm size category		1.00		1.00	
female partner employed in the larger firm		0.65		0.98	
work contract					
female: temporary or self-employed, male: permanent		0.47	**	0.56	
both permanent		1.00		1.00	
both temporary or self-employed		0.65		0.98	
female: permanent, male: temporary or self-employed		0.35	***	0.42	**
sex ratio of the profession					
both employed in a profession with the same share of women		1.00		1.00	
female: male-dominated profession, male: female-dominated or balanced		1.28		1.38	
female: balanced, male: male-dominated		0.99		0.87	
female: balanced, male: female-dominated		0.76		0.64	
female: female-dominated, male: male-dominated or balanced		0.70	*	0.70	

Goodness of the Models	Model 1		Model 2		Model 3	
number of iterations	4		5		5	
Log likelihood (null model)	-802.78		-548.33		-548.33	
Log likelihood (final model)	-788.11		-499.54		-495.25	
LR chi^2	29.35		97.59		106.17	
	(LR chi^2(12))		(LR chi^2(33))		(LR chi^2(38))	
Prob chi^2	0.000	***	0	***	0.000	***
McFadden's Pseudo R^2	0.045		0.089		0.097	
Goodness-of-Fit Test Pearson's chi^2, Prob>chi^2	0.562		0.258		0.539	
Hosmer-Lemeshow Test, Prob > chi^2	0.751		0.362		0.239	
N (total number of fathers in the sample)	3399		1951		1951	
using parental leave	202	(9.6%)	153	(7.8%)	153	(7.8%)

note: the sample consists of men aged 22-54 who live in heterosexual partnerships and have at least one child below the age of one in the family.

*** $p<0.01$; **$p<0.05$; *$p<0.1$.

Sources of both tables: Statistisches Bundesamt 2007a (Mikrozensus 2007); HWWI.

Describing Skin Color in Contemporary Brazil: A Chromatic Mobility Model

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Abstract

It is well established in the literature that the popular saying "money whitens" is a strong mechanism of skin color declarations in Brazil. But this focus on socio-economic incentives and lightening excludes to some extent other incentives, darkening and chromatic immobility. Moreover, self-declarations are much more stigmatized than declarations by a third. In this article I construct a chromatic mobility model, where mobility is realized by a third-person in relation to the self-perception of the described person. The empirical application (econometrics and qualitative analysis) relies on original data collected during a field research conducted in São Paulo (2006 – 2007).

1. Introduction

The economic and social formation of Brazil has contributed to the crucial place of skin colors in the definition of one's identity there. It has also made the description of the skin color mosaic complex and difficult (Azevedo, 1929; Prado Júnior, 1942; Furtado, 1959; Mörner, 1967; Halperin Donghi, 1969; Mauro, 1973; Mauro, 1977; Bennassar, and Marin, 2000). While a statistical variable reflecting "skin color / race" exists since 1872 in census (Osório, 2003), there is no official classification or official definition of the available alternatives (Paixão, and Carvano, 2008). Moreover, this variable relies on individual self-declarations, which are suspected to be subjective (Harris, 1964). For example, the popular

saying "money whitens" means that high socio-economic characteristics may result in the respondent choosing to declare a lighter skin color than her/his objective one (Nogueira, 1998; Hasenbalg, Silva, and Lima, 1999; Queiroz, 2002; Sansone, 2003). At the macro level, Carvalho and Wood (1994) showed through demographic projection and analysis that a global increase of the standard of living of the Brazilian population since the 1950s has favored lighter self-declarations.

In Brazil, measurements of inequalities and discriminations given skin color are high regardless of the issue: life expectancy, education, labor market access, wages (Lovell, 1999; Arcand, and D'Hombres, 2004; Telles, 2004). If declarations – i.e. how the statistical variable is produced – are different from the objective color of individuals, the reliability of the statistical variable "skin color / race" is questioned and the results of the analyses using it are weakened (Paixão, and Carvano, 2007).

While self-declarations are blamed of unreliability, declarations by a third-person (subsequently referred to as "declarations by a third") are considered more objective. For instance, the lightening linked to good socio-economic characteristics was studied comparing self-declarations to declarations by a third, assuming the later to be the objective color (Hasenbalg, Valle, and Lima, 1999). However, declarations by a third are necessarily objective either (Hill, 2002; Bastos, Peres, Peres, Dumith, and Gigante, 2008). Indeed, the popular saying "money whitens" is also applicable to these declarations, for example in relation to the link between high education characteristics of the described person and lightening (Miranda-Ribeiro, and Caetano, 2006; Schwartzman, 2007). This color bias can also be found in the literature. For instance, in novels declarations by a third (i.e. declarations by authors in this case) can be suspected to be subjective too: authors choose the skin color of their characters in accordance with their characteristics in the novel (Queiroz Júnior, 1975). The core of my research is the questioning of skin color declarations to describe somebody (i.e. declarations by a third) rather than the objective color of the described person.

While links between the lightening of one's color declaration and her/his socio-economic incentives are well established, little attention has been given to darkening and to the role

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played by other incentives like identity for example. Miranda-Ribeiro and Caetano (2006) underline that poor educational characteristics of the described person are linked to darkening through declarations by a third; but this result is regarded as marginal. To my knowledge, other incentives are all but absent in the literature.

To deal with those limitations in skin color declarations analyses, I construct a chromatic mobility model, where (i) the self-declaration is assumed to be a proxy for the objective color, and (ii) chromatic mobility is realized by a third-person in comparison with the self-declaration of respondents. First, I call "chromatic mobility" all that is included in lightening, darkening and chromatic immobility. Second, the model considers three types of incentives: socio-economic, identity and courteous-based. Third, the chromatic mobility is here implemented by a third-person through her/his declarations. Fourth, the model is constructed to be confronted to both quantitative and qualitative data.

The main stake of chromatic mobility is self- and others valorization and identity. While identity can't be reduced to skin color declaration, the importance of color in Brazil places this issue at the center of identity definition and questioning.

This article is based on original data collected during field research conducted in São Paulo (November 2006 – August 2007). First, I use one part of the qualitative data to construct the chromatic mobility model. Second I realize an empirical application of the model (i) estimating a logit multinomial to rank preferences between lightening, darkening and chromatic immobility given each incentives, and (ii) analyzing the remaining qualitative data to allow for more complete and nuanced results.

Results emphasize first that, as expected in relation to the socio-economic incentive, the optimal choice among lightening, darkening and chromatic immobility is always collinear to socio-economic status. Second, I underline that the identity incentive leads to a promotion of darkening. This means that lightening is to some extent less valuable than in the past. Third, the analysis shows the ambiguity of the courteous incentive, both implemented (and thus not mentioned) and denounced when observed. Fourth, women are especially concerned by chromatic mobility through declarations by a third, which

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discriminate between the one judged pretty (and so lightened) and the other seen as not pretty (and thus darkened).

In the following sections I present the different incentives of the chromatic mobility through declarations by a third (Section 1). Then, I formalize this model (Section 2) and introduce the original data used (Section 3). The empirical model is presented in Section 4 and the results are provided in Section 5. In the conclusion I sum up the main findings and their implications, and point out elements to pursue chromatic mobility analysis in Brazil.

2. Chromatic Mobility through Declarations by a Third: Incentives

The mechanism of chromatic mobility through declarations by a third is not documented, except for the application of the popular saying "money whitens". To understand how such a chromatic mobility works, I use a qualitative analysis of declarations by a third made by interviewees on my own skin color, which is intermediate. Indeed, half of the 48 interviewees attributed spontaneously a skin color to me. As a result, the declarations by a third of my appearance cover the whole Brazilian mosaic, from black to white, including several intermediate terms for brown. The qualitative analysis underlines the motivations advanced by interviewees to justify the choice of a term used to describe me. On the basis of these motivations, I assume that there are three key incentives which influence chromatic mobility through declarations by a third: a socio-economic incentive, an identity incentive and a courteous incentive.

First, the socio-economic incentive corresponds to the "money whitens" mechanism, including darkening and chromatic immobility, i.e. the chromatic mobility aims at keeping a "pigmentocracy" (Lipschütz, 1944; Lipschütz, 1963) where the richer are the lighter, the poorer are the darker, and the neither rich nor poor are in between. This incentive relies on the interiorization of the whitening ideology and consequently on the racial democracy rhetoric (Leite, 1969; Mota, 1977; Petruccelli, 1996; Enders, 1997; Nolasco, 1997; Schwarcz, 1997; Mérian, 2003; Hofbauer, 2006).

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The chromatic (im)mobility resulting from the socio-economic incentive leads to a socio-economic return – later noted θ – when declarations by a third and socio-economic characteristics of the described person converge. This incentive is implemented by and through the whole Brazilian population.

Second, the identity incentive is directly related to the Brazilian Black Movement actions and discourses. A large communication plan from this Movement has aimed at promoting Black culture and identity from the 1970s. A binary classification (black / white) has even push forward to avoid the "mulatto escape hatch" (Degler, 1971), where declaration as brown is interpreted as a lightening and a rejection of black identity. The identity incentive is thus a polarization of the Brazilian mosaic.

The chromatic (im)mobility resulting of the identity incentive leads to an identity return – later noted ω – which encourages darkening and penalizes chromatic immobility. However, this incentive is not always implemented. It depends on two parameters, which are not exclusive. First, declarations by a third are likely to be influenced by the identity incentive if the person who is doing the declaration is connected in any way to the Black Movement. Therefore the third-person is willing to use a binary classification to do her/his declaration. Second, declarations by a third are expected to be influenced by the identity incentive if the described person shows a Black commitment (for example using afro hairstyle, being part of the Black Movement, underlying practice of Afro-Brazilian religion). Then, even if the third-person is not engaged in favour of the Black Movement, s/he will recognize such a commitment. When the identity incentive is activated, the declarations by a third will take it into account.

Third, the courteous incentive relies on "cordiality" (Holanda, 1936), which is to some extent a paradigm of conflict eviction in Brazil. In daily life the skin color topic belongs to privacy. Questioning somebody about household members' skin color out of a research or institutional context can be considered as rude and violent. In case skin color subject cannot be avoided courtesy implies to proceed to a lightening of the described person. However, if the declaration occurs during a conflictual situation, courtesy is dropped out (the courteous incentive is reversed), therefore encouraging darker declarations by a third.

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The chromatic (im)mobility resulting of the courteous incentive leads to courteous return – later noted ψ – for lightening and to a courteous cost – later noted $(-\psi)$ – for darkening. This incentive is not always implemented. Indeed, a third-person does not have any obligation of courtesy if s/he does the declaration for himself.

I consider the above formulation of the three incentives of the chromatic mobility model through declarations by a third as a theoretical framework suitable for a confrontation with qualitative data. I see the formulation of the model in the following section as a theoretical framework suitable for a confrontation to quantitative data using econometrics.

3. Theoretical Model

Let me consider two individuals i and j belonging to the same society. G a group composed of n individuals: i belongs to G, and j doesn't belong to G, but j knows G perfectly. Moreover, j knows i to some extent.

X is a vector of individual socio-economic and identity characteristics: i is defined by $f(X_i)$, an aggregation of her/his characteristics, and by C_i, her/his objective skin color, while j is defined by $f(X_j)$ [1], an aggregation of her/his own characteristics, and by C_j, her/his objective skin color. G is defined by X_G, an average aggregation of its members' X.

K is a set of all possible terms to describe skin colors. An individual j has thus to choose $^dC_{ij}$, the term for her/his declaration to describe i's skin color, among K.

Individual j modifies the definition of G for her/himself, giving more importance to the relative position of i in relation to j her/himself. I consider X_{Gij} the new definition of G for j, such that:

$$X_{Gij} = h\ (f(X_1), f(X_2), \ldots, f(X_n), f(X_j)).$$

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[1] The aim is to define a global picture of an individual. Given that all protagonists belong to the same society, I assume that the way to aggregate is the same across individuals.

Due to a neutral emotional content (Marks, 1943), j considers her/himself as a reference to position i, without denying the situation of i in G. Thus, j assumes:

- if $f(X_i)$ is preferred to $f(X_j)$, then X_G is preferred to X_{Gij};
- if $f(X_i)$ is equivalent to $f(X_j)$, then X_G is equivalent to X_{Gij};
- and if $f(X_j)$ is preferred to $f(X_i)$ then X_{Gij} is preferred to X_G.
-

Then j chooses K_j, a subset of K, such that:

$$K_j = [{}^{+}C_i \cup C_i \cup {}^{-}C_i],$$

where ${}^{+}C_i$ is an interval $[{}^{+}C_{iinf}; {}^{+}C_{isup}]$ of colors lighter than C_i and ${}^{-}C_i$ is an interval $[{}^{-}C_{iinf}; {}^{-}C_{isup}]$ of colors darker than C_i. If j chooses ${}^{d}C_{ij}$ inside ${}^{+}C_i$, her/his declaration lightens i. If j chooses C_i, her/his declaration to describe i corresponds to a chromatic immobility. If j chooses ${}^{d}C_{ij}$ inside ${}^{-}C_i$, her/his declaration to describe i darkens i.

Individual j wants to maximize her/his satisfaction choosing ${}^{d}C_{ij} = C_{ij}{}^{*}$, her/his optimal declaration to describe i (i.e. the optimal declaration by a third), being coherent with chromatic mobility mechanisms. I consider U_i the chromatic mobility utility function of j, depending on her/his declaration, which is influenced by the relative position of $f(X_i)$ relative to X_{Gij}. The maximization problem is:

Max $U_j \, (^dC_{ij})$

$\{^dC_{ij}\}$

s.c. $^dC_{ij}$ belongs to K_j

The optimal declaration by a third $C_{ij}*$ is thus the argmax of U_j.

To succeed in choosing $^dC_{ij} = C_{ij}*$, j takes into account the returns and / or the costs of $f(X_i)$ in relation to X_{Gij} for the socio-economic and the identity incentives. If j is not alone while doing her/his declaration, the courteous incentive is also considered.

All the parameters are indexed by j to take into account inter-individual heterogeneity in chromatic mobility implementation through declarations by a third. I will first assume that the three incentives are orthogonal.

For the socio-economic incentive, j focuses on i's socio-economic characteristics, and expects a socio-economic return θ_j, with $\theta_j \geq 0$, of $^dC_{ij}$. Her/his optimal choice will be realized given Table 1.

Table 1: Expected Socio-Economic Returns given K_j, $f(X_i)$ and X_{Gij}

		$f(X_i)$ preferred to $f(X_j)$	$f(X_i)$ equivalent to $f(X_j)$	$f(X_j)$ preferred to $f(X_i)$
K_j	$^dC_{ij}$ belongs to ^+C_i	θ_j	$-\theta_j$	$-2\,\theta_j$
	$^dC_{ij} = C_i$	$-\theta_j$	θ_j	$-\theta_j$
	$^dC_{ij}$ belongs to ^-C_i	$-2\,\theta_j$	$-\theta_j$	θ_j

NB: K_j is the skin color subset chosen by j to describe i, ^+C_i is the interval of lightening color terms, ^-C_i is the interval of darkening color terms, C_i is the objective color of i, θ_j is the socio-economic return, $f(X_i)$ is the aggregation of i's socio-economic characteristics, and $f(X_j)$ is the aggregation of j's socio-economic characteristics. Values of return correspond to satisfaction level for each part of K_j. They were chosen by convention to rank clearly preferences.

Thus $C_{ij}*$ is collinear to i's socio-economic status. However, if $\theta_j = 0$, j becomes indifferent between all alternatives inside K_j.

For the identity incentive, j focuses on i's identity characteristics and / or on her/his own commitment in the Black Movement ideas, and expects an identity return ω_j, with $\omega_j \geq 0$, of $^dC_{ij}$. Her/his optimal choice will be realized given Table 2.

Table 2: Expected Identity Returns given K_j, $f(X_i)$ and X_{Gij}

		$f(X_i)$ preferred to $f(X_j)$	$f(X_i)$ equivalent to $f(X_j)$	$f(X_j)$ preferred to $f(X_i)$
K_j	${}^dC_{ij}$ belongs to ${}^+C_i$	0	0	0
	${}^dC_{ij} = C_i$	$-\omega_j$	$-\omega_j$	$-\omega_j$
	${}^dC_{ij}$ belongs to ${}^-C_i$	ω_j	ω_j	ω_j

NB: K_j is the skin color subset chosen by j to describe i, ${}^+C_i$ is the interval of lightening color terms, ${}^-C_i$ is the interval of darkening color terms, C_i is the objective color of i, ω_j is the identity return, $f(X_i)$ is the aggregation of i's socio-economic characteristics, and $f(X_j)$ is the aggregation of j's socio-economic characteristics. Values of return correspond to satisfaction level for each part of K_j. They were chosen by convention to rank clearly preferences.

Thus $C_{ij}*$ does not depend on the relative position of i. If $\omega_j = 0$, j becomes indifferent between all alternatives inside K_j.

For the courteous incentive, j does not focus on i's identity characteristics. If j is not alone when doing her/his declaration, the courteous incentive is activated, and j expects a courteous return ψ_j, with $\psi_j \geq 0$, of ${}^dC_{ij}$. Her/his optimal choice will be realized given Table 3.

Table 3: Expected Courteous Returns given K_j, $f(X_i)$ and X_{Gij}

		$f(X_i)$ preferred to $f(X_j)$	$f(X_i)$ equivalent to $f(X_j)$	$f(X_j)$ preferred to $f(X_i)$
K_j	${}^dC_{ij}$ belongs to ${}^+C_i$	ψ_j	ψ_j	ψ_j
	${}^dC_{ij} = C_i$	0	0	0
	${}^dC_{ij}$ belongs to ${}^-C_i$	$-\psi_j$	$-\psi_j$	$-\psi_j$

NB: K_j is the skin color subset chosen by j to describe i, ${}^+C_i$ is the interval of lightening color terms, ${}^-C_i$ is the interval of darkening color terms, C_i is the objective color of i, ψ_j is the courteous return, $f(X_i)$ is the aggregation of i's socio-economic characteristics, and $f(X_j)$ is the aggregation of j's socio-economic characteristics. Values of return correspond to satisfaction level for each part of K_j. They were chosen by convention to rank clearly preferences.

Thus $C_{ij}*$ does not depend on the relative position of i. If j is alone when doing her/his declaration, the courteous incentive is not activated, i.e. $\psi_j = 0$: j becomes indifferent between all alternatives inside K_j.

When incentives are orthogonal, each characteristic can be seen as linked exclusively to a single incentive. It is thus possible to observe θ_j, ω_j, and ψ_j separately. When incentives are

correlated, such an observation is no longer possible. Only aggregated parameters are observable and the question is to know which incentive influences the chromatic mobility more than others.

When characteristics are linked to both socio-economic and identity incentives, I expect that the identity incentive influences the declarations by a third more than the socio-economic incentive. Indeed, (observed) commitment toward the Black Movement changes third-person's vision on a long term basis. Thus:

- if $f(X_i)$ is preferred to $f(X_j)$, then the preferred $^dC_{ij}$ belongs to ^+C_i, which is preferred to ^-C_i and to C_i;

- if $f(X_i)$ is equivalent to $f(X_j)$, then the preferred $^dC_{ij}$ belongs to ^-C_i, which is preferred to C_i and to ^+C_i;

- and if $f(X_j)$ is preferred to $f(X_i)$, then the preferred $^dC_{ij}$ belongs to ^-C_i, which is preferred to ^+C_i and to C_i.

When incentives are not orthogonal and $\psi_j \geq 0$, I expect courteous obligation being so strong that this incentive influences the declarations by a third more than the others. Thus $C_{ij}^* = {}^+C_i$.

Testable hypothesis of chromatic mobility through declarations by a third are summarized in Table 4.

Table 4: Testable Hypothesis of the Chromatic Mobility Model

When Incentives Are Orthogonal	
Socio-Economic Incentive	
Hypothesis 1	if $f(X_i)$ is preferred to $f(X_j)$, then the preferred $^dC_{ij}$ belongs to ^+C_i, which is preferred to C_i and to ^-C_i
Hypothesis 2	if $f(X_i)$ is equivalent to $f(X_j)$, then $C_{ij}^* = C_i$
Hypothesis 3	if $f(X_j)$ is preferred to $f(X_i)$, then the preferred $^dC_{ij}$ belongs to ^-C_i, which is preferred to C_i and to ^+C_i
identity Incentive	
Hypothesis 4	the preferred $^dC_{ij}$ belongs to ^-C_i, which is preferred to ^+C_i and to C_i
Courteous Incentive	
Hypothesis 5	the preferred $^dC_{ij}$ belongs to ^+C_i, which is preferred to C_i and to ^-C_i
When Incentives Are Not Orthogonal	
Socio-Economic Incentive + Identity Incentive	
Hypothesis 6	if $f(X_i)$ is preferred to $f(X_j)$, then the preferred $^dC_{ij}$ belongs to ^+C_i, which is preferred to ^-C_i and to C_i
Hypothesis 7	if $f(X_i)$ is equivalent to $f(X_j)$, then the preferred $^dC_{ij}$ belongs to ^-C_i, which is preferred to C_i and to ^+C_i
Hypothesis 8	if $f(X_j)$ is preferred to $f(X_i)$, then the preferred $^dC_{ij}$ belongs to ^-C_i, which is preferred to ^+C_i and to C_i
As Soon as Courteous Incentive is Activated	
Hypothesis 9	$C_{ij}^* = {}^+C_i$

NB: ^+C_i is the interval of lightening color terms, ^-C_i is the interval of darkening color terms, C_i is the objective color of i, $f(X_i)$ is the aggregation of i's socio-economic characteristics, and $f(X_j)$ is the aggregation of j's socio-economic characteristics.

4. Data

The empirical application (econometrics and qualitative analyses) of the above model relies on original data collected during field research conducted in São Paulo (November 2006 – August 2007). I use here a data base of 116 observations (a stratified random sample selected on the basis of department and gender was constructed in a single enterprise of transport services) and interviews.

I first present the quantitative data of DMISP 2[2]. Each respondent self-declared her/his skin color on the basis of the 5 alternatives classification of the Brazilian Institute of Statistics: white, brown, black, yellow, and Indian (Table 5). Based upon prior respondent's authorization, a picture of each of them was taken. After having suitably preserved anonymity, I showed these pictures to a third-person to collect his declarations (Table 5). Declarations by a third were collected during a face-to-face interview, without proposing any classification, but informing him that all pictures were taken in the same enterprise.

The variable K_j is constructed as follow. When self-declaration and declaration by the third are similar for i, there is a chromatic immobility ($K_j = 1$; i.e. 79.31 % in grey in Table 5). When declaration by the third is lighter than i's self-declaration, there is a lightening ($K_j = 0$; i.e. 11.21 % in Table 5). When declaration by the third is darker than i's self-declaration, there is a darkening ($K_j = 2$; i.e. 9.48 % in Table 5).

Table 5: Self-Declarations *versus* Declarations by the Third (DMISP 2)

		Declarations by the Third				Total
		white	yellow	light mulatto	dark mulatto	
Self-Declarations	white	65	0	11	0	76
	yellow	3	1	0	0	4
	brown	9	0	20	3	32
	Indian	1	0	0	0	1
	black	0	0	1	2	3
	Total	78	1	32	5	**116**

NB: by convention I associate the "yellow" category to the "white" one, and the "Indian" category to the intermediary categories. Chromatic immobility is in light grey, lightening is in white and darkening is in deep grey.

Given that the third-person knows that pictures were taken in a single enterprise, I assume G being the whole sample. So each respondent is positioned relatively to that sample. The explanatory variables of chromatic mobility rely on information which is observable by the third-person on these pictures: occupation, gender, and age (Table 6).

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[2] DMISP 2 means "Données Micro-Individuelles São Paulo 2".

The occupational variables are used to test the socio-economic incentive. On the basis of uniforms, the third-person can distinguish five occupational groups inside G: Security (which takes care of the security of customers and agents), Jacket (which works in offices at medium or high positions), Sweat (which works in offices at lower positions), Technique (which takes care of the transportation material and network), and Welcome (which enters directly in contact with customers) (Table 6).

Table 6: Descriptive Statistics of Observable Attributes and Characteristics* of Described Respondents (DMISP 2)

Variables		Description	Repartition / Mean
Occupation	Security	= 1 if the respondent works in Security	12.71 %
		= 0 otherwise	87.29 %
	Jacket	= 1 if the respondent works in offices	15.25 %
		= 0 otherwise	84.75 %
	Sweat	= 1 if the respondent works at a low skilled function in offices	2.54 %
		= 0 otherwise	97.46 %
	Technique	= 1 if the respondent works in maintenance	27.12 %
		= 0 otherwise	72.88 %
	Welcome	= 1 if the respondent works directly with customers	42.48 %
		= 0 otherwise	57.52 %
Gender		= 1 if the respondent is a woman	10.17 %
		= 0 otherwise	89.83 %
Age		Age of the respondent in years	42.78

*: I make a difference between an attribute (considered as natural) and a characteristic (which refers to nurture).

To position each respondent in relation to G, the third-person needs to rank these subgroups. Given the majority of the respondents belongs to the Welcome group, this one will be considered as the reference group (mean of G). To the third-person's mind, the Sweat group is considered as worse in terms of occupations than the Welcome group because it is linked to low skilled functions in offices. The three remaining groups (Security, Jacket, and Technique) are considered as better than the Welcome group because their functions rely on more complex skills. Members of the Security group are allowed to use weapons if necessary and need really good physical training. Members of the Jacket group have computing skills and specific administrative knowledge. Members of the

Technique group have to maintain and repair the network and the material. Such occupation is only accessible in Brazil after completing secondary school.

I expect that Security, Jacket, and Technique variables satisfy Hypothesis 1, and that Sweat variable satisfies Hypothesis 3. The Welcome variable, which would be expected to satisfy Hypothesis 2, is the reference category here.

Given that respondents all wear uniform no indication related to their potential the Black Movement commitment is perceptible. Moreover, the third-person is not involved in the Black Movement, and the described persons were not present during declarations by this third. Thus the econometric application is limited to the socio-economic incentive.

Age and gender are observable on pictures. Age is not *a priori* suspected to influence chromatic mobility through declarations by a third, but I introduce it as a control variable. On the contrary, gender can be suspected to influence chromatic mobility. Indeed, women representations associate light skin and beauty. It is not incorporated in the theoretical model because I constructed it on the basis of a qualitative analysis where I was the only described person. So no gender difference was to be observed. Moreover the link between gender and chromatic mobility is much more a preliminary statement instead of a hypothesis to be tested. Thus I introduce a dummy variable for women for an inductive purpose.

During the whole field research, the 48 interviews were carried out in Portuguese. They were semi-directed on the following themes: labor market, geographic location preferences in São Paulo, perceived social class, and skin color. All were recorded and transcripted. Interviewees were mainly contacted after having answered the questionnaire. The goal was to diversify as much as possible their profiles in order to cover differences in gender, age, social class, and self-declared skin color. This sample of 48 interviews is not relevant for quantitative analysis but gives a broader vision of representations. When declarations by a third occurred that was not applied to me, I confronted the interviewees' representations to the chromatic mobility model.

5. Empirical Model

I first present elements regarding the econometric application of the model. The chromatic mobility variable is discrete with three modalities: 0 if there is a lightening, 1 if there is a chromatic immobility and 2 if there is a darkening. These alternatives are not ranked regarding preferences because the optimal decision is not known *ex-ante*. The preferences are revealed by the trade-off realized through the chromatic mobility model, where the third-person chooses the alternative which maximises her/his utility. I use a multinomial logit to estimate this model. Chromatic immobility is the base category. The empirical model is thus directly linked to the theoretical model. Results will be interpreted in terms of ranked preferences. I estimate the following equation:

$$K_j = \alpha + \beta_1 Jacket + \beta_2 Security + \beta_3 Technique + \beta_4 Sweat + \beta_5 Women + \beta_6 Age + \varepsilon_j$$

where ε_j is an error term which follows a logistic distribution.

The independent of irrelevant alternatives hypothesis is satisfied by construction because the subset K_j is always composed of three categories. First, there are many words to describe skin color in Brazil[3]. Construction of a lighter or a darker label is thus always possible. Second, the aim of the chromatic mobility is to make the optimal choice: second best is never considered given that the terms' palette covers entirely K_j.

Given the small number of observations, estimates can be biased. I use penalized maximum likelihood for multinomial logit (Firth, 1993; Bull, Mak, and Greenwood, 2002; Bull, Lewinger, and Lee, 2007) to avoid such a bias, using the R package pmlr (Colby, Lee, Lewinger, and Bull, 2008). Coefficients and standard errors are ajusted. For the non significant coefficients, I use the inverse power function (Andrews, 1989) to question type II error.

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[3] For example, 136 terms were collected in the PNAD 1976 (National Household Survey) and 143 terms were collected in the PME 1998 (Employment Monthly Survey).

Given the subjectivity attached to self-declarations mentioned in the introduction, the chromatic mobility variable could be considered as measured with error or as a misclassification. However, this is not a satisfying way to characterize the difficulty posed by the confrontation of two subjectivities. First, chromatic mobility results from a similar trade-off in the case of self-declarations and declarations by a third. Second, the chromatic mobility itself cannot be considered as a misclassification because respondents and third-persons are not in a position to lie or make mistake as such. Through skin color declarations, they crystallize information about positioning inside the Brazilian society. This subjectivity is based on trade-off described in the chromatic mobility model. In other words, distance between self-declarations and declarations by a third is constructed.

However, the issue of such a construction of K_j remains because it can lead to biased results. The solution would be to collect the objective color of each respondent, using a skinreflectometer (Jablonski, and Chaplin, 2000; Jablonski, 2006) or a scale (Massey, Charles, Lundy, and Fisher (2003); Massey, and Martin, 2003; Hersh, 2006). Both were difficult to use during the field research because of skin color in Brazil can belongs to privacy – skinreflectometer could lead to conflictual situations – and due to the field research conditions, there were only a few possibilities, if any, to check the scale just after having realized each questionnaire. Taking pictures was used as a way to deal with the particularity of the desired K_j, which should be objective. Unfortunately, the brightness conditions of that set of photographs were impossible to control for. In particular, the use of an automatic flash decreases the heterogeneity of color.

In the econometric application, I cannot account for the feature of the constructed K_j. However, to some extent, the articulation of the econometric results with qualitative analysis decreases the effect of that feature on the final conclusion.

Regarding the qualitative application of the chromatic mobility model, I use both a semantic analysis (what is the meaning of a given word) and to a discourse analysis (what people are saying about something) (Bardin, 2003). I focus on transcription extracts where declarations by a third are done. Interviews cannot be taken as the absolute truth but thanks to a confidence relationship between the interviewer and the respondent, analysis of

contradictions, repetitions and omissions should reveals norms, values, representations and believes of respondents (Bourdieu, 1986).

6. Results

Quantitative and qualitative findings are presented together. I first underline the results' general features. Econometric results are presented in Table 7. Few coefficients are significant but the inverse power function does not allow rejection of the alternative hypothesis, i.e. that coefficients could not be zero. Indeed, b is always bigger than the absolute value of the estimated coefficient.

Table 7: Estimation of the Chromatic Mobility Model through Declarations by Third

		Lightening				Darkening			
		Pmlr Estimates		Inverse Power		Pmlr Estimates		Inverse Power	
		Coeff.	s.e.	b	c	Coeff.	s.e.	b	c
Occupations	Security	0.69	0.91	1.78	3.28	- 1.71	1.51	2.96	5.44
	Jacket	0.5	0.86	1.69	3.1	**- 1.92**	1.45	n.c.	n.c.
	Technique	**1.06**	0.75	n.c.	n.c.	- 0.66	0.81	1.59	2.92
	Sweat	0.68	1.76	3.45	6.34	0.99	1.21	2.37	4.36
Gender		0.42	0.96	1.88	3.46	0.62	0.82	1.61	2.96
Age		- 0.01	0.03	0.06	0.11	- 0.01	0.04	0.08	0.14

Estimations realized with R using pmlr package (Colby, Lee, Lewinger, and Bull, 2008). Significant results at 1 % to 15 % are in bold. For inverse power function application, b refers to the rejection threshold of type-II error at 5 % and c to this rejection threshold at 50 %.
NB: n.c. means "not calculated" when type-I error significance test can be interpreted.

To rank preferences, I position lightening and darkening coefficients in relation to each other and to chromatic immobility base category, which is represented by zero. For example, working in the Security group leads to a preference of lightening through declarations by a third.

Chosen quotations[4] are reproduced to give example of a common discourse of all interviewees. Key findings of the qualitative analysis are then synthesized.

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[4] I realized translations to facilitate the comprehension of non-Portuguese speaker. This can lead to a loosening of nuances. I request readers to be aware that these quotations refer to a Brazilian context.

6.1. Money Whitens: Reality of a Popular Saying (Socio-Economic Incentive)

Hypothesis 1 and 3 of the chromatic mobility model are not rejected, i.e. higher occupations whiten and lower ones darken. For the Security group, the Jacket group and the Technique group, coefficients of lightening are all greater than coefficients of darkening and the chromatic immobility respectively, $0.69 > 0 > -1.71$ (Security group), $0.5 > 0 > -1.92$ (Jacket group), and $1.06 > 0 > -0.66$ (Technique group). Contrarily, for the Sweat group, the optimal choice is darkening: $0.99 > 0.68 > 0$. These results correspond to literature, where "money whitens" mechanism belongs to the most documented features of chromatic mobility.

In interviews, the socio-economic incentive appears exclusively when the interviewee is commenting the social mobility of somebody who became famous, for example the soccer players Pelé and Ronaldinho. They are not brown or black anymore, but they are (i) considered as white or (ii) colorless, i.e. their color is not mentioned anymore. My interviewees, who mainly belong to the lowest or to the low-middle social class in Brazil, are disappointed about the fact that these famous people "left" them. Interviewees are angry about the fact that chromatic ascendant people forget from where they are socially from. They do not help the remaining persons. Lightening itself due to better socio-economic status is not denounced.

6.2. Conflictual Dynamics (Identity Incentive)

Qualitative analysis of interviews reveals a special feature of the chromatic mobility model. Indeed, the effect of the classification used by the third-person on the distribution of K_j is assumed to be given in the model. The subset K_j is chosen freely to do the declarations by a third. But if the third-person is engaged in favour of the Black Movement issues, s/he prefers a binary classification (white or black)). Such a preference appears clearly during interviews (Quotation 1): Filipe underlines that he uses a binary classification.

Quotation 1: Filipe Speaks about His Preferences to Describe Skin Color through Declarations by a Third

Filipe: [...] For me there are only white and black. **Author [A]**: There are only two colors for you? **Filipe**: Yes. For me yes. **A**: Why? **Filipe**: Ah, I don't know. For example, for me a brown person is black, there is no difference [between black and brown], but if he is white, he is white and if he is black, he is black. I don't know, I think it is like that [*laugh*].

Lots of interviewees share this preference. This implies less chromatic immobility given that all respondents having chosen an intermediary term are seen as black or white. And consequently, more people are seen darker than the brown color they declare themselves. Each interviewee who uses and even sometimes promotes a binary classification limits such a use to her/himself, i.e. s/he knows that not everybody is activating the identity incentive.

The identity incentive is conflictual because when activated it forces one to choose between black and white (Quotation 2).

Quotation 2: Tatiane Speaks about Her Rejection of Intermediary Skin Color Terms

Tatiane: [...] I have the color you can see, so I see myself as black, isn't it. [...] I will never see myself as brown or something else. [...] **Tatiane**: [...] I have five children. [...] Each one has a skin tone and I tell them always the same thing: "you are black". It is not worthy to tell: "I am white, I am...". No, you are black. Because your ancestors are.

This conflictual dimension is obvious in inter-personal relationship. The interviewees who do not apply the identity incentive, i.e. who are not reducing the classification they are using to describe people, are regarded as having prejudice by the binary classification users. To avoid such confrontation, some who do not use the identity incentive finally apply it temporarily. But the manner to do it is charged of reluctance, and they finally always assert their rejection of a binary classification again.

So if the third-person that does the declaration prefers a binary classification, the identity incentive is activated. But if the third-person does not share this preference, s/he can apply it despite her/his own mind, and without pressure from the former. Lots of interviewees highlight that the Black Movement commitment of the described person is obvious. Such

an affirmation second way to activate the identity incentive is mainly based on appearance choices, e.g. hair. Hair is an element that is underlined by the majority of the interviewees. To show natural hair (opposed as artificially smoothed hair) is interpreted as a black identity affirmation. A difference is (still) done in Brazil between the so called "good hair" (i.e. smooth) and "bad hair" (i.e. curly, frizzy). On this side, showing "bad hair" is associated to a bad appearance. On the other side, with the Black Movement affirmative campaign, doing so belongs to stigmata reversal (Goffman, 1975). Analysis of interviews shows that natural hair are interpreted as the latest side, and thus this leads to an activation of the identity incentive, whatever the own commitment of the third-person who is doing the declaration.

6.3. Not to Mention or to Denounce (Courteous Incentive)

In DMIPS 2, the courteous incentive was not activated during the collection of declarations by a third because the described person was not present. However, qualitative analysis allows assessing the effectiveness of this incentive of the chromatic mobility. I notice that this incentive appears in interviews only when it is denounced (Quotation 3).

Quotation 3: Fátima Speaks about Her Rejection of the Courteous Incentive

Fátima: Mulatta is somebody who is black, but sometimes they say she is mulatta. A: Why are they saying mulatta if the person is black? Fátima: Some people say that. I don't think it is good to tell she is mulatta. No, she is really black. A: Why do you think it is not good? [...] Fátima: Ah, it is like in the media. Sometimes the newscaster says what he wants, what he thinks he has to tell, what he can't say, what can be diffused. And finally they create that [*commenting media rhetoric during carnival*].

At first sight, this can appear to be only a rejection of lightening. But Fátima goes ahead. The fact that such a substitution ("mulatta" instead of "black") occurs during carnival underlines two things. First, lots of non-white women appear in the media, notably samba dancers. Newscasters have to and like to speak about them during carnival, and describing them belongs to the presentation. The term "black" is not used for that purpose, even in daily life; except when a conflictual situation occurs. On this side, newscasters are doing a favour – are being courteous – when they use "mulatta" instead of "black". Second, the term "mulatta" refers to a sensual image of women (Queiroz Júnior, 1975). Being judged

beautiful belongs to samba dancers requirements. Thus, replacing "black" by "mulatta" celebrates one type of women; that gives elements for a gender effect in chromatic mobility.

Interviews analysis highlights that men are also concerned by an application of the courteous incentive. Whatever the gender, its application consists in a shift from one term to a lighter one. So the word for declarations by a third is "light brown" instead of "brown", "white" instead of "light brown", and so on.

All the interviewees denounce the existence and the implementation of the courteous incentive. Denunciation occurs only when this incentive is activated by somebody else. Self-activation of this incentive by the person who is doing the declaration by a third is never emphasized. This does not mean that people are not self-conscious when they activate it, but rather that activating the identity incentive herself/himself is difficult to confess. Specific interviews should help to catch this side of the courteous incentive.

6.4. Effect of Gender

Concerning women, darkening and lightening are preferred to chromatic immobility: 0.62 > 0.42 > 0 (Table 7). It is not possible to judge if the darkened and the lightened women of the sample are either ugly or pretty. However one can notice that chromatic immobility is avoided, which corroborates my hypothesis: gender can influence chromatic mobility through declarations by a third.

Qualitative analysis of interviews confirms this intuition too. For her mother, Aparecida is seen as beautiful and, so, as white (Quotation 4).

Quotation 4: Aparecida Speaks about How Her Mother Declares Her Daughter's Skin Color

> **Aparecida**: [...] My mother says: "you have so much luck".
> A: Why luck?
> **Aparecida**: Because she says that the legitim black has a big mouth, he has a face, you know [*silence*] I don't know how. My mother said something funny. Like: "it is really African" [*speaking about Aparecida's mouth*], you see? And she said: "you are white my love". My mother says: "you have white blood". I respond that I am not white, I am black, "look at my color".
> A: And why did she say you are white?
> **Aparecida**: Because she says I was born pretty [*laugh*]. Then I say "Mummy, to tell the truth, no I am not". Because she said that it is an argument between parents, she underlines: "it is from your father's familly that didn't perform".

Aparecida's beauty – where beauty becomes a synonym of whiteness – is presented as luck. In another part of the interview, she underlines that her natural smooth hair belongs to her beauty capital, inherited from her mother's family (partly Indian). Into their mind, Aparecida's mother leaves her a good racial endowment, unlike her father, who leaves a mouth which "is really African". Despite Aparecida's black skin, having a white connoted attribute (smooth hair) lightens her in her own mother's mind. Interestingly, Aparecida self-declares her skin color as black.

7. Conclusion

I explore how chromatic mobility through declarations by a third works by crossing econometric and qualitative analyses. When a third-person describes somebody's skin color, s/he is influenced by a socio-economic incentive, an identity incentive, and a courteous incentive. That leads to more complexity than the sole "money whitens" mechanism. In addition, darkening can be positively promoted, a situation that was not conceivable before.

However, there are limitations associated with those results. First, they all rely on a case study. A broader and more representative way to do it is in early process, and includes design and collection of specific data (data base and interviews). Those additional data will also be suitable to test econometrically all the incentives. Second there is a need for a method to catch heterogeneity of third-persons doing declarations.

Subjectivity of self-declarations was acknowledged in the introduction. The whole article discusses the subjectivity of declarations by a third. Both self-declarations and declarations by a third weaken measurements of both inequalities and discriminations related to skin color: skin color declarations are endogenous in Brazil. Searching instrumental variable(s) and/or a proxy for the respondents' objective color is an important objective of research agenda in relation to that topic. Another way to apprehend it would be to consider that there is a conflict of representation: the tool that researchers and government would like to use *versus* an individual tool to crystallize information about her/him, about others, and about the way of seeing others. None of the two is right or wrong: each has its own objective. Searching instrumental variable(s) and / or a proxy responds to the former's preoccupation. These two different goals can become critical when a public policy is implemented on the basis of skin color. First, the assumption "declarations equal objective skin colors" is often forgotten and thus chromatic mobility of agents appears to be a strategy especially constructed to take advantage of the policy. Second, chromatic mobility trade-off could effectively be influenced by a policy, and adds a temporary incentive to the model. These elements constitute key points to pursue chromatic analysis in Brazil.

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Investments in MBA as a Means of Human, Social and Symbolic Capital

Accumulation

(Case of the Higher School of Economics and the Academy of National Economy)

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Abstract

The paper deals with strategies of investment in business education and satisfaction with business education programs. The strategies comprise different combinations of principal capitals, in which the students invest: human, social and symbolic. Investments include not only financial costs, but also costs of time and effort allocated to studying. To form empirical base students of two well-known Russian business schools were surveyed. Six key types of strategies typical of students with different employment and socio-demographic background are pointed out. The amounts of time, effort and money endowments are dependent upon the dominant type of capital in the investment strategy.

1. Introduction

The objective of this paper is to bring to light the significance of business education to the entrepreneurs in Russia. Business education contributes to the development of cognitive and non-cognitive skills that are of vital importance to both established entrepreneurs and people seeking to undertake entrepreneurial activities.

Entrepreneurship and business leadership in Russia has a long and controversial history of development. In the Soviet Union private business initiative was legally forbidden and existed only unofficially. During the post-Soviet market transformation accompanied by a severe economic crisis when the salaries in many skilled professions (science and

engineering, education, healthcare, etc.) went down and wage arrears grew rapidly, a lot of people decided to change their occupation and became independent small entrepreneurs in order to survive. In spite of the fact that in most cases, those fresh-made entrepreneurs possessed neither necessary professional characteristics nor special education, many of them managed to organize and sustain successful businesses. Yet at some stage, they began to realize lack of appropriate education as a barrier to further development. It raised the demand for business education.

Thus, the rapid expansion of business education reflects the changes in patterns and scale of entrepreneurship in Russia. Now the entrepreneurship tends to be better organized than it used to be at the start of reforms. The requirements to professional skills and qualifications of entrepreneurs are growing. The share of established entrepreneurs feeling lack of necessary knowledge and skills and willing to compensate the absence of formal business education enrolling in MBA programs is growing. Business education is popular not only with established but also with prospective entrepreneurs. The main tendency is the following: among the participants of MBA programs the share of established entrepreneurs (old generation) is declining, while the share of prospective entrepreneurs (new generation) is increasing.

One of the key objectives of business education is to stimulate and develop non-cognitive skills that are crucial for entrepreneurs (as well as for prospective entrepreneurs). They include readiness to work hard and aggressiveness, orientation on success, high motivation, creativity, team-working skills and so on. Furthermore, business schools give excellent opportunities for establishing social networks and provide essential knowledge about business ethics and goal setting. In some way, business education is a contribution to the entrepreneurial orientation.

The concept of entrepreneurial orientation comprises five main dimensions: autonomy, innovativeness, risk taking, proactiveness and competitive aggressiveness (Lumpkin, Dess, 1996). Despite the fact that not all of the business school students are established entrepreneurs or plan to go in for entrepreneurial activities in the near future, most of them

are likely to possess the appropriate characteristics and share the relevant values, and hence are more likely to end up as entrepreneurs after all.

Simpson and others (Simpson, Sturges, Woods, Altman, 2005) point out extrinsic and intrinsic career benefits. From my viewpoint, it is possible to draw a parallel between these two types of benefits and cognitive and non-cognitive skills. Extrinsic benefits (financial gain, status, marketability) are closer to cognitive skills, whereas intrinsic benefits (increased confidence, enhanced credibility, more effective interpersonal skills) have more in common with non-cognitive skills. As the results from the UK survey indicate, men are more likely to gain extrinsic values from the MBA, while women tend to gain intrinsic ones (Simpson, Sturges, Woods, Altman, 2005).

This paper deals with the strategies of investment in business education and satisfaction with staying in business education programs. The rate of satisfaction is supposed to reflect implicitly efficiency of strategies chosen by business school students.

2. The Model

2.1. Research Methodology

In this paper I stick to definition of business education, supplied by Filonovich. According to it, business education is "professional education and training of people, who participate in performance of functions in the enterprises and economic organizations, acting under market conditions and with main purpose of profit gain" (Филонович, 2004, c. 38). There is a great variety of empirical research devoted to different aspects of business education (Hazeldine, Miles, 2007; Braunstein, 2006; Sulaiman, Mohezar, 2006; Elliot, Hodge, Kennedy, Pronk, 2007; etc.). Moreover, the impact of business education on career success overall (Zhao, Truell, Alexandr, 2006; Mihail, Elefterie, 2006; Ainsworth, Morley, 1995) and for entrepreneurs in particular (Hazeldine, Miles, 2007; Richards-Wilson, Galloway, 2006) was examined.

In this paper I am trying to analyze the process and outcomes of business education from the perspective of 'plethora of capitals' concept. The 'plethora of capitals' concept was broadly used in the educational research, but mainly the research was focused on basic secondary or higher education.

I apply the 'plethora of capitals' concept to the analysis of students' investment strategies in business education. A strategy is defined as a combination of decisions to invest in human, social and symbolic capital. It is assumed that in business education (in comparison with traditional education) investing in social and symbolic capital is as important as investing in human capital, which is regarded as traditional strategy in educational system. Social ties play a crucial role in the business world and business school social networks can contribute to the further development of business career. Hence, in business education interaction and exchanging of experience among students is not of less importance than knowledge and new material provided by professors.

As to human capital, for entrepreneurs and business leaders it is crucial to distinguish between general and entrepreneurship-specific human capital (Ucbasaran, Westhead, Wright, 2008; Iyigun, Owen, 1998). General human capital consists of education and work experience. Entrepreneurship-specific human capital includes business ownership experience and self-assessed capabilities.

The research model is the following (see figure 1). Potential business education students have to make a number of important decisions about their investment strategies. They have to choose among different types of programs and then they have to choose the specific business school and program. In the process of making choice they are estimating the supposed investments and returns on them. Furthermore, the company often sponsors education of its employees and hence influences the decisions about the program choice.
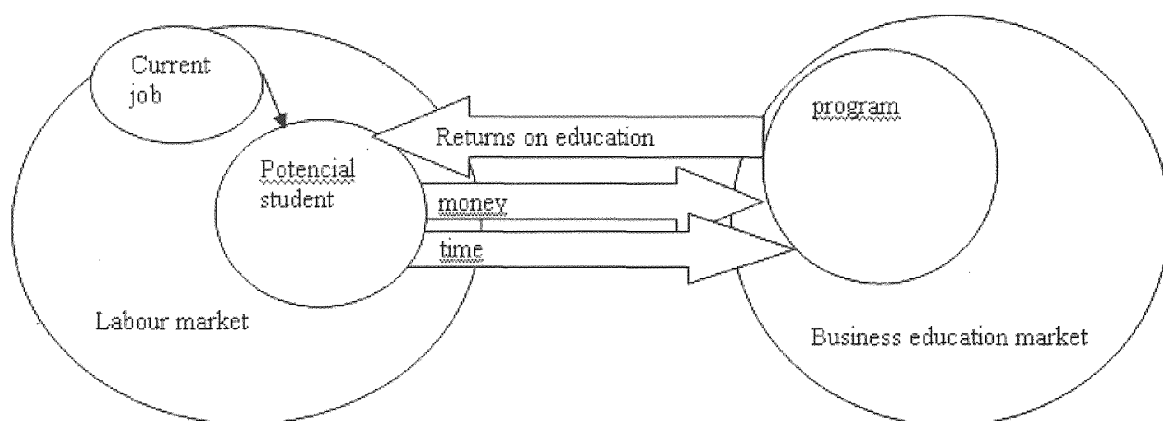
Figure 1. The Research Model

In this paper two main tasks are pointed out. The first one is to bring to light and classify the principal strategies of investment in different types of capital and to reveal the rate of dependence of these strategies on the type of program, basic education and the characteristics of job the student held. The second task deals with estimating the degree of students' satisfaction with the programs of business education in which they are engaged and exploring the interrelation between their satisfaction rate, on the one hand, and the strategies of investment, on the other.

The *strategies of investments* comprise different combinations of the principal capitals, in which the students invest. These investments include not only financial costs (broadly defined since some students paid their own money, while employer paid for education of others), but also the costs of time and effort allocated for studying (visiting lectures, self-preparation).

In a way, the strategies of investments reflect the individual perceptions of business success and the main principles of conducting business.

Human capital encompasses knowledge and skills essential for future professional activities. Social capital refers to developing new acquaintances and strengthening the existing social ties both with professors and with other students. The indicators of status, for instance, diploma, are regarded as symbolic capital (See table 1).

Table 1: Operazionalisation of the Notions of Human, Social and Symbolic Capital

Type of Capital	Description of Contents Question: Why did you choose this particular program?	Range of Utility Question: What opportunities can this program give to you?
Human	Knowledge and skills 1. The relevancy (necessity) for the job, appropriate speciality 2. Acquiring new knowledge for the professional growth *Indirect indicators* 3. High professionalism of teachers 4. Modern (new) education form	1. Acquiring new knowledge and skills, that are necessary for the job 2. Acquiring additional general knowledge and skills 3. Acquiring currently lacking managerial skills 4. Improving prospects for salary growth 5. Increasing opportunities for changing the field of activity 6. Broadening the range of available job opportunities 7. Increasing job independence and self-determination
Social	Social contacts 1. The opportunity to have new contacts and acquaintances	1. Improving prospects of career growth within the firm 2. Acquiring useful new contacts in order to change the current job 3. Increasing opportunities for changing the field of activity 4. Mastering elements of prestigious external corporate culture 5. Broadening the range of available job opportunities 6. Broadening the opportunities for gaining new social contacts 7. Broadening the range of the job authorities
Symbolic	Diploma 1. Prestige of a specific program 2. Prestige of the particular school diploma	1. Getting a prestigious diploma 2. Strengthening status positions 3. Increasing opportunities for changing the field of activity 4. Broadening the range of available job opportunities

The main hypotheses of my research are as follows.

- The majority of students invest in all three types of capital described above. At the same time there is a small group of students, whose main intention is to contribute to human capital accumulation. On the contrary, for another group symbolic capital accumulation is the first priority.

- Priorities of investment depend on the type of tertiary (university) education initially received by student, characteristics of the student's job and the sources of financing the business education program. Specifically, students with technical education background and those whose education is sponsored by their employer are more inclined to contribute to human capital.

- Priorities of investment influence the amount of time and effort spent on studying. The students who tend to invest first of all in human capital devote relatively more

time and effort to studying than average and the students whose main purpose is symbolic capital accumulation – relatively less.

- The strategies of students in the two surveyed business schools are very much the same, since both of them are prestigious and of high quality.

2.2. The Sample

To form the empirical base students of two well-known Russian business schools (Higher School of Management at the Higher School of Economics (HSE) and Higher School of Finance and Management at the Academy of National Economy (ANE) were surveyed. In both schools students of evening and of module programs were covered. The sample consisted of 95 persons at the HSE and 87 persons at the ANE and covered about 45% students participating in both programs.

3. The Main Results

3.1. Different Types of Investment Strategies

The majority of students is determined to invest in human capital and therefore is inclined to gain new knowledge and skills from the program. It is gaining knowledge and not raising the status characteristics which is most frequently (in 81.9% of cases) named as the main expected outcome of program participation. Hence, the evidence signifies that investing in human capital is the first priority objective of undertaking business education. Moreover, gaining general knowledge was named as one of the three main outcomes by approximately one third of students. This result contradicts the initial hypothesis, while it was assumed that the main aim of business education is gaining specific practical knowledge and skills.

At the same time investing in human capital rarely constitutes the sole objective of business education. Most students are inclined to invest in all three types of capital but the relative importance of each differs considerably from case to case. Namely, the incidence of regarding symbolic capital as a vital asset for improving labour market competitiveness

is rather high. For a number of students the prestige of the specific program (22.5%) or the prestige of the educational institution (22.0%) are significant reasons of choosing a particular university. Furthermore, around one forth of students (26.4%) named an opportunity to build new social ties and acquaintances as a reason for choosing a specific program.

The individual investment strategies turned out to be of great diversity. With the help of cluster analysis[1] six groups of students with different types of investment strategies are pointed out (see table 2).

These groups can be characterized in the following way.

1. *"Professionals"* possess a clear orientation to human capital accumulation and have little interest in the investing in the other types of capital. For the considerable part of this group managerial skills are of primal importance, so this is an indicator of a circumspect carefully thought-out choice.

2. *"Multi-investors"* are inclined to invest in all types of capital and wish to raise their general labour market competitiveness. However, there is a high orientation to gaining knowledge as well as to establishing of social ties and rising social status.

3. *"Sociable"* tend to contribute to social and to human capital accumulation. An important point is that they have orientation for a specific firm, but not for the labour market on the whole. The quest for symbolic capital is also present but is much weaker.

4. *"Careerists"* differ from other groups by stronger orientation for investment in symbolic capital along with human capital. The intention to invest in social capital is less evident.

5. *"Sociable pragmatists"* are characterized by orientation on investing in social capital and by total absence of orientation on investing in symbolic capital. Moreover, they are eager to contribute to human capital being interested mostly in future monetary returns.

6. *"Polyglots"* combine pronounced commitment to accumulation of all three types of capital being interested all at once in credibility of the diploma of specific university,

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[1] The typology of business school students by strategy profile was obtained with the help of hierarchical cluster analysis. The distance between clusters was calculated by Ward method as the increase of the sum of squared distances from the objects to cluster centers. The square Euclidean distance is used as a measure of proximity.

gaining both general and specific skills and competences, forming new social ties, and so on.

Table 2: Typology of Students by Type of Investment Strategy (column percent)

Determinants	Groups of students with different types of investment strategies					
	1	2	3	4	5	6
The opportunity to have new contacts and acquaintances	5.1	12.8	**53.8**	7.4	**100.0**	53.3
The relevancy (necessity) for the job, appropriate specialty	76.3	7.7	0.0	25.9	100.0	0.0
Acquiring new knowledge for the professional growth	72.9	94.9	88.5	88.9	100.0	**100.0**
Modern (new) education form	10.2	7.7	11.5	0.0	0.0	0.0
Prestige of a specific program	3.4	46.2	23.1	**55.6**	0.0	0.0
Prestige of the particular school diploma	5.1	23.1	0.0	**55.6**	0.0	86.7
High professionalism of teachers	52.5	61.5	34.6	51.9	18.8	0.0
Reasonable educational fees	3.4	0.0	0.0	0.0	0.0	0.0
'The firm paid and I decided to take the opportunity'	3.4	0.0	0.0	0.0	0.0	20.0
Improving prospects of career growth within the firm	1.7	20.5	0.0	0.0	0.0	0.0
Acquiring useful new contacts in order to change the current job	0.0	0.0	**26.9**	3.7	18.8	0.0
Increasing opportunities for changing the field of activity	13.6	**30.8**	11.5	11.1	0.0	0.0
Acquiring new knowledge and skills, that are necessary for the job	**94.9**	71.8	76.9	70.4	81.3	86.7
Acquiring additional general knowledge and skills	52.5	20.5	11.5	22.2	0.0	**93.3**
Acquiring currently lacking managerial skills	**81.4**	51.3	15.4	18.5	62.5	0.0
Getting a prestigious diploma	5.1	0.0	11.5	**88.9**	0.0	0.0
Mastering elements of prestigious external corporate culture	0.0	0.0	0.0	11.1	0.0	0.0
Improving prospects for salary growth	0.0	0.0	0.0	0.0	**37.5**	40
Strengthening status positions	0.0	10.3	19.2	22.2	18.8	0.0
Broadening the range of available job opportunities	0.0	0.0	**50.0**	0.0	0.0	6.7
Broadening the opportunities for gaining new social contacts	5.1	0.0	11.5	11.1	0.0	0.0
Broadening the range of the job authorities	11.9	0.0	0.0	0.0	0.0	0.0
Increasing job independence and self-determination	1.7	0.0	7.7	0.0	18.8	0.0
Raising the overall labour market competitiveness	15.3	**97.4**	11.5	14.8	62.5	**73.3**
Number of cases	**59**	**39**	**26**	**27**	**16**	**15**

The representatives of the outlined groups differ in a number of characteristics. Firstly, they have different basic education (see table 3). The majority of "professionals" and "polyglots" has technical basic education, whereas among the "sociable pragmatists" prevail those with economic education. Human capital accumulation is more important for those with non-economic education, since they do not possess sufficient economic knowledge and skills. "Professionals" and "polyglots" are more than others inclined to invest in human capital. On the contrary, "sociable pragmatists" with high position and short specific tenure prefer to invest in other forms of capital. They already have basic economic and managerial skills. The relatively high share of those with basic university education in humanities among "careerists" is also worth mentioning.

Table 3: Distribution of Students with Different Basic University Education Profile by Cluster[2]

Basic University education profile	Share of students with different education profile by cluster						Average
	1	2	3	4	5	6	
Economics	25.4	38.5	46.2	48.1	68.8	26.7	38.5
Humanities	10.2	10.3	0	29.6	0	6.7	10.4
Technical	64.4	51.3	53.8	22.2	31.3	66.7	51.1
Number of cases	59	39	26	27	16	15	182

"Careerists" and "polyglots" are relatively younger and with less past experience in entrepreneurial and/or management activities. Hence, their symbolic capital is not yet accomplished which explains their desire to invest in it. In addition, for "polyglots" their length of employment with specific firm tends on average to be higher than length of employment in managerial positions. This explains the fact that among "polyglots" there is the biggest share of those, whose education is sponsored by their firm. Furthermore, this peculiarity can determine the specific combination of orientation on capital accumulation.

For "sociable pragmatists" the average length of staying with their last employer is shorter than average (2.32 years contra 4.28 years on the whole). This is quite logical, since this group is more oriented towards the external labour market than towards the internal labour market of a specific company. Moreover, "sociable pragmatists" possess the highest status

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[2] Significance: $p > 9.99\%$.

(nearly 70% of them are top managers or important shareholders). Consequently, investing in social status (symbolic capital) is not of prime concern with them.

3.2. The Means of Investment

The groups described above differ by the amount of money, time and effort they are willing and prepared to invest as well as by employment and socio-demographic characteristics of their representatives. For instance, investments solely in human capital may mean emphasis on the quality of production and high moral principles. Symbolic capital accumulation may indicate that high significance is given to profitability and monetary gain. Priority orientation for social capital may reflect individual significance of interaction processes.

3.2.1. Investment of time

The majority of students (91.2%) attended more than ¾ of the classes. Hence, I consider the number of hours devoted to the preparation for the classes to be the best indicator of time investment.

On the whole, the described six clusters of students with different types of investment strategies are not very different in the time devoted to the preparation for classes. "Professionals" and "sociable" invest less time in studying. What is striking is that on one hand, "professionals" are the only group, which is inclined to invest solely in the human capital and, on the other hand, they invest less time in acquiring this capital. Nevertheless, this fact can be explained by the influence of another factor – the place of studying; HSE students study less than ANE students and the share of "professionals" is higher among HSE students. As to "polyglots", who are also supposed to be highly motivated, they study more than representatives of other groups (see figure 2).
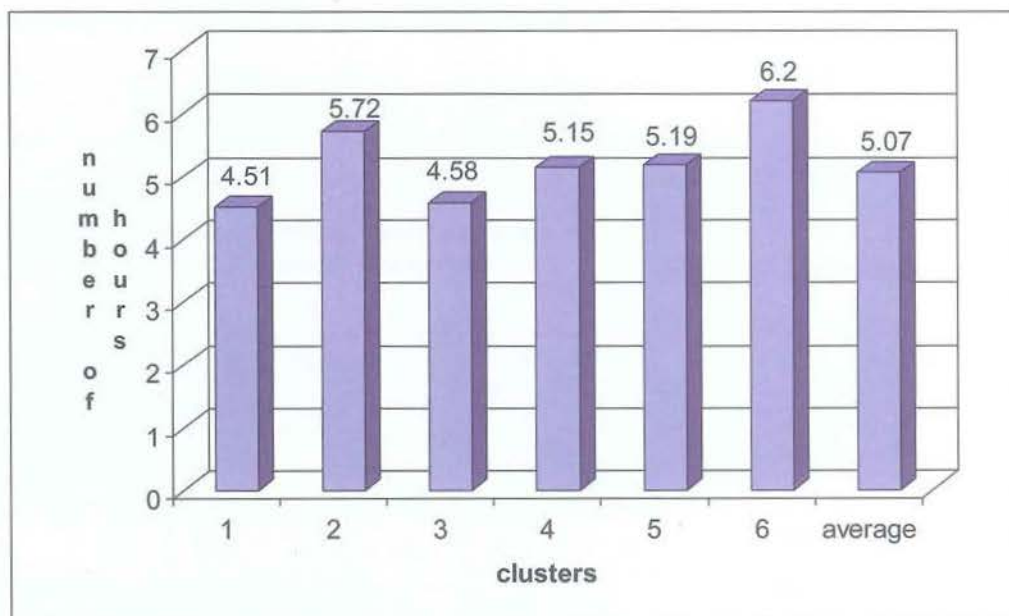
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Figure 2. Average Number of Hours Spent on Preparation for Classes per Week by Cluster

3.2.2. The source of financing

There is an association between investment priorities and the source from which the program participation of particular student is financed. "Careerists" pay for themselves more often than the others (69.2%), whereas the highest share of those, who are financed by the firm, is among "polyglots" (66.7%). It is possible that those who invest primarily in prestige of diploma (symbolic capital) are more ready to spend money than time, since they believe that spending money now will bring more money and other tangible benefits in future.

3.3. Students' Satisfaction with the Programs of Business Education

The rate of satisfaction is supposed to reflect implicitly efficiency of strategies chosen by business school students. According to the research results, the satisfaction rate as well as the correspondence between expectations and reality differs by the type of orientation on capital accumulation. The evaluations of quality of seminars and practical classes, balance

between theory and practice and the correspondence to the individual expectations differ most of all (see table 4).

Table 4. Satisfaction Rate of Students by Type of Investment Strategy

Education process characteristics	Groups of students with different types of investment strategies						Average
	1	2	3	4	5	6	
Range of courses	4.27	**4.33**	4.19	**4.07**	4.19	4.13	4.23
Quality of lectures	4.27	**4.36**	**4.35**	**4.11**	**4.00**	4.33	4.26
Quality of seminars and practical classes	**4.14**	4.00	4.00	**3.41**	**3.75**	**4.13**	3.95
Organization of educational process	4.17	4.23	**4.04**	4.19	**4.00**	4.13	4.15
Skill level of teachers	4.53	**4.69**	4.50	**4.41**	**4.38**	**4.80**	4.55
Acquiring knew knowledge and skills relevant to profession	**4.36**	**4.13**	4.23	4.22	**4.44**	4.27	4.27
Balance between theory and practice	**3.88**	3.74	**3.62**	**3.63**	**4,19**	3.73	3.79
Correspondence between expectations and reality[3]	**4.05**	3.85	3.88	**3.70**	**4.19**	**3.67**	3.91

Now let us describe the variance in satisfaction rate of students with different types of investment strategies. The satisfaction rate of *"professionals"* does not differ much from the average figures. Nevertheless their attitude to the skills and knowledge growth within the profession, balance between theory and practice and the correspondence between the expectations and reality is a bit above average. This can be explained by the fact that the representatives of this group do their best to contribute to their human capital. Hence, the human capital is accumulated more effectively.

The attitude of *"multi-investors"* is more distinct from the average. They evaluate the range of courses, the quality of lectures and the teachers higher than average. At the same time they expected more from accumulating new knowledge and skills. It is likely that "multi-investors" put much emphasis on formal characteristics of program in the process of choosing. Consequently, these formal characteristics are assessed relatively high, while the human capital accumulation is not enough for this group.

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[3]In this table the mean figures are presented (1 – not satisfied at all, 5 –entirely satisfied).

"Sociable" evaluate balance between theory and practice a bit less than on average. It can be explained by the fact that for this group social capital is of great importance. Practical classes form the best platform for experience exchange, building new ties and gaining social capital on the whole. Hence, the sufficient quantity of practical classes is vital.

"Careerists" are the less satisfied with educational process on the program they have attended. They assess almost all the characteristics of educational process (except for organization of education process and the growth of knowledge and skills) lower than average. Symbolic capital investment is the less connected with the educational process itself. It is possible that the careerists assumed that to this level of prestige should correspond to a better quality of educational process.

The *"sociable pragmatists"* assessment profile differs a lot from the average. The representatives of this group evaluate correspondence between the expectations and reality, balance between theory and practice and growth of knowledge and skills above average. At the same time they assess quality of lectures and practical classes, organization of educational process and the teachers rather low. In my viewpoint this is a very unusual distribution. "Social pragmatists" have a low opinion of the quality of all substantial elements of educational process but they expected even less. It is likely that human capital accumulation is not of primal importance to social pragmatists.

"Polyglots" are of quite different opinion of educational process. On the contrary the program did not meet all their expectations. But at the same time they evaluate above average the quality of seminars and practical classes and the teachers. Unlike "social pragmatists" human capital accumulation including general economic and general knowledge are vital for the representatives of this group.

3.4. The Difference between HSE and ANE

To begin with, HSE and ANE students differ by a number of socio-economic characteristics. In the HSE the biggest share of students is technical education (60.0%), whereas economics education is dominant (55.2%) among ANE students. The share of students who work in real sector is higher in the HSE (45.3%), while ANE students tend to work in consulting and business services (39.1%). Furthermore, the share of top level managers is higher among ANE students than among HSE students (45.3% contra 37.8%).

It has been established that position of a particular business school in the market for business education is linked to the students' investment strategies. Contradictory to the original hypothesis the students of HSE and ANE displayed a pronounced difference in their investment strategies as well as in their rate of satisfaction with the programs they went into.

Human capital accumulation is of great significance for students of both universities. At the same time the specific forms of human capital are defined by HSE students more accurately. The majority of ANE students intend to gain knowledge and skills necessary for their job. In turn HSE students aim to gain the lacking managerial skills (60.0 % contra 34.5%). In other words, managerial skills form the main subject of business education programs, while new knowledge and skills can also include basic economic and mathematic knowledge.

Symbolic capital investment is much more evident for ANE students (10.3%) than for HSE students (2.1%). It is possible that the reason for this is the difference between HSE and ANE reputation.

Social capital accumulation is more evident among ANE students. They are relatively more interested in career growth, building new acquaintances. These parameters are the direct indicators of social capital. On the other hand, indirect indicators are more present among HSE students (changing the field of activity, broadening the range of job positions).

To sum up the investment strategies, we will turn to our groups of students with different investment strategies. HSE students are more likely to contribute solely to human capital: the share of "professionals" is 42.1% (compared to 21.8%) in ANE. On the contrary, investments in social and symbolic capital are far more important to ANE students (see table 5).

Table 5: The Distribution of Groups of Students with Different Types of Investment Strategies by University, %

Cluster	University		Average
	HSE	ANE	
Professionals	42.1	21.8	32.4
Multi-investors	23.2	19.5	21.4
Sociable	11.6	17.2	14.3
Careerists	12.6	17.2	14.8
Sociable pragmatists	4.2	13.8	8.8
Polyglots	6.3	10.3	8.2
Number of cases	**95**	**87**	**182**

Despite the fact that the students of ANE put a stronger emphasis upon accumulation of social and symbolic capital, at the same time they devote relatively more time and effort to preparation for the classes as compared to their counterparts in HSE (see figure 3).

HSE students spend less time preparing for the classes than ANE students (in average 3.39 and 6.91 hours respectively). This result is controversial, since HSE students are more oriented to human capital accumulation and at the same time invest less time in studying. It is possible to provide several explanations. On the one hand, the education process could be better organized and the material can be better structured in HSE. On the other hand, ANE students could be stricter controlled and supervised and hence have to spend time studying. Another explanation lies in the fact that for ANE students human capital is not of less importance than to HSE students, despite the fact that they are more inclined to invest in other forms of capital.
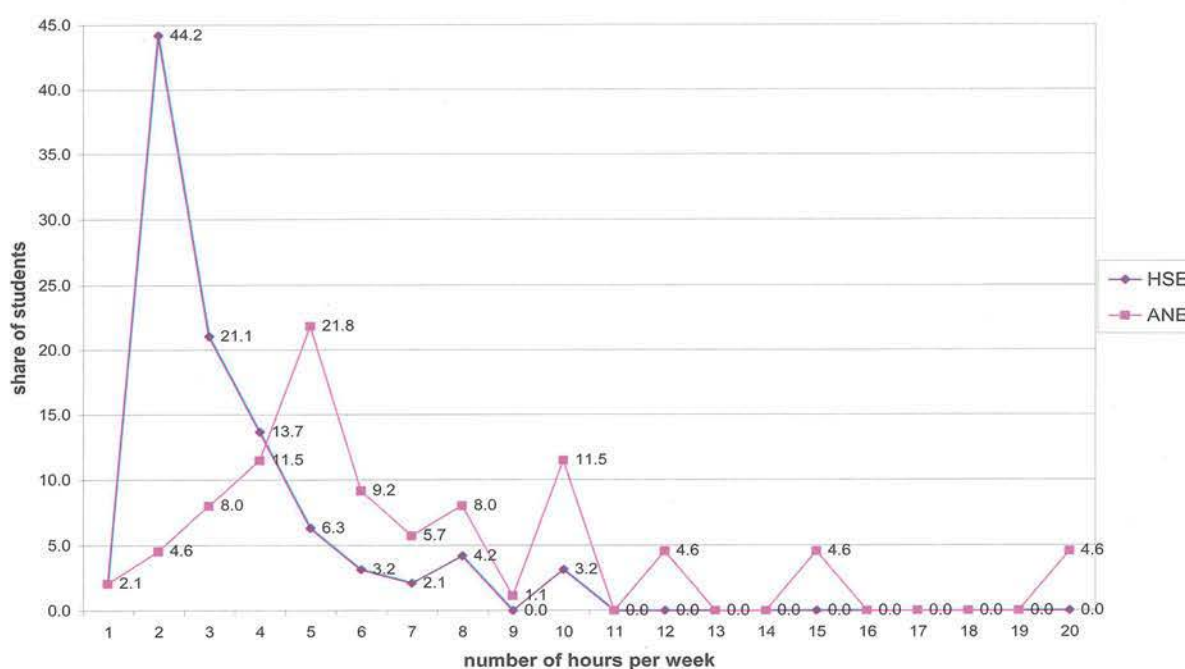
Figure 3: Distribution of Average Number of Hours per Week Spent on Preparation for Studies by University

It is worth mentioning, that MBA students in the USA devote much more time to self-preparation. According to my express survey,[4] US MBA students prepare for studies approximately 20-25 hours per week on average (maximum – 40 hours). As to the Russian MBA students, on one hand, they are inclined to invest in human capital but on the other hand, their strategy lacks the considerable amount of time for self-preparation. This can be explained by the fact that in US many MBA students do not work, whereas almost all Russian MBA students study and work at the same time. Consequently, Russian MBA students do not have enough time for preparation to the classes. US MBA students at their turn leave some extra place for time investments.

Furthermore, HSE and ANE differ by the source of financing their studies. The employer firms sponsor studies of about one half of ANE students (48.3%) and only of about one quarter of HSE students (26.1%). At the same time 68.5% HSE students and 42.5% ANE

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[4] Internet survey of students of business schools in the USA: 11 respondents from Cornell University (Ithaca, NY, USA), Ross School of Business, University of Michigan (Ann Arbor, MI, USA), Harvard Business School (Boston, USA), Wharton Business School, University of Pennsylvania (Philadelphia, Pennsylvania, USA).

students pay for their studies themselves. Consequently, ANE is more popular among employers.

Mostly students turned out to be satisfied with the business education programs undertaken and their expectations prove true. Still the students of ANE were a bit less content, they were more critical in their assessment of quality of lectures and practical classes and of the organization of educational process. Furthermore, their expectations proved a bit less accurate: about one fifth of ANE students have expected more from the program, whereas nobody from HSE is disappointed with the program.

4. Conclusion

The paper looked into the strategies of investment in business education and students' satisfaction with staying in business education programs.

The *strategies of investments* comprise different combinations of the principal capitals (human, social, and symbolic) in which the students invested. These investments include not only financial costs (broadly defined since some students paid their own money, while employer paid for education of others), but also the cost of time and effort allocated for studying (visiting lectures, self-preparation).

With the help of cluster analysis six groups of students with different types of investment strategies were pointed out: "professionals", "multi-investors", "sociable", "careerists", "sociable pragmatists" and "polyglots". These groups differ by the volume of money, time and effort they are willing and able to invest as well as by employment and socio-demographic characteristics of their representatives.

It was established that the positioning of a definite business school in the market for business education is linked with the students' investment strategies. Contradictory to the original hypothesis the students of HSE and ANE display a big difference in their investment strategies as well as in their rate of satisfaction with the programs they went into. While the students of ANE put a stronger emphasis upon accumulation of social and

symbolic capital, at the same time they devote relatively more time and effort to prepare for the classes as compared to their counterparts in HSE.

On the whole, the students' investment strategies were manifold but human capital accumulation was present in all of them and was most frequently proclaimed being the main expected outcome of the program. The amounts of time, effort and money endowments are dependent upon the dominant type of capital in the investment strategy.

Mostly students are satisfied with the business education programs undertaken and their expectations proved true. Still the students of ANE are a bit less content. They are more critical in their assessment of quality of lectures and practical classes and of the organization of educational process and their expectations proved a bit less accurate.

The variation in priorities of investment in different types of capital is an indicator of different attitude to the business and entrepreneurship on the whole. The investment strategy choice reflects the main values and possible objectives of business activity. Investment solely in human capital can mean the emphasis on quality of production and high moral principles. Symbolic capital accumulation may indicate that high significance is given to the amount of profit and financial gain. Priority choice of social capital may reflect the significance of interaction processes and social ties.

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State-Building and Democratization in Estonia

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Abstract
In this paper Republic of Estonia as one of the Post Soviet state is examined. The structure of this paper will be as in order: basic information about the Republic of Estonia, historical background, external relations, political structure, transition to democracy, market economy and nation building process and conclusion. This paper has importance for newly founded states or the ones which struggles for transition to democracy as it sets an example of a successful transition. The aim of this paper is to evaluate the post Soviet Estonia by comparing it with pre Soviet and Soviet periods.

1. Introduction

1.1. General Information about the Republic of Estonia

Estonia declared its independence from the Soviet Union in 1991. It is located in the North East of Europe and north of Baltic Sea. Its neighbors are Latvia and Russia. Its capital is Tallinn. According to 2009 data, its population is 1,299,371 with a -0.6% growth rate. Its youth population ratio is 67.5%. Estonia is a very small country with only 45,228 sq. km land area.

Ethnic diversity in Estonia is visible. While Estonians are composing 67.9% of population, Russians are the biggest minority and compose 25.6% of the total population. Ukrainians (2.1%) and Belarusians (1.3%) are the following Russian minority in the country. The official language is Estonian in the country. It has no similarity with Russian language and comes from the Finno-Ugric language family. The other languages spoken in the country

are Russian and Ukrainian. The major religion groups are Lutheran Christians and Orthodox Christians.

Its economic performance is one of the highest in the Central Europe. The share of industry in the economy is 29%, services 68.4% and agriculture is 2.6%. Even though it is originally an agricultural and rural country, its urban population is 69% of the total population. However, it can be said that urban areas are preferred generally by the Russian minority. Its industrial production is based on electronics, textiles, information technology and telecommunications. It has a $2.192 billion current account deficit and relatively high inflation rate (10.4%). Due to 2008 economic crisis, Estonia showed a declining economic performance. Its growth rate was 7.2% in 2007 became -3.6% in 2008 and unemployment rose from 4.7% to 5.7%. Nevertheless, as the Gini coefficient is examined (0.34) it can be said that there is still a relative equality in the income distribution especially compared to other post Soviet states. It has a high GDP per capita ($21,400).

Estonia, with other ties, has very close trade relations with Finland. Other than that, it has a significant term of trade with Germany and Sweden, but not that much with Russia which is one of its neighbors.

Its political system is parliamentary democracy with proportional representation. President of the state is Toomas Hendrik Ilves and Prime Minister is Andrus Ansip. Estonia's parliament is called Riigikagu which is unicameral. Parliamentary elections are held in every four years. Parliament afterwards elects the president. Estonian Reform Party, Center Party of Estonia and Social Democratic Party are the important political parties of Estonia. However, the communist past is not represented in the parliament.

Estonia became a European Union (EU) member in 2004. It is the member of Organization for Economic Co-operation and Development (OECD), North Atlantic Treaty Organization (NATO) and United Nations (UN). All these efforts are made to be as away as possible from Russia and its influence and as near as possible to Western world.

1.2. Historical Background of Estonia

1.2.1. Pre-Soviet Period

In the first century, tribes speaking Finno-Ugric language went and settled to the coastal and East Baltic. These regions will be named as Estonia later. Estonia, therefore, belongs one of the main three Finno-Ugric families with Hungary and Finland. Estonians nevertheless are not Slav. In the mid 12th century, Germans called this area as Livonia and came here to convert pagans into Christianity. In 1202, The Order of the Knights of the Sword was founded by the Teutonic Knights and they held the region until 1500s. In 1558, Teutonic Knights weakened and Sweden annexed the northern part of the today's Estonia. Same year, Terrible Ivan invaded the east part of the country and soon after Poland demanded the region in the south. For 70 years, these three powers struggled over the country. Finally, Sweden won and got the region into its territories. However, with the Northern War of 1721 Peter the Great defeated Sweden and controlled Estonia until 1917 Bolshevik Revolution. One of the most important legacies of pre Soviet history of Estonia is the close ties with countries like Germany and Finland. Its culture interacted with those and was produced like a social construction. As the perception of those countries as allies, Estonia constructed its culture in line with those countries. Moreover as enemy perception of Russia, Estonia constructed its culture and policy against Russia.

After Russian Revolution of 1917, Estonia became independent in 1918. Estonia struggled to get its independence from the Tsarist Russia. As Raun described in his article, Estonia had two important characteristics that make it different than others: high rates of literacy and civil movement and social mobilization since 1860s. Those special characteristics of Estonians with the declining pressure of Tsar created an opportunity for the elites to seize control over the Northern Baltic Region, especially Tallinn. With 1905 Revolution, they demanded some political autonomy however, cannot acquire until the tsarist regime ended. On the other hand, they participated in the State Duma and gained father experience about the governance. These experiences were very helpful in the future governance of the independent Republic of Estonia and its success.

After the collapse of Tsarist Russia, Estonia declared its independence and survived until 1940. The success of Estonia was due to two reasons as external and internal. First, due to its strategic importance between Baltic and Russia for Western world, it was able to attract economic, political and military aids from the Scandinavian countries and UK. Second, it was mature enough to survive and mobilize and independent movement. Legacy of this first independence for Estonia was very constructive for future experiment. Civic culture began to occur and by this experience Estonia became strong against the turbulences within the Soviet Union.

1.2.2. Years of First Independence

Within these years of independence, Estonia tried to form a western style democratic liberal system. The Constitution of 1920 has tried to achieve three important characteristics for the Republic of Estonia: democratic idealism, strict parliamentarian system and supplementing a universal suffrage to the Estonians. Even though some problems occurred during this period, it was positively affected civil society movement and future transition of Estonia after the Second Independence.

1.2.3. Soviet Period

On 23 August 1939 Germany and Soviet Russia made the secret agreement of Molotov-Ribbentrop. With this agreement, Baltic countries were given to Soviet Union. Stalin set heavily armed Soviet troops on the Estonian border forced Estonia to sign a mutual assistance pact on 28 September 1939. In a short while Estonia became the protectorate of Russia. However, direct Soviet aggression against Baltic countries occurred in June 1940. Russia accused Estonia of forming a conspiracy together with Latvia and Lithuania against the Soviet Union. Therefore, Russia sent more troops to invade Estonia. By the time Estonia had already been surrounded by the soldiers of the Red Army, consequently, it was easy to invade the country.

Soviet rule continued for over five decades. It influenced Estonians but the real question to be asked is "how much did it penetrate into the people?" For a while guerrilla movements were active against the invasion. Metsavennad (Forest Brethren) was one of them founded in the forests of Estonia. They were surprised about the Bolshevik occupation and thought that Western world would not be silent. Therefore, their aim was to hold Bolsheviks until the help comes from the allies. During the Stalin period, they were suppressed and imprisoned. After Stalin, they experienced a rebirth of culture with the decentralization of economic system. This gave them hope for possible autonomy; however, when Breznev came to power, the recentralization movement was launched and Czechoslovakia was invaded in 1968 this issue caused them to lose all of their hopes. On the other hand, they continued to struggle. They affected the other communist countries especially "Solidarity Movement" in Poland. The civil struggle can be seen in Letter of Forty which was a letter written and signed by forty academicians that declared that Estonia should be independent and free from any other country's influence. Thousands of people signed this letter and this was one of the most significant examples of social mobilization in Estonia.

As soon as Estonia declared and acquired its independence, it arranged all its movement in order to protect it. The idea in Estonia was that they were an independent state in 1940 and Soviets came and invaded their land. Therefore, this rule is illegal and they did not grant any of its influence or consequences. This also means that the Russian population in country is seen as illegal. This was a big issue for Estonia for the state building process.

After the Soviet occupation, Estonia was forced to cut its relations with non-Soviet countries and international market. Local natural resources of Estonia such as oil and rubber were used in Soviet production system. Economy was devastated because of the artificially low currency implemented as economic policy. Moreover, as the resources were acquired by Soviets and 8000 people were arrested after invasion. This caused a declining work force.

First signs of independence movements started as environmental issues. Right after, a public demonstration was organized to question the political legitimacy of SU in 1987. By 1988, for the first time, a political party apart from the Communist Party was founded. The

Popular Front of Estonia tried to awaken the civic energy and pressure the Communist Party for the reformation of the system.

Estonia and other Baltic countries actively created their transition period for independence. This period started with decline of USSR. Estonia, since the beginning of the Soviet rule made efforts to gain back its independence therefore, transition period was also supported by civil society and citizens. One of the civil society demonstrations was the Singing Revolution in Estonia which was done to show the world that Estonians want their cultural rights and independence. Independence efforts in Estonia had always been non-violent. This feature affected the success of the transition for the country. Transition to independence can be explained in three periods: First of all; Pre-transition years of 1987-1991 was characterized with the idea of movement for autonomy within the SU. However, in time this aim changed and became movement for self determination and finally full independence. Second was the period of transition which was started 1991 and continued for 13 months. This was between the failed coup and recognition of restoration of independence. In this period Estonia made its first democratic elections and Constitution of 1992 was written. Finally Era of Democratic Consolidation was started in 1992 and it still continues. Characteristic of this era is separation of powers, and democratic transition. The most important thing in this is that Estonia completed a bloodless transition to independence.

1.3. External Relations

1.3.1. Relations with Russia

Russians were seen as the occupation power in Estonia and illegal. Therefore, there was a general hatred against Russian minority could be seen. However, violence against Russians had never happened. After the deportment of ex Soviet troops from the country, the major issue between the Russia and Estonia was the border problem. There was a small land that Estonia wanted to keep but Russia declared that it belong to it, as the population was generally non-Estonian. However, as Estonia wanted the problem be solved and to enter the EU it gave up the land. This also indicates the importance of EU for Estonia. The

Border Treaties were signed between Russian Federation and Republic of Estonia on 18 May 2005 in Moscow. However, in 2006, Russian Federation demanded new negotiations with Estonia on the border matter; Estonia declared that it had no territorial claim on Russia and demands no new negotiations.

Russia re-recognized Estonia's independence in 1991 and extended the diplomatic relations. Estonia together with the other two Baltic countries is the one that caused the process of collapse of SU. They declared their independence and set examples for the other republics.

Estonia made efforts to build relations with Western organization such as EU and OECD. Its economic relations and trade with Russia is regulated under EU policy of Partnership and Cooperation Agreement (PCA). As a part of PCA, an agreement was signed in 2005 and the four common spaced were agreed upon: economic space, space of freedom, security and justice, space of cooperation in the field of the external security and space of research and education. Estonia FDI to Russia 208 million Euros which constitutes 4.4% of its foreign investment.

1.3.2. Relations with USA

Estonia and USA had been close relations and partnership. USA was first recognized Estonia in 1920 after it declared its independence. Relations continued during the Soviet invasion years. Close relations with USA gained Estonia many advantages in addition to close relations with Scandinavian countries. USA after 1991 recognized Republic of Estonia as the continuity of first republic. This helped Estonia as declaring Soviet rule illegal. Being recognized by US Estonia gained a sense of legitimacy in international arena. In 2004, Estonia became a member of NATO, these also made relations even stronger.

1.3.3. Relations with Scandinavian Countries

Both during the Soviet rule and independence era, Estonia had close ties with Scandinavian countries especially with Finland. Relations between Finland and Estonia had cultural, economic, political and historical dimensions. Besides the bilateral relations, during the EU accession process, Finland was very supportive about Estonia. This close ties was present in the soviet rule. Russia was allowing these ties because Finland was neutral and source of hard currency. For Finland, Estonia was a window opening to Soviet Union. Estonia saw Finland as a way of opening to west. There is still close cooperation between them on military, education, crime fighting and environmental issues. In the economic realm, Finland is Estonia's largest trade partner. In 2008, the trade with Finland was 1.3 billion Euros.

Estonia has close relations with Denmark and Sweden too. Denmark's Prime Minister Poul Schlüter was the first leader to visit Estonia in 1991. Estonia and Denmark had stable relations. In the international realm, Denmark supported Estonia's admission into EU and the first country signed the Association Agreement. Moreover, Denmark was the biggest supporter of Estonia in economic realm. Under the developing Baltic Sea Defense System project, Denmark is the leader of operations. Under this defense cooperation, Estonia has peacekeeping forces in Bosnia and in Kosovo.

Relations with Sweden have been close in areas of culture, economy and defense cooperation. In the area of environmental protection, Estonia and Sweden have been cooperating. Swedish Prime Minister Carl Bildt defended Estonia against Russian threats of economic sanctions.

1.3.4. Relations with EU

After the independence, Estonia had severe economic problems. Ruble lost its value, many goods could not be found and so on. Besides that, there was still a threat of Russia nearby

the country. Thus, admission into the EU was granting economic and political benefits for Estonia. It was defined as the major foreign policy goal of the country together with the membership of NATO. Starting with the independence, Estonia built diplomatic relations with EU and EU recognized Estonia in 1991. With the Cophenagen Summit the Free Trade Agreement was concluded. In 1995, Estonia applied for the full membership and Association Agreement was signed. In 1998, Agreement entered into force and Estonia became an associate member.

EU had a very positive effect on Estonia. If the economic benefits to be examined, Estonia received high amounts of aids from EU. (2004-2006: 789.9 million Euros of EU Structural funds and Cohesion Fund). All these economic aids were used to develop infrastructure, education and sustainable farming. In the trade realm, Estonia received FDI from EU. EU was also the only guarantor for Estonia in international economic realm. Having accessed to the Common European Market, Estonian companies increased their revenues. Between 2004 and 2006 exports and imports grew 24% per year. Estonia saw EU as the cornerstone for being a part of the global politics, in this sense it supported any movement that increase its influence and power. It also supports the enlargement policy.

1.3.5. Political System of Republic of Estonia

Estonia is a unitary parliamentary republic with a proportional representation which uses list system. Separation of powers is one of the most important aims of 1992 Constitution. Every four years parliamentary elections are held. Members of parliament are chosen in these elections. Afterwards, they choose a president. He or she serves for five years and he or she can be elected only for two consecutive periods. President has strong powers such as asking the president of the majority party to form the government, representing Estonia in international and diplomatic relations, initiating amendments to the Constitution, calling elections for Riigikogu and being the head of the armed forces. Executive power belongs to the Council of Ministers which is let by the Prime Minister. He or she nominates 15 ministers. If the Riigikogu fails to select a prime minister, the President may dissolve parliament and call for new elections. After the independence, too many parties were founded in Estonia which is a common issue together with other post Soviet countries. In

order to achieve stability there is 5% threshold in the country. It has a multi party system and coalition governments are generally founded. Current political parties are; Estonian Center Party, Social Democratic Party, Estonian United Left Party (represents the Russian minority) which are the left wing parties, Estonian Greens, People's Union of Estonia, Estonian Reform Party are the center parties and finally, Union of Pro Patria and Res Replica, Estonian Independence Party, Estonian Christian Democrats are the right wing parties. In the first republic, political system was characterized by the instabilities. Governments were made and collapsed constantly. Furthermore, there had been a constant communist takeover threat, while the second republic is more stable and liberal democratic. However, still there are problems and instabilities during the first years of independence. Personal ties with political parties were very low. Therefore, multiple political parties were founded in order to represent different numbers of people. Small parties are founded and there were no stability within the political party sphere. Moreover, due to the multiple numbers of small parties, government making can only be achieved by the instable coalitions. Thus, even only one party takes its support from government, it fails. This caused severe instability in the system. There were no ideology-based parties representing different ideologies. One thing was visible, that Communist past had not been representing and no marginal parties were allowed to establish. Only the Estonian Labor Party was established which can be seen as the successor of the Communist Party, but could only get 2% of votes in 1992 and 1995 elections. The general inclination of parties is being centrist or rightist, at the same time can be categorized as pragmatists and fundamentalists. Pragmatists are, generally against using the harsh Thacterist economic and social policies while the other is extremely Thacterist and neo-liberal in economic policies. If the personal leaders of Estonia is examined, Popular Front of Estonia was the major force of independence in the last years of USSR. It was founded in 1988 by Edgar Savisaar and Marju Laurisitin. Later this became the Estonian Center Party and moved Estonia together with Popular Front of Estonia.

2. Triple Transition of Estonia

After the collapse of USSR and independence, Estonia had to deal with three major problems: Nation-building process, economic rehabilitation and democratization.

2.1. Nation Building Process of Estonia

As it was stated in the article of Pettai&Molder throughout transition period, Estonia also struggled to create a strategy integrating its large Russian-speaking minority, left over from Soviet rule and totaling some 30% of the population (2009). In Estonia, in which the Soviet rule was seen illegal, nation building process and citizenship was a very problematic issue. Estonia declared that they do not recognize any of those years under the Soviet occupation and the governance of Estonian Communist Party and therefore do not recognize any of its results which are a heavy ethnic Russian population. According to Republic of Estonia, current republic is seen as the continuity of the First Republic which had to give a break due to the Soviet occupation. The problematic issue was that citizenship rights were given according to what? Will the Russians who came Estonia after the Soviet occupation be able to citizenship? Will the Diaspora who out migrated during the occupation be able to become citizenship of Republic of Estonia? Before answer these questions, it must be understood why it was problematic for Estonia to be rebuild its concept of nation and citizenship.

After independence, Russians was a big proportion of the society. Before the Soviet occupation, Estonia had 90% of ethnic Estonian population whereas after the occupation this number declined to 61% and the ethnic Russians population increased ten times. The important thing that should be kept in mind is that Estonia is a very small country having 3 million people living inside of it. Therefore, having 39% of 3 million people creates denationalization of republic. If these facts are kept in mind, the problem of nation building can be understood.

There are two important things behind this policy. First of all, Estonian had their own separate culture and identity from the Russians. Since the beginning of the occupation, they were struggling to preserve this culture from the Russian assimilation. During these years, a sense of nationalism was created in Estonia for preserving their culture and identity from the increasing migration from Russia and decreasing birth rate in the country. Second, they found Russians and their policies on Estonia illegal. They want, thus,

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Russians to leave the country. On the other hand, Estonia had a big Diaspora living out of the country. This Diaspora was generally consisting of high level and educated people. They were demanded to come back to country. All the nation building policies were established on these two grounds in Estonia.

Even though Estonia had these two significant problems, it still had some advantages compared to other post Soviet countries. First of all, they had the answer of the question: Who are we? They had already existing defined ethnic composition; therefore, it was easier for them to handle this transition relatively to the newly establishing states. As the citizenry already exists, the idea had already existing as well: all these ethnic Estonians are citizens, including the ones who were citizens of the first republic due to the continuity claim. Other are divided into two; first ones were the inclusion group which consist of the ones came and settled in Estonia before the Russian invasion and the second group which is called as foreigners consist of people coming during the Russian invasion and might be come in the future. Those foreigners can only become citizens though the way of naturalization. There had been some criteria for the naturalization such as language and minimum residence. According to Brubaker, there are three models of citizenry. First one is model of new state. This constitutes the initial citizenry for the newly founded state. Second one is restored state model whose aim is to confirm already existing citizenry and to make the system work efficiently. In this model, people that do not belong the original citizenry called as foreigners. Finally, the last one is compromise model, make two come together. The idea is that the redefining the original citizenry in order to create a balance between the original citizens and the one came later. As it was named after, it makes compromise among two citizens (Brubaker, 1992:279). After Estonian transition to independence, the nationality issue started to be questioned. First, a bill was proposed. In this bill, Estonia preferred to act as a compromise model in order to include the Russian and other minorities to the system. This bill declared that, people living in Estonia in 1918 became citizens without any conditions, whereas the ones want to come and get nationality after this date, must acquire it by naturalization, language criteria and ten or twelve years of residency (Brubaker,1992:282). However, this bill was protested by the people and rejected. Another one was proposed. In the second one, the pure restoration model can be seen. On February 26 1992, Law on Citizenship says that, "citizenship is restored to

interwar years and their descendants" (Brubaker, 1992:282). Others were declared as foreigners and the only way to acquire citizenship is the naturalization by two years of residence and a perfect knowledge of Estonian language. This harsh model continued until the candidacy to the EU. After that date, Estonia had to compromise in order to fulfill the Copenhagen Criteria.

2.2. Economic Transition

Estonia having been occupied by SU integrated into central planning economy. Therefore, what to produce and with whom to trade were all decided by Soviet Union Central Planning Unit (SUCPU). The consequence was that Estonia's trade with non-Soviet countries decreased to 2 or 3% of its GDP as Feldmann& Sally stated (2001:6). Its trade with COMECON countries represented country's two third of general trade. In the last years of SU, Estonia had faced significant economic problems. These problems continued after the independence as they were structural ones. After the independence, as there was no more SU or COMECON, Estonia had no opportunity to export and price of imported goods increased sharply. GDP declined 40% and the industrial production 60%. Furthermore, there was a hyperinflation between 1992 and 1994 which was the result of the low currency implementation by ex Soviet Union. Estonia launched the economic liberalization and recovery program earlier that the collapse of SU. The first private bank was established in 1989 as the starting point of economic reform movements. Price liberalization was launched in 1990. In 1992, having acquired its independence, Estonia started to use its currency as the symbol of its national authority (Brown, 1993). Policy was a currency board with the new Estonian kroon and Mark. Budget constraints were introduced to reach a stable macroeconomic environment. The fiscal reforms were especially about the decrease of state subsidies in the areas of agriculture. Tax system was amended and privatization movements started in line with the East German model. Buyers were chosen in accordance with their ability to reinvest the companies.

The first privatization wave started in 1991. However, when the center right government founded in 1992, a large scale of privatization occurred in Estonia. Finally, in the early years of transition to liberal economy, Estonia eliminated all the quotas, tariffs and

obstacles to the free trade. This also made the FDI easily flew the country. In 1993, all the remaining barriers eliminated and Estonia was truly open to free trade. Same year, Baltic Free Trade Agreement was signed. In 1995, Estonia started to see the benefits of its reform program and economy began to grow, by this time, the negotiation with World Trade Organization (WTO) was launched. The year of 1995 was very important for Estonia, this year the Free Trade Agreement with EFTA was signed as well; furthermore, Free Trade Agreement with EU and application to EU was submitted. Next year, Estonia signed FTA with Czech Republic, Slovakia and Slovenia. By 1997, Estonia got the highest growth rate in Europe with 10.6%. This economic success gave Estonia a recommendation from the European Commission a candidacy to EU. In 1999, Estonia became a member of WTO. By all these reforms, Estonia became the example of neo-liberal ideology.

Table1: Growh Rate, Inflation, Unemployment, Import, Export data of Estonia.

	1992	1993	1994	1995	1996	1997	1998	1999	2007	2008
Growth%	14.2	-8.4	-2.0	4.3	3.9	10.6	4.7	-1.1	7.2	-3.6
Inflation	107.6	89.8	41.7	28.9	14.8	12.5	6.5	3.9	6.6	10.4
Unemployment	0.9	5.5	5.1	5.0	5.5	4.6	5.1	6.5	4.7	5.7
Import($ billion)	39.7	85.4	15.57	23.98	28.76	35.16	39.28	34.30	14.75	15.35
Export($ billion)	43.0	76.6	12.11	16.60	17.64	22.75	26.74	24.37	11.08	12.63

In Table 1 the obvious economic success of Estonia can be seen. However, due to the 2008 economic crisis, Estonia has been facing some economic difficulties. As Pettai&Molder stated: "In 2008, Estonia's major challenge is reining in the effects of the world financial crisis and the collapse of a local real estate bubble. The center right government elected in march 2007 was forced to suspend many elements of its policy agenda and instead work out series of austerity measures, which at times proved difficult politically" (2009:200). However, still the situation can be compared with 1992. The important question here, what is the motivation for such a heavy privatization and trade liberalization in Estonia? Economic difficulties and need for transition from the state socialist system to liberal democracy is one reason, however, the other one is related with the foreign policy goal of Estonia being a member of EU. Therefore, Estonia had to convert state owned enterprises into private ones. Due to the EU's neo liberal structure, this was a must for Estonia. Moreover, when Estonia applied IMF for loans, IMF demanded a privatization program

under structural adjustment program. Estonian Economy Minister did not create a very fast privatization program. Instead, he preferred to rent state owned enterprises. However, Estonia had to implement EU and IMF programs in order to be granted credits from these bodies.

During the privatization period, many post Soviet states experienced high corruption cases. Political elites used their political authority to acquire these state owned enterprises very cheaply. In Estonia, however, corruption cases were very few. This can be seen as Table 2 corruption rankings. Still today, Estonia, among the other post Soviet cases, has the highest rank for combating corruption. As Brown explained, "Through the smallest of the FSU republics, Estonia had the highest living standard, nearly 100% literacy rate and the added advantage of a well established gray market with Finland" (Brown, 1993:494).

Table 2: Corruption Grading of Estonia. Grades are between 1and 7. 1 indicated best and 7 the worst.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corruption	3.75	2.75	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50

After the independence, enterprises of Estonia were 85% state owned. Therefore, privatization created mass unemployment. Moreover, GDP declined 35% in 1992 (Brown, 1993:494). During the Soviet period, Estonia was the source of raw materials for the heavy industry especially for scrap and metal.

2.3. Transition to Democracy

As Estonia became an independent republic, it started the efforts to become a member of European Community. With the Copenhagen Criteria, democracy was one of the most important factors for the admission of Estonia to the community. However, this was not the only incentive for Estonia to be democratized. As it suffered from the Tsarist Russia's pressure and autocratic regime, during the first independence it wrote the Constitution of 1920 which promotes a very strict parliamentary system and separation of powers. The focus of this constitution was democracy. This aims continued after the second independence as well. The accession process encouraged Estonia to promote this process. However, it should be understood that, democracy was not created as a result of only elite

consensus as it was in Russian Federation and Central Asian Post Soviet countries. Contrary, society was fully aware that democracy is the only way for them to be free and "European". Therefore, it can be said that, democratization is a result of cooperation between state elites and civil society.

Estonia, however, can be defined as ethnic democracy. This means that the ethnic Estonians can benefit from the positive sides of democracy, however, Russian minority is excluded from those benefits and responsibilities. Russians are blocked by not giving citizenship. Thus, they are not represented in political realm. As Smith and Wilson stated: "some 490.000 of Russian Diaspora do not have the right to participate in national elections or form their own political organizations" (Smith and Wilson, 1997:851). In time, with the pressure of EU this harsh limitation to Russian minority has been decreasing.

Table 3: Electoral Process, Civil Society, independent media, governance, judicial framework and independence, corruption and democracy scores. Grades between 1-7. 1 indicated best and 7 the worst.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Electoral Process	1.75	1.75	1.75	1.75	1.50	1.50	1.50	1.50	1.50	1.50
Civil Society	2.50	2.25	2.00	2.00	2.00	2.00	2.00	2.00	1.75	1.75
Independent Media	1.75	1.75	1.75	1.75	1.50	1.50	1.50	1.50	1.50	1.50
Governance	2.25	2.25	2.25	2.25	2.25	n/a	n/a	n/a	n/a	n/a
Judicial Framework and Independence	2.00	2.00	1.75	1.75	1.75	1.50	1.50	1.50	1.50	1.50
Corruption	3.25	2.75	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Democracy Score	2.25	2.13	2.00	1.92	1.96	1.96	1.96	1.93	1.93	1.93

In Table 3, the high grading of Estonia in democracy can be seen as well. Especially when compared to other 14 countries, Estonia has been increasing its status constantly.

3. Conclusion

From all aspects, Estonia is one of the success stories for a transition country. This is related to its civic culture, friendly relations with west and special partnership especially with the Scandinavian countries and previous independence and governance experience.

Estonia had EU, USA, IMF and many other Western organization and actors on her side. It got high amounts of economic, political and military support from these actors. Its population was small and well educated. Moreover, Estonia had never faced a bloody transition, civil war or military intervention from USSR that made country unstable. It was well recognized in international arena as well.

Apart from these successes, Estonia, as a common point with other post Soviet states, has been facing unstable political parties that cause problematic governments. On the other hand, it has some stable and continuing political parties that are near the achieve stability. Together with EU, Estonia has been trying to be a part of the international system. As a small state, it needs EU to make its voice louder. This makes Estonia different from other post Soviet countries.

In spite of all of its economic, political and social successes, Estonia has still not completed democratic consolidation. It has a long way to complete minority issues and achieve a sustainable development. 2008 crisis proved this again. However, in time, Estonia will be the one of the most successful transition countries and will set example for the others.

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State-Building And Democratization In Ukraine

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Abstract

Since the collapse of the USSR, all Post-Soviet countries entered into transition process. All of them have been reached different levels of transition that this paper will focus on transition of Ukraine. On the one hand, some scholars argue that there should be triple transition which includes economic, political and nation-building phases. On the other hand, some others argue that Ukraine should have quadruple transition. In any case, it was hard for Ukraine to have three or four transitions at the same time.

1. History of Ukraine

Ukraine is the second largest country of Europe which also has a geostrategic importance because of its location. It locates in Eastern Europe between Romania, Poland and Moldova in the west and Russia in the east. Moreover, Ukraine has a coast in the Black Sea. This strategic location and its richness in agriculture make Ukraine most famous fertile region for Polish-Lithuanian Commonwealth, Russian Empire and the Soviet Union (Magocsi, 1996).

Although its origins and development is uncertain, Ukraine is the origin homeland of the Slavs. The Slavic peoples and the Proto-Slavic ancestors were present in Eastern Europe since first millennium BCE. The homeland of the Slavs can be defined as all of Central and Eastern Poland, Southern Belarus and Northwestern Ukraine. In the middle of the first millennium BCE, the Slavs started to migrate to various directions and got in contact with nomadic and semi-sedentary civilizations that held sway over Ukrainian territory. The

direction of the migration was mostly toward south and southwestern part of Ukraine because of its natural wealth and the opportunity of trade with Greek and Roman cities along the coasts of the Black Sea. However, the trade among the early Eastern Slavs was poorly developed that it gained impetus in eighteenth century with the penetration of the oriental traders into Eastern Slavic lands such as Muslim Arabs (Subtelny, 2000). The primary livelihood of the Slavic people was agriculture and cattle raising that Ukrainian lands became an important component of the Khazar international trading network. In terms of religion, the system of belief of the Slavs was personal without any temples, statues or priests. However, as a result of transactions with other civilizations, they were affected from Christianity.

The Slavs lives under the protectorate of the Pax Chazarica and with the invasions of east, the Slavic tribes on Ukrainian lands were divided. Consequently, they had the opportunity to expand their agricultural and trading activities. However, no individual tribe had the strength to confront the Khazar Kaganate. The Slavs could only have the possibility to create the necessary strength in the mid-ninth century, with the new development in the region of Kiev – combination of local forces with a group of leaders: Rus' (Magocsi, 1996). The general acceptance of term Rus' refers to (1) people that is Varangians/Scandinacians, (2) the territory of the Polianians in central Ukraine and (3) the political entity which is called Kievan Rus'.

This development led to the existence of Kievan Rus' on the lands which were inhabited by East Slavs. Kievan Rus' began its existence in the ninth century and lasted in fourteenth century. The Khazar Kaganate and the stability it had created within its large sphere of influence begun to break down. A violent civil war took place in 820s. There were many political changes and tribal displacements that led to military conflicts and cut-off of trade which had the overall effect of producing instability in Khazar Kaganate and Ukrainian territory. During the ninth century, only the Byzantine Empire maintained and increased its power. Between the late-ninth century and early tenth century, the foundation of the Kievan state was built by Helgi/Oleh. His reign was ascribed as the era of growth and expansion of Kievan Rus' that was lasted for a century by his three successors – Ingvar/Ihor, Helga/Ol'ha, Sveinald/Sviatoslav (Magocsi, 1996). All four leaders faced with

two challenges; (1) to acquire control of the disparate East Slavic and Finnic tribes who lived along the trade routes and (2) to establish a favorable relationship with the nomads of the steppe and a positive military and economic position vis-à-vis the two strongest powers in the region; Byzantium and the Khazaria.

Helgi/Oleh, successfully, invaded Kiev and consolidated the East Slavic and Finnic tribes under authority of the Varangian Rus' and made himself the Prince of Kiev. At the end of the ninth century, Helgi/Oleh gained control over the most of the East Slavic tribes in the Black Sea coast. After his death, Ingvar/Ihor (912-945) came to power and maintained success of Kievan Rus'. In 941, he made an attack on Byzantium but it resulted as the defeat of Ingvar/Ihor. Then, in 945 after Ingvar/Ihor's death, his wife, Helga/Ol'ha came to power and she improved the relations with Byzantium. After her death, her son Sveinald/Sviatoslav came to power and continued to be expansionist as Helgi/Oleh. After the death of Sveinald/Sviatoslav, his successors made enormous territorial expanse and consolidated control over this territory between the years of 972 and 1132. They make Kievan Rus' one of the strongest and influential power in early medieval Europe. This was the era of political consolidation. However, there were two problems that emerged in front of them that (1) to create administration to unite and control the expanding territory of Kievan Rus' and (2) to protect Kievan Rus' from the invasion of nomads. After 1132, the period of disintegration and diffusion of political authority was started as a result of internal divisiveness and increasing external threat. The political fragmentation caused the disintegration of conglomerates and the emergence of hereditary principalities. The political problems led to the emergence of economic problems. In the eleventh century the importance of its location began to decline. The economic problems caused social upheavals because of exacerbated tense relations between the rich and the poor in the city.

Moreover, the Mongol invasion, in 1237 and 1240, was the end of Kievan Rus'. Kievan Rus' was totally collapsed. The Mongols were the nemesis of Kiev that they were the nomads along northwestern borders of China. They made the *coup de grâce* to Kiev under the command of Batu in 1240. This was the tragic conclusion of Kievan period in Ukrainian history.

To sum, it can be said that Kievan Rus' was not a state but a higher degree of political organization. There was neither a central government nor a specialized bureaucracy. More likely, the political problems were solved by use of force. During ninth century, it was the East Slavic agrarian society which was ethnically and socially homogeneous. However, the rapid expansion of Kievan Rus' made its society heterogeneous that resulted with the decline of Kievan Rus' (Subtelny, 2000).

After the decline of Kievan Rus', Ukrainian lands were ruled by the Mongols for eighty years and then because of the internal conflict in the Golden Horde that Ukrainian lands went under the rule of the Galicia-Volhynia until fourteenth century. In fourteenth century, with the decline of the Galicia-Volhynia, Ukraine was faced with political, economic and cultural low points and in the meanwhile its neighbors were on rise – Lithuania, Poland, Muscovy. The land was vulnerable that it could be easily concurred. This was the start of Polish-Lithuanian period. The Lithuanians were the first to use the advantage of the disadvantaged position of Ukraine and captured the land. They said: "We do not change the old, nor do we bring in the new." Despite the Lithuanian invasion in Ukraine, the Poles also invaded the Ukrainian land in 1339 and the invasion of Poles would exert more extensive impact on Ukrainians. They replaced the native rulers. In 1385, the Union of Poland and Lithuania was founded because of their important common interest and same enemy. As a result of the decline of Lithuania, the Union of Lublin was founded in 1569 and the Ukrainian lands and populace were transferred from Lithuania to Poland.

Consequently, between the fourteenth and sixteenth centuries, Lithuania scored most initial gains in Ukraine and its rule was the most acceptable for inhabitants. However, the aggressive nobility of Poland pushed the Lithuanians from Ukraine by use of force. The most important effect of Polish dominance was the assimilation of the Ukrainian elites into the culture of ruling powers. They begun to identify themselves with the culture of the dominant Poles and the Ukrainian nobles that Ukrainian elites lost their readiness to defend local interests. Then the rapid expansion of Tsardom of Moscow and Crimean Khanate affected Ukraine.

Henceforward, Ukrainian lands faced with influence of the Cossacks who were free and masterless nomads that they lacked a well-defined place in society and lived on its unsettled periphery. They were originally Turkic and lived in the frontier of the towns. They emerged in thirteenth century but their number was increased in sixteenth century. Besides the Cossack influence, Ukraine faced with the inclusion of Turks. The struggle of the Cossacks against the Tatars who were ruled by Ottoman Turks changed the negative image of the Cossacks in the eyes of Ukrainian society. Cossack raids against the Ottomans reached a high point between 1600 and 1620. As a result of their success, Cossack self-confidence grew. However, Polish government was disturbed by this kind of Cossack expansion that they denounced the Cossacks. This led to the uprising of the Cossacks in 1591. The uprisings continued for a while until the Poles entered the camp and massacre the unarmed rebels.

The Poles thought that they solve the Cossack problem. In 1616, Sahaidachny became the most outstanding Cossack leader. He conciliated with the Poles and mobilized the large Cossack armies that fought for the Poles in continuous wars against Moscow and Ottomans. Thus, Cossackdom had entered the mainstream of Ukrainian society. After his death, the relation between the Cossacks and the Poles was again deteriorated. There were five reasons for the Cossack revolts that occurred in Ukraine during forty-five-year period; (1) many of the rebels were peasants, (2) the revolts lacked detailed planning and long-term goals, (3) they did not know what they want to achieve, (4) the rebels were limited and erratic, (5) socio-economic differences among the Cossacks added to the problem of inconsistency of action (Subtelny, 2000).

Between the eighteenth century and twentieth century, Ukrainians lived under two empires: Russian Empire and Habsburg Empire. However, the majority of Ukrainians – approximately 80% - lived in Roman Empire. In both empires, there were vast territorial conglomerates containing huge populations of ethnically and culturally diverse people. Political power was centralized in the hands of the emperor. In contrast to Ukrainian nobles, who dominated the society in eighteenth century and acted on the principle of less government, the imperial bureaucrats, who governed in the nineteenth century, believed that more rules and regulations would be better for society.

Ukrainians were linguistically and culturally closely related to the Russians that it was easy for the Russian Empire to saw Ukraine as a Russian land. The most important sign of the Russian imperial presence in Ukraine was the army. Furthermore, in 1797, the conscription was introduced in Ukraine. After a long period of time, Ukrainians revolted against the imperial rule. In 1848, the segments of West Ukrainian society revolted against the Habsburg Empire as they behaved to Ukrainians as their subjects. Thus, it was the first time that Ukrainians resolved their problems in the modern era to enter the political arena. Meanwhile, Ukraine's political activism increased in the East Galicia as a result of Ukrainians in that region. However, this situation disturbed Polish government and led to the growth of Ukrainian-Polish antagonism. The Poles saw East Galicia as the cornerstone of their plan to restore Polish statehood. Both sides tried to solve this issue in the Prague Conference however it was failed because of opponents. The modern start of Ukrainians on the international political stage was longed short. Onwards, Ukraine stayed under the imperial rule of Russia.

2. Ukraine under the Soviet Rule

In 1917, during the World War I, Russian monarchy was disintegrated that Ukrainian nationalists seek for independence. However, in the same year, the Bolshevik Revolution was organized by Lenin that Ukraine had a chance to get its independence. Ukraine achieved a short-lived period of independence between the years of 1917 and 1920. Then it went under the control of Soviet Russia this time. During this time period, Ukrainians supported the anti-Bolshevik forces within Russia. Ukraine wanted to remain autonomous within a wider Russian union which meant that Ukrainians wanted national Communist Party which could act behalf of Ukraine. However, Bolsheviks refused to accept this proposal that Ukrainians started a civil war against Bolshevik forces. Ukrainians were protected by Germany that Ukrainians could insist on their demand. Onwards, they gained their early independence in 1918 with the Peace Treaty of Brest-Litovsk. They were given the local organization but it did not have autonomy. After a while Ukraine was conquered by Bolsheviks. Then the All-Union Congress of Soviets met in Moscow in 1922 and adopted a declaration establishing the USSR. It was a federal state that its government was

formed in 1923 and its constitution was adopted in 1924. The departure from the internationalism that Bolsheviks proclaimed in 1917 and practiced until early 1930s was predetermined by the actual balance of forces between the Russians and non-Russians in the post-1917 decade. The actual revolution took place in the 1930s when the elites of the non-Russians were decimated that Russian language and culture assumed as a privileged position (Szporluk, 2000). Lenin saw nationalism as a threat to the integration that he did not exclude the language right to different regions but banned the making of nationality based political organizations. Although Bolsheviks argued that the USSR was a federal state, they did not really want to form this kind of state which meant the decentralization of decision-making power. In contrast, Bolsheviks wanted to centralize the army and the political police.

Lenin desired the party to remain above all the nationalities and wanted to prevent the reassertion of Russian nationalism. The Russian communism began with the peace of Brest-Litovsk which for a short time reduced Russia to its ethnic borders. This status quo was ended by Stalin in 1930s. Soviet Regime was established in Ukraine and other republics with the help of the Red Army that most of the republics' relations were regulated by treaties with Moscow. According to these treaties, Russian government claimed authority over economy, military matters, transportation and communication. Despite the fact that Russian government did not want such individual relations with foreign countries, Ukraine continued to maintain its diplomatic relations with Poland, Germany and Czechoslovakia.

In 1922, Stalin proposed to transform Ukraine into autonomous republic of Russian Soviet Federated Socialist Republic. Thus, domestically and internationally, they amounted to the restoration of a single Russian state that would ruled by Communism. The communist state would bear the name of Russia and the inhabited non-Russians would be granted a national minority status within Russia. However, Lenin rejected this proposal that this would lead the rise of Russian nationalism in the Union. In fact, the opposition of Lenin to Stalin's proposal and the adoption of the constitution including the right of using national languages for non-Russians facilitated the acceptance of Soviet regime in the non-Russian areas.

After Lenin, Stalin had the opportunity to solve the problem of nationally minded Communists. He totally changed the structure of the Union. The decade of 1930s refers to collectivization, industrialization, urbanization but also, mass arrests, deportations and killings. It was devastated for non-Russian nationalities. In Ukraine, the removal of, firstly, the non-communist technical and cultural intelligentsia, secondly, the non-Stalinist Communists and then, even the Stalinists resulted in the replacement of Ukrainian cadres by Russians. Stalin aimed to make Russification in Ukraine as well as other non-Russian republics. However, Stalinism did not remove Ukrainian language completely as it was used in rural areas. Although Russian-language schools were built in Ukraine and the Ukrainian-language schools maintained in small towns and villages. Nevertheless, this score was not enough for the Communist Party that in the twenty years, since Stalin died, the party has taken several different approaches. Between 1953 and 1958, it was declared that the deported nationalities were permitted to return their former homelands and more non-Russians occupied important party and government posts in their republic and the central administration. However, when Khrushchev came to power, he made it voluntary to have second Soviet language course. He also declared that who declare Russian as their native tongue could have privileged position. This caused more resentment among non-Russians. After the fall of Khrushchev, the Soviet officials have been more careful about the non-Russians sensitiveness.

By 1970s, the percentage of Soviet citizens who declared themselves as Russian nationality was lower than the percentage of the year 1959. Before 1980, the Russians might become minority in the USSR. Thus, it is obvious that the nationality problem remained throughout the 1970s (Szporluk, 2000). In most countries, it would be no cause for a particular alarm if a low population growth in some regions were balanced by high population growth in other regions. However, the disparity between the European parts of the Union and the Asian part is not just a matter of geography. It means the weakening of Slavic element and a strengthening of non-Slavic groups, especially Turkic groups. Thus, it has a political significance. Soviet officials introduced a policy of birth control for Asian parts and a policy of encouraging population growth in European areas. Consequently, the births were prevented and the many births were born in wrong place and to parents who spoke wrong languages. Moreover, in 1960s, millions of Soviet citizens had been expected

to leave highly populated areas of the country, such as Ukraine, and move to Siberia or Far Eastern provinces of the Soviet Union. These demographical problems instigated the nationality problem between the Russians and the other nationalities.

In detailed analysis, Ukraine included relatively, to other Easter European republics, more Russians. Also, Ukraine had the highest rate of population which is a composite of regions with different historical experiences and different populations. It will be better to divide Ukraine into three regions and then analyze. First, the East Ukraine can be defined as the region which includes both industrial and agrarian areas of Ukraine. This region has been the most Russianized. The number of Ukrainian added to population of this region was lower. Since 1959 this area also included the relatively greatest number of Ukrainians whose native language was Russian. Thus, the population in Donbas, in 1970, spoke mostly Russian. Second, the Southwestern region of Ukraine which comprises 13 oblasts of Ukrainian Soviet Socialist Republic has the largest population. Its population growth was much more slowly than East Ukraine. Historically, this part of Ukraine had little influence of Russians that the number of Russians added to population of this region was lower that the East Ukraine. Finally, the Southern region which included Crimea, Odessa, Kherson and Mykolaiv was one of the areas of greatest population growth of Russians. The Southern region unlike the other two seems to be still in the process of acquiring its ethnic shape. Both Russians and Ukrainians have been increasing fast. In 1959, 22.1 percent of Ukrainian's Russians and only 8.9 percent of Ukrainian's Ukrainian lived in Southern region. By 1970, the percentages rose to 23.7 and 9.9. The overall numerical increase of Russians in Ukraine was serious.

Table.1: Ethnic Composition of Soviet Republics in Eastern Europe (in thousands)

	Total Population			Russians			Titular Nation(s)		
Republic	1959	1970	Change from 1959 to 1970	1959	1970	Change from 1959 to 1970	1959	1970	Change from 1959 to 1970
Estonia	1,197	1,356	13.3%	240	335	39.6%	893	925	3.6%
Latvia	2,093	2,364	12.9%	556	705	26.8%	1,298	1,342	3.4%
Lithuania	2,711	3,128	15.4%	231	268	16.0%	2,151	2,507	16.6%
Belarus	8,056	9,002	11.7%	660	938	42.1%	6,532	7,29	11.6%
Moldova	2,885	3,569	23.7%	293	414	41.3%	1,887	2,304	22.1%
Ukraine	41,869	47,126	12.6%	7,091	9,126	28.7%	32,158	35,284	9.7%

Source: Szporluk (2000)

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It is clear that Russians are ethnic minority in Ukraine. As a result of Ukrainians close ties with Russia, in many non-Russian republics of the Union, Ukrainians were seen as Russians that it creates the Ukrainian identity problem. Ukrainians had the role of Russifying Estonia and Latvia. When Ukrainians move upwards and become technicians or scientists, they become Russified and mobile in entire USSR. When they leave Ukraine, they function as Russians. It was because Russians in Ukraine are expected to use Russian language and they have superior positions in society, however, Ukrainians do not have this kind of rights outside the Ukraine.

Table.2: Ethnic Composition of Major Regions of Ukraine

Regions	Total Population			Ukrainians			Russians		
	1959	1970	Percentage Change	1959 (%)	1970 (%)	Percentage Change	1959 (%)	1970 (%)	Percentage Change
Donbas	6,714,220	7,642,545	13.83%	56.36%	53.69%	8.43%	33.38%	41.03%	22.90%
South	5,066,132	6,380,614	25.95%	56.91%	54.96%	21.64%	24.54%	34.01%	38.57%
Dnieper	5,386,561	6,377,109	18.39%	77.64%	74.75%	13.98%	14.86%	20.81%	40.07%
Northeast	5,665,553	6,037,018	6.56%	81.01%	78.50%	3.26%	15.18%	18.70%	23.23%
Central West	11,238,688	11,932,950	6.18%	88.28%	87.54%	5.28%	5.92%	7.70%	29.99%
West	7,799,058	8,754,552	12.25%	87.16%	88.20%	13.59%	4.60%	5.09%	10.60%
Ukraine (total)	41,870,212	47,124,788	12.55%	76.81%	74.87%	9.72%	15.05%	19.37%	28.71%

Source: Szporluk (2000)

Although Russian population was high in some regions, Ukrainian population was increasing quickly in some regions. In comparison to the other non-Russian republics' capitals, Ukraine has the highest rate of Russian population in its capital. This means that Ukraine was the most affected non-Russian country from the Russian influence.

Table.3: Russians in Republic Capitals

Capital City	Total Population (1970)	Russians (1970)	Russians in Republic who Know Republican Language (%)	Russians in Capital who Know Republican Language (%)
Frunze (Kyrgyzstan)	430,618	284,676	1.5	0.72
Alma-Ata (Kazakhstan)	729,633	512,900	0.99	0.73
Ashkhabad (Turkmenistan)	253,118	108,144	2.08	1.23
Dushanbe (Tajikistan)	373,885	157,083	2.36	1.25
Tashkent (Uzbekistan)	1,384,509	564,584	3.77	2.47
Baku (Azerbaijan)	1,265,515	351,090	7.56	5.14
Chisinau (Moldova)	356,382	109,313	13.34	11.84
Tallinn (Estonia)	362,706	127,103	12.57	12.23
Riga (Latvia)	731,831	312,857	17.08	15.15
Tbilisi (Georgia)	889,020	124,316	10.51	17.86
Minsk (Belarus)	916,949	214,208	20.6	17.88
Vilnius (Lithuania)	372,100	91,004	30.76	20.45
Yerevan (Armenia)	766,705	21,519	18.95	30.95
Kiev (Ukraine)	1,631,908	373,569	25.95	41.05

Source: Szporluk (2000)

Szporluk (2000) argues that there are two major alternatives for survival of Ukraine and the Ukrainians within the USSR. The first alternative would be the division of Ukrainian SSR along ethnic-nationality lines which means that the most Russian Speaking Donbas and some other oblasts would be separated from Ukraine, thus, the size of Russian-language element will be decreased in Ukraine. The second alternative would be the remaining of Ukrainian territorial integrity and redefining Ukrainian nationality in a territorial sense. This refers to the considering itself regardless of its language. Later on, the second alternative was actualized by Ukrainian administration after the collapse of USSR and the declaration of Independence of Ukraine in 1991.

Although Soveitization was the leading phenomenon in USSR, de-Sovietization was inevitable after the reforms of Gorbachev. Stalin and his successors – Khrushchev, Brezhnev, Andropov, Chernenko – manipulated the symbols of the Russian statehood and promoted Russification of the non-Russians. But, also, the Soviet leaders did not allow Russians to express themselves. Besides this paradox, it was also clear that Russian nation had superiority compare to non-Russian nations that under the Gorbachev's reform – perestroika – Russian nation was the first to express itself. Moreover, the rich

infrastructure – journals, research institutes, theaters– and their special privileges as the leading nation made it easier to emancipate from Sovietism for Russians compare to Ukrainians. It is important to mention that under the rule of Soviet regime, the Ukrainian-language press was hurt severely. There were significant loss of title of newspapers and journals. The anti-Ukrainian course in the media was started before 1975 – the Ukrainian-language scholarly journals were closed, the Ukrainian-language periodicals were reduced, the use of Ukrainian in publications was reduced.

Table.4: Average Press Run of Ukraine

Year	Press Run (per issue, in thousands)
1970	300-360
1975	332
1976	332.4
1977	252-332.4
1978	250-270
1979	230-238
1980	144-240
1985	120-124

Source: Szporluk (2000)

In spite of everything, with the breakdown of Soviet regime as a result of reforms of Gorbachev, as other non-Russian republics, Ukraine gained its independence in 24 August 1991. This was the start of new era in Ukrainian history.

3. Nation-Building in Ukraine

The nation-building process was started in 1991, after the declaration of independence. Ukraine mobilized its forces and built coalitions among former rivals and in the end attained their goal of national independence without fight against outside forces, civil war or unrest. The coup of August 1991 was an external factor for Ukraine that affected the domestic situation in Ukraine. Many Communists who organized the August coup thought that it was Ukraine who caused the disintegration of the Union. However the coup was not successful that it brought the end of Soviet Union.

Following Russian's declaration of sovereignty in June 1990, the Ukrainian Parliament adopted its own declaration to the same effect. It meant Ukraine's neutrality and spoke about Ukraine's right to have its own military. The declaration publicized the concept of "the people of Ukraine" as an entity including all citizens regardless of their ethnic or religious differences because the concept was civic and territorial (Szporluk, 2000). In 1991, for the first time Ukraine had a parliament in which all of its regions represented although it was an imperfect representation. Ukraine was getting its first lesson in non-communist politics and was beginning to create rudiments of tolerant and pluralistic political culture. These were the important elements of Ukrainian nation-building process. It is better to add that it was the Ukrainians own choice and action to gain their independence. This was the common decision of both Communists in Ukraine and the nationalists that in the Ukrainian Parliament – Verkhovna Rada – both sides were agreed upon to break with Moscow although the Communists were the majority. The high-ranking officers who served in Soviet army were given the task of creating Ukrainian army and air forces.

There were many problems in the nation-building process that the restructuring and reforming Ukraine's economy, creating modern state machinery, building democratic institutions and developing extensive relations with the outside world. Ukraine, first, focused on nation and state building before launching into democratization and marketization that the economic problems did not badger Ukraine until today (Kuzio, Krauchuk, and D'Anieri, 1999). Ukraine was a proto-democracy that those who knew how to make Ukraine independent were not best qualified to guide it afterwards. Thus, the nation-building process inched along.

According to Kuzio, D'Anieri and Kravchuk (1999) there should be a quadruple transition in Ukraine rather than triple transition. Moreover, Ukraine needs to undertake all four transitions simultaneously. However, Ukraine could not deal all these four transitions at the same time as it mentioned above.

Obviously Ukraine needs to develop a comprehensive program of economic, social, cultural and political development. This would coincide with the aftermath of the election of the second President of Ukraine – Leonid Kuchma. Also, the adoption of first Constitution would be done during his presidency.

4. Economic Situation in Ukraine

"Ukraine is a lower middle-income country, with a GDP per capita of US\$ 3,210, and significant economic potential as a result of its well educated labor force, large domestic market, access to a variety of resources including some of Europe's best agricultural land, significant coal and some oil and gas reserves, and a strategic location connecting Europe, Russia and Asian markets." (World Bank Official Website)

World Bank defines Ukraine as a lower middle-income country. As it mentioned above, it is because the predecessor presidents of Ukraine focused too much on nation-building and neglected the economic life. This created bad economic conditions for both men and women. It led to the emergence of women trafficking.

After Ukraine got its independence, there were no real economic developments. After 1998-1999 financial crisis, Ukraine has experienced recovery between the years of 2000 and 2007. The financial crisis of 1998 led to a realignment of the real exchange rate, which together with fiscal and financial stabilization efforts, initial structural reforms, a favorable external environment and significant idle industrial capacity, helped to jump start the economy. By late 2007, the economy was showing increased signs of overheating with pressures intensifying in the first half of 2008. Until 2007, the widening of the current account deficit was financed by large foreign borrowings and FDI. Most of these foreign borrowings came from IMF that Ukraine has a debt stock. In 2008, price pressures mounted driven by higher food and energy prices, but also by an inconsistent macroeconomic policy mix with loose fiscal and monetary policies.

By the fall of 2008, the global financial crisis exposed Ukraine's inherent macroeconomic vulnerabilities and led to an economic crisis. Moreover, slowing global demand led to a

sharp fall in the price of steel which is Ukraine's main export. The exchange rate has depreciated sharply (close to 40 percent to USD since September 2008) to adjust to the terms of trade shock and the drying-up of foreign financing, closing the current account deficit. The IMF Standby Arrangement approved in November 2008 continues to be the main anchor of the authorities' anti-crisis response.

The World Bank has assisted Ukraine's transition to a market economy since the country joined the institution in 1992. It helped modernize the budget system through the creation of a state treasury, eliminate barter payments, and improve overall financial and payment discipline. The Bank played an important role in advancing initial banking and financial sector reform and in improving the business environment. Also on May 16, 2008 Ukraine became the 152nd member of the WTO. With WTO accession, Ukraine has fulfilled the conditions established by the EU to begin negotiations on a Free Trade Agreement. In 2008, Ukraine ranked 44th in the world in GDP.

Today, there are many development programs for Ukrainian economy such as Public Finance Modernization Project, Urban Infrastructure Project and Power Transmission Project of Ukraine. The Public Finance Modernization Project aims to strengthen public financial management in terms of operational efficiency and transparency. It includes strengthening institutional capacity and operational effectiveness, development of an integrated public financial management system and project Management. The Ukraine Urban Infrastructure Project aims to assist participating utilities in moving towards higher quality and reliability of services and reducing the costs of service through a series of institutional improvements and selective investments in rehabilitation and replacement of deteriorated water supply, wastewater and solid waste systems. The Power Transmission Project of Ukraine is to improve the security, reliability, efficiency and quality of energy supply, and, therefore, facilitate unimpeded operation of the energy market, both domestically and internationally.

5. Presidency of Leonid Kravchuk

Krauvchuk was the first president of independent Ukraine and he was in office between 1991 and 1994. First of all, he focused on the creation of national identity which was never existed. Thus, the creation of national identity had priority than the creation of democracy and market economy. The reason why the referendum for independence was passed with high amount of votes related to the nationalism of people. However, there was opposition from the economic and political elite as a result of the bankrupt of Ukrainian economy which was dependent heavily on Russia. This led to undermine the efforts of centralize political control. Moreover, Kravchuk had weak control over local governments that he lost his power over eastern provinces which were closer to Russia and were populated by Ukrainian-Russians. Thus, as a result in the next elections Krauvchuk lost the election to Leonid Kuchma.

6. Presidency of Leonid Kuchma

Kuchma was the second president of Ukraine and was the most problematic president. Kuchma was the leader of the Ukrainian Communist Party that he supported the integration with Russia to get the support of people who had economic interests. Ukrainian nationalism was a force behind the strengthening of an autocratic presidency in 1990s but in early 2000s, coincided with the second election of Kuchma, the Ukrainian nationalism was a mobilization resource backing the overthrow of autocratic rule (Way 2006). In contrast to Belarus, Ukraine witnessed strong regionally based challenges to pro-incumbent electoral control both in 1994 and in 2004. Thus, Kravchuk faced pro-opposition electoral manipulation in eastern Ukraine in 1994 while Kuchma apparently confronted pro-opposition manipulation in the West in 2004.

Table.5: Ukrainian Parliamentary Election Results, 1994

EXTREME NATIONALISTS	
Ukrainian National Assembly	3
Ukrainian Conservative Republican Party	2
MODERATE NATIONALISTS	
Rukh	20
Ukrainian Republican Party	8
Congress of Ukrainian Nationalists	5
Democratic Party of Ukraine	2
CENTRISTS	
Inter-regional Reform Block	4
Ukrainian Democratic Renaissance Party	4
Civil Congress of Ukraine	2
Social Democratic Party of Ukraine	2
Labour Party	4
Christian Democratic Party of Ukraine	1
COMMUNISTS	
Ukrainian Communist Party	86
Peasant Party	18
Ukrainian Socialist Party	14
UNAFFILIATED	163
Total	338
*112 seats remained unfilled	

Source: Szporluk (2000)

In Ukraine in 1995–2004, Kuchma generally dominated parliament but strong and vocal anti-incumbent parties presented persistent and sometimes effective sources of opposition. One reason why some politicians advocated more presidential power which was cited often by Kuchma himself in 1995–96 discussions of the constitution is that parliament was completely ineffective. Also, the Constitution was adopted during his presidency, in 1996, with the support of the right and the opposition of the left (D'Anieri, 2005).

Kuchma utilized fear of anti-sovereignty Communism to convince Ukrainian nationalists to back stronger Presidential rule and support his reelection in 1999 that the elites started to worry about Russian wealthiest and more developed businesses that they would capture valuable properties, banking and finance sectors. Thus, Kuchma became supporter of Ukrainian independence overnight. Last two years of his presidency was shaped by a shift in the government's relations to Russia on the one hand and continued majority popular

support for Ukrainian sovereignty on the other hand. This created the basis for an anti-incumbent majority coalition that ultimately toppled the Kuchma regime. It was also the result of his closer relation with Putin and damaged reputation. Thus, Kuchma lost his power to Viktor Yushchenko in 2005.

7. Orange Revolution

It was a seismic shift Westward in the geopolitics of the region. It was a kind of respond of people to the election fraud of Viktor Yanukovich, who is elected in the current January 2010 elections, in 2004 Presidential elections. Approximately 2.8 million ballots were rigged in favor of Yanukovich that Yushchenko, incumbent president, and Tymoshenko, last prime minister, realized the possible fraud and mobilized the people to revolt.

The efforts to steal the election for Yanukovich had started much earlier. For six months, government-controlled national television had subjected Yushchenko to a steady torrent of negative pres and distortions, while refusing to give him the opportunity to defend himself. Yushchenko's campaign faced other impediments as well. Sometimes his plane was denied landing privileges minutes before major rallies. Road barriers slowed his travel and, once, a truck tried to force his car off the road. Yushchenko's private security detail discovered that he was being followed by a state security operative, who was caught with false identity papers, multiple license plates, and eavesdropping equipment. Then, on September 6, Yushchenko became gravely ill. His mysterious sickness forced him from the campaign trail for nearly a month, leaving his body weakened and his face badly scarred. Later tests revealed that he was suffering from dioxin poisoning. The opposition cried foul, but the government-controlled media responded that Yushchenko had contracted the disease himself, by eating contaminated sushi, getting herpes, or undergoing botox treatment to preserve his 50-year-old good looks.

The result of the election was announced that Yanukovich was the winner. Throughout the election day, independent domestic monitors sounded the alarm about the emerging fraud (Karatncky, 2005). After the election day, people met in the Independence Square and called out "Yushchenko!" In same day, Yushchenko declared himself as the new President

that there were three presidents at the same time in Ukraine: incumbent Kuchma, elected Yanukovich and declared Yuschchenko. Six days later, Ukraine's supreme courts annulled the results of election and called fresh elections. The constitution was changed that the President's power was reduced and Yushchenko accepted this change. In 26 December 2005, the new election was held with the largest contingent of international observers in history who came from Europe, North America, Russia and Asia. The result was not surprising: Yushchenko 52%, Yanukovich 44% of the total votes. The results show the significant regional variations that western, central and northeastern parts of the country voted for Yushchenko and Ukraine's ten southern and eastern regions voted for Yanukovich. In late June a reunited Orange coalition was formed three months after the March 2006 parliamentary elections that would have seen Tymoshenko return as prime minister. But the coalition collapsed before it could propose its government when the smallest of the three coalition partners, the SPU, withdrew its support from the coalition over Our Ukraine's refusal to accept its demand that Moroz be made the parliamentary speaker.

The Orange Revolution is at a crossroads. Ukraine's democratic revolution and Yushchenko's electoral victory in November 2004–January 2005 has brought democratic gains for Ukraine in a number of key areas such as free media and the holding of free and fair elections, making Ukraine's trajectory very different from the majority of CISs.

8. Presidency of Yushchenko

The Orange Revolution and Yushchenko's electoral victory have brought a number of positive developments, such as media freedom, greater civil society activity, free and fair elections, the breaking of ties between oligarchs and organized crime, and lower levels of corruption and rent seeking at the senior levels (Kuzio, 2006). However, Yushchenko was increasingly viewed as a weak leader who lacked political will and strategy. It was thought that he is unlikely to win a second term in the 2009 elections because of his indecisiveness, and unwillingness to listen to public. Today, this thought become reality and Yanukovich elected as new President.

Ukraine's Orange coalition fell into crisis in September 2005 and has not reunited; Yanukovych's return to the government in August 2006 has led to an irreversible split in the Orange coalition. Negotiations to rebuild an Orange parliamentary coalition took place over three months following the March 2006 parliamentary elections. However, following the defection of the smallest of the three political parties that created the coalition, the Socialist Party (SPU), the Orange coalition disintegrated before proposing its government. Ukraine's 2006 Parliament is the most polarized in Ukraine's fifteen-year history. Former pro-Kuchma centrists, who had traditionally played a "buffer" role between eastern and western Ukraine, were no longer present. Two antagonistic political forces – Party of Regions and Tymoshenko Bloc - were the largest factions in Parliament with 310 deputies (or 70 percent of the total of 450). Contentious issues such as NATO membership and Russian language status heightened the polarization in Parliament.

Moreover, in the economic sphere, Yushchenko confronts a rising budget deficit and a slowdown in the country's growth rate, which last year was 12.5 percent and this year is expected to fall to around 6 percent. A day after his inauguration, Yushchenko traveled to Moscow for his first official international visit, to be followed by trips to Warsaw, Brussels, and Washington. Even as he seeks to improve his relationship with Russia, Yushchenko's main goal is the consolidation of Ukraine's democracy and market economy through integration with the EU. However, EU integration will remain a long-term objective. Economically, Ukraine's leaders hope the United States will declare Ukraine a market economy and push for the country's quick integration into the World Trade Organization.

In the 2009 presidential elections, Tymoshenko will be well positioned after three years in the opposition. Her main opponent will be either Yanukovich or another PR candidate. Neither of the two main presidential candidates will heal Ukraine's regional divide and political polarization.

During Yushchenko presidency, the Shift from a Presidential system to a Presidential-Parliamentary System was actualized. Under the provisions of the 1996 constitution, the prime minister was appointed by the president. The prime minister then had to get the

president's approval for ministerial appointments, and ministers could be dismissed by the president. The president, therefore, had effective control over the prime minister and the Council of Ministers. The new system takes some power from the president and gives it to parliament. Under the new amendments, parliament will have the power to approve most— but not all—of the ministers, and to dismiss them individually or collectively. When a new parliament is elected, a new cabinet will be named, strengthening the influence of parliament over the cabinet. The virtue of these changes is that they will undermine the constitutional basis for hyper-presidential rule. Allowing the prime minister to appoint most of the ministers will strengthen the prime minister relative to the president. Allowing parliament to dismiss individual ministers without throwing out the entire cabinet and forcing a crisis will strengthen parliament's control. This will make it harder for the president to use the government to harass political adversaries. Also, the adoption of the Proportional Electoral Law was coincided with his presidency. The new proportional system will increase parliament's ability to function effectively and help to strengthen political parties. These two developments will make parliament a more effective counterweight to the presidency. There is one significant problem with the new system, however—it lowers the threshold for entering parliament from 4 percent to 3 percent. This gives Ukraine one of the lowest proportional-representation thresholds in the world.

9. 2010 Elections

Yushchenko lost his bid for another term in the first round of voting last month and on February 7, 2010 presidential elections Viktor Yanukovich declared his victory. But his Orange opponent, Prime Minister Yulia Tymoshenko, refused to concede and urged her supporters to wait for the final vote count although six exit polls by Ukrainian television stations and other agencies found that Yanukovich was in front by 3 to 6 percentage points.

The first round of voting last month occurred without major violations, international election monitors said, and they reported on February 8 that February 7's balloting was relatively proper. Analysts said Ukrainians were so disillusioned that it was doubtful that there would be demonstrations like those in 2004 Orange Revolution (Levy, 2010). One

month after the presidential elections, Parliament called for vote of no confidence for Tymoshenko and she was sacked. This was the total end of Orange Coalition.

Under the incumbent president, Viktor A. Yushchenko, an Orange leader, relations with neighboring Russia grew so tense that the Kremlin withdrew its ambassador to Ukraine. However, the new President Yanukovich is a pro-Russian leader. After his success came, he prepared to travel to Moscow for his first visit to the Kremlin. Yanukovich has pledged to restore close ties that were all but severed because Yushchenko courted the West and sought membership of NATO after the Orange Revolution (Halpin, 2010).

10. Crimean Separatism

Ukrainian-Russian relations since the collapse of the SU have largely been strained, conflictive, unstable and abnormal. The most prominent problem has been the fate of the Black Sea Fleet and its main base, Sevastopol.

The question of Crimea's status whether it should be a part of Ukraine or not is the remaining problem also today. The prevailing view of Russia was Crimea is historically Russian territory which has little or nothing to do with Ukraine. Thus, it should not have been transferred to Ukraine. Also the Crimean political elite and the general public basically share these same convictions.

Crimea, unlike other disputed regions of Ukraine, was formerly a constituent part of the Soviet Russian republic. As long as there was a SU, no one attached any particular significance to the fact that the peninsula had been transferred from Russia to Ukrainian jurisdiction. The "transfer of title" in 1954 was neither unprecedented nor particularly problematic. Clearly, all of this changed when Ukraine declared its independence. The Black Sea Fleet continues to be based primarily in Crimea, serving as the main naval base. This is the Russian military presence in Ukrainian territory (Solchanyk, 2001).

Moreover, Crimea was the only major administrative subdivision of Ukraine where Russians are the majority. Today, the proportion of Russians in Crimea has decreased, largely because of the influx of Crimean Tatars returning from their place of exile.

The first signal that Crimea could potentially be serious problem for Ukrainian-Russian relations was appeared even before Ukraine declared its independence. They signed bilateral agreement in 1990 that both sides would respect and recognize the territorial integrity of each other. After the independence of Ukraine, the bilateral agreement reemerged in 1992 that height of Ukrainian-Russian tensions over the black Sea Fleet and the fate of the Soviet military in Ukraine and at the moment that the Russian parliament was preparing to challenge Kiev over Crimea. However, there was no change in the agreement.

Finally, in 1993, by unanimous vote, the Russian parliament confirmed the Russian federal status of the city Sevatopol and instructed the government to formulate in the shortest possible time a state program safeguard that status and conduct negotiations with Kiev on Sevastopol as the main base of an undivided Black Sea Fleet. But in 1994, Yurii Meshkov had an overwhelming victory and became the leader of the most influential separatist movement in Crimea. Under his leadership, in 1994, during the tense situation sparked by the Crimean's decision to renew its claim to independence, the State Duma adopted an appeal to the Ukrainian parliament politely cautioning against any forceful response and expressing its readiness to promote the search for constructive compromises. In 1995, Kuchma and the Ukrainian parliament moved decisively stripping Crimea of its constitution and the presidency and temporarily subordinating the government to the cabinet of ministers in Kiev. Today, Crimea is still a problem for both internal Ukrainian politics and for Ukrainian-Russian relations. Ukraine wants to make Russia remove the Black Sea Fleet the Abkhazia.

11.Relations with Russia and the European Union

Ukraine, economically, depends on Russian FDI. Also, it is contributed loans by IMF because of its debts. Moreover, Ukraine needs Russian Gas for calefaction. Ukraine is, also, the transit point of Russian Gas the various regions in Europe.

Furthermore, Ukraine has good relations with NATO but Russia is not in favor of this relationship. Ukraine wants to join NATO to improve its military equipments. It does not have important reasons such as terrorism or weapons of mass destruction. Moreover, Ukraine wants to have good relations with EU that will trigger the consolidation of democracy in Ukraine. Ukraine really lags behind the Copenhagen Criteria that it should work hard for became an EU member state. Ukraine has already joined the EU's Energy Community that it draws investment into industry. Thus, Ukraine can use export potential more effectively. However, Ukraine is not closing the gap with new EU member states very quickly in economic terms that this may compromise the country's European integration aspirations and medium term growth prospects.

12. Conclusion

Table.6: Transit Ratings and Averaged Scores

	1999-2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Electoral Process	3,50	4,00	4,50	4,00	4,25	3,50	3,25	3,00	3,00	3,50
Civil Society	4,00	3,75	3,75	3,50	3,75	3,00	2,75	2,75	2,75	2,75
Independent Media	5,00	5,25	5,50	5,50	5,50	4,75	3,75	3,75	3,50	3,50
Governance	4,75	4,75	5,00	5,00	5,25	n/a	n/a	n/a	n/a	n/a
National Democratic Governance	n/a	n/a	n/a	n/a	n/a	5,00	4,50	4,75	4,75	5,00
Local Democratic Governance	n/a	n/a	n/a	n/a	n/a	5,25	5,25	5,25	5,25	5,25
Judicial Framework and Independence	4,50	4,50	4,75	4,50	4,75	4,25	4,25	4,50	4,75	5,00
Corruption	6,00	6,00	6,00	5,75	5,75	5,75	5,75	5,75	5,75	5,75
Democracy Score	4,63	4,71	4,92	4,71	4,88	4,50	4,21	4,25	4,25	4,39

Source: www.freedomhouse.org

Considering this data, it is obvious that Ukraine is not a consolidated democracy but it is a partial democracy. This is the result of the focusing on the creation of national identity instead of introducing democracy and market economy. Thus, both politically and economically, Ukraine's transition is not a successful one as the Baltics. Another reason is the Ukraine's close cultural and linguistic relations with Russia. Moreover, Ukraine is still

dependent on Russian FDI that creates economic dependency to Russia. In the upcoming days, it is hoped that Ukraine can consolidate its democracy by turning its face to west rather than east. Otherwise, Ukraine will remain the same and cannot emancipate itself from the influence of Russia.

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A General Overview of Georgia and its Democratization Process

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Abstract

Georgia has taken an important place on the world agenda since the end of the1980s because of its ethnic problems, its corruption cases, and as a country which had experienced one of the colour revolutions among the post-Soviet countries. In this paper, this country will be analyzed in a detailed way. First of all, the history of Georgia will be checked over. Then, the major events and situations under the rule of the Soviet Union will be observed. After that, the time of independence and important incidents after the independence will also be focused. The conflictual areas will be elaborately analyzed. As a last point, structure of the government, economic and democratic transitions within the country will try to be examined.

1. Basic Facts and Figures

Georgia is located in the South Caucasus region in the world. The neigbouring countries are Russian Federation on the north, Turkey on the southwest, Azerbaijan on the southeast, and Armenia on the south. Georgia shares a coastline, which is about three hundred kilometers, with the Black Sea. The capital of the country is Tbilisi, and the total area is composed of 69,700 square kilometers. There are 4,615,807 people living in the territory of Georgia. The national currency of the country is called Lari, and the official language is Georgian. Other languages such as Abkhazian and Russian are also used within the borders of Georgia.

If the geographical features of Georgia are taken into consideration in a basic sense, it can be seen that there are important valleys, mountains, caves and other landform elements in

Georgia, and that the most well-known mountains are the Mount Shkhara and the Mount Kazbek. In fact, Georgia is situated in a mountainous area. The climate of Georgia shows the mixture of the characteristics of subtropical climate and the Mediterranean climate. The natural environment plays a significant role in the life of people of this small country.

2. Georgia Under the Rule of the Soviet Union

Between the years of 1906 and 1917, the revolutionaries in Georgia were divided on Menshevikis and Bolshevikis. Moreover, in those years, Joseph Jugashvili, lately known as Joseph Stalin, was one of the important activists of the Bolshevikis in the Caucasus region. In the year of 1914, the first World War appeared, and the revolutionary activities had stopped for a period of time because of the emergence of the war. Georgia, in the first World War, became a battleground for the fights between the Russian and Turkish troops. The Tsarist regime in Russia came to its end when the Bolshevik powers gained control in 1917. In such environment of political turmoil, Georgia used the advantage to become an independent state. In May 1918, the National Council of Georgia delared the independence of the country. The Social Democrats were the strongest alliance in the parliament of Georgia, and they chose Noe Zhordania as the chairman of the government of Georgia (Dawisha & Parrott, 1997: p.158). The new republic adopted a democratic constitution. Some leading powers of world had recognized the independence of Georgia. In addition to this, Lenin signed a treaty with the government of Georgia in May 1920. However, the newly independent republic had survived for a short period of time. In February 1921, the Red Army invaded the territory of Georgia, and Georgia became a part of the Soviet Union. A treaty was signed between the Georgian Soviet Socialist Republic and the Soviet Union for formality.

In 1922, the Soviet Russia decided to create the Transcaucasian Soviet Federated Socialist Republic. Goergia, Azarbaijan and Armenia were integrated into this new formation. The aim was to create one Soviet republic in the Caucasus region. However, in the year of 1936, the Transcaucasian Soviet Federated Socialist Republic was dissolved, and Georgia became an autonomous Soviet republic.

During the Soviet dominance, Georgia had somewhat experienced some improvements in education and economy. However, everything was shaped according to the communist idelogy. Moreover, political repression was vey apparent in the time of Stalin. Stalinist government implemented wide oppression especially to the intelligentsia of Georgia. Many people who were in the opposition side were sent to Siberia. Even though Joseph Stalin came from a Georgian origin, this fact did not change the implementation of repression to the opposition in Georgia.

The Second World War broke out, and Georgia was heavily affected because of the emergence of the war. Many Georgians joined the Soviet Army in order to defend the territories of the Soviet Union. The Nazi forces were defeated, however, many Georgians had died during the battles fought in the Soviet territory.

After the death of Stalin, the nationalist movement within the country rose again. Some demostrations and opposition movements were formed against the Soviet government. These movements were stopped by the Soviet armed forces, and the belief in communist ideology lost its effects in a wide sense within the soicety of Georgia. Suppression to the opposition movements in the country was always present during the rule under the Soviet Union. In fact, the Soviet government had seen the Georgian people as creating troubles continuously.

In the year of 1972, an important political figure came to the scene as the first secretary of the Supreme Soviet of the Georgian Soviet Socialist Republic. He was serving as the minister of interial affairs before being assigned as the first secretary. During his time in office as the minister of internal affairs, Shevardnadze had investigated much of the corruption cases and reported them to the government in Moscow. As a result of this, Shevardnadze took the attention of the Soviet Union. Then, the Soviet government made a decision about removing Mzhavanadze, who was accused of huge corruption, from the position of first secretary of Georgian Supreme Soviet. Shevardnadze replaced him as the first secretary. He gained a reputation as one of the most innovative leaders in the republics of the Soviet Union.

When Shevardnadze came to power in the beginning of the1970s, the nationalist movements in Georgia were continuing. Shevardnadze approached to these events by meeting with dissident leaders and by trying to compromise with them. For instance, when a newly drafted constitutional decision which stated that Russian became equal to the Georgian language as a state language in 1978, many university students made demonstrations on the streets in order to protest this decision. Shevardnadze, then, met with the protesters and succeeded in negotiating with them without irritating the government in Moscow.

If the events and situation within Georgia before the independence years are taken into consideration, it can be seen that in the 1970s, the human right movements started to get into action in Georgia. The two significant activists were Zviad Gamsakhurdia and Merab Kostava (Dawisha & Parrott, 1997: p. 159). The Moscow government had monitered closely these activities within Georgia. These activists and opposition groups were quietly arrested and prisioned.

Due to the policies that he followed and his skills as a politician, Shevardnadze was appointed as the foreign minister of the Soviet government in 1985. Jumber Patiashvili took the position of the first secretary in place of Shevardnadze who went to Moscow. Patiashvili implemented policies different from those of Shevardnadze. He removed several significant officials who had been close to Shevardnadze. He did not pursue policies of talking and compromising with the opposition. Patiashvili even stated that the nationalists and informal groups were dangerous opposition forces, and he called them as the enemies of the people. In short, the social unrest was increasing gradually among the society.

In the mid-1980s, Soviet leader Mikhail Gorbachev introduced the policies of perestroika and glasnost. After that, it was realized that these policies might have created an opportunity for seeking national independence. A lot of nationalist organizations were created, and the idea of being independent became very appealing to the people of Georgia. In the end of the 1980s, the opposition movements were very active within the territory of Georgia. In those times, a signficant event, which was seen as a sorrowful incident in the

history of Georgia, occured. This was the event of April 9 in 1989. A peaceful anti-Soviet demonstrations were organized in Tbilisi, but these demonstrations were stopped by the Soviet troops and twenty people died in this attack. The military authorities and central media wanted to blame the protesters, and opposition leaders were arrested by the Soviet forces.

After the occurence of this incident, the public became more anxious and political life was radicalized. Separatist ideas and beliefs found their way among the society in a more rapid way, and the support for the nationalists and opposition increased. In this atmosphere, many competing groups emerged. Various political movements were existent in the country, and they ranged from the monarchist group to a group who called themselves as Stalinists. The most significant group became the reformist Round Table group which was a coalition group composed of Gamsakhurdia and his supporters and other oppositions in the country (Wooden & Stefes, 2009: p.105).

Parliamentary elections were held in October 1990, and it was the first multi-party elections in Georgia. Communist party governance came to en end with this event, because Gamsakhurdia's blocks acquired its victory in these elections.

3. Independence from the Soviet Union

After becoming the chairman of the Supreme Council of Georgia, Gamsakhurdia took a decision about organizing a referendum. The aim of this referendum was to ask the people whether they were willing to become independent from the Soviet Union. The result was that about ninety per cent of the votes demonstrated that Georgian people wanted to get their independence. Thereupon, Georgia declared its independence from the Soviet Union on April 9 in 1991. Then, presidential elections were arranged, and Zviad Gamsakhurdia became the first president of the independent Republic of Georgia. However, the internal situation within the country could not be stable. First of all, economic and political problems formed a backward for the development of the country. In addition to this, the ethnic groups living in Georgia display their disturbance by organizing demonstrations, and some minor military fights broke out between ethnic groups. Moreover, Gamsakhurdia

always pointed out that the military bases remaining from the Soviet forces created problems for the country. Here, there is a significant point to mention. Gamsakhurdia had pursued certain nationalistic policies, and especially the ethnic minorities of the regions of Abkhazia and South Ossetia were worried about the leadership of Gamsakhurdia. For instance, Gamsakhurdia changed the local leaders in ethnic regions with new leaders who had Svan, Mingrelian or Kartveli origins. These origins were defined by Gamsakhurdia as true Georgians. Furthermore, Gamsakhurdia attempted to alter the Soviet military and police forces by getting assistance from clans and armed groups in the coutry. The aim of Gamsakhurdia was that Georgia should be in equal conditions with Russia in terms of politics and economy. However, it was not a simple task to implement because of the existence of many problems in the country. In short, the policies of Gamsakhurdia created social unrest within borders of the newly independent republic. In addition, because of these weak policies, ethnic conflicts and armed struggles among ethnic groups widely incresead. Gamsakhurdia also caused to irritate certain members of the nationalist movement (Dawisha & Parrott, 1997: p.163). He was criticized as acting as a dictator. As a result, armed opposition groups launched a military coup against the government, and in the end of 1991 Gamsakhurdia was forced out of office.

In the meantime, a familiar political figure returned to Georgia. Eduard Shevardnadze, in this atmosphere of social and political turmoil, became the temporay leader. At first glance, Shevardnadze had to deal with the ethnic problematic situation. The secessionist movements in both Abkhazia and South Ossetia paved the way for these regions to become de facto independent. The armed struggles with South Ossetia had calmed down with the help of the Russian troops who were invited by Shevardnadze. On the other hand, Abkhazian forces caused much problems, and the ceasefire with this region was assured with the intervention of the United Nations.

Shevardnadze was elected as the legitimate president in the presidential elections of 1995. In those years, Shevardnadze was very popular among Georgian people because of the policies which resulted in reducing tensions in the ethnic conflictual areas. In addition, in the international arena, the external recognition of the Georgia was consolidated, and by July 1992, Georgia gained the membership in the United Nations. As it is remarked in the

article of Suny, Georgians were proud of having Shevardnadze as their leader in the beginning of the 1990s (2002, p.18).

Even though Shevardnadze implemented a social and political stability within the country only for a period of time, the opposition against the governance and policies of Shevardnadze continued. For example, in 1995 an assassination attempt was organized against Shevardnadze. In addition to this, in terms of external relations there were some problems occuring with Russia. The Chechenya issue of Russia affected the relations among these two neighbouring countries. Moreover, the ethnic challenges within the borders of Georgia were still apparent, and Russian policies were in support of the people living in Abkhazian and South Ossetian regions. In this kind of environment, a considerably important outside actor had also showed its influences in the policies of Georgia. The United States saw Shevardnadze as a counter balance to Russia. In order to monitor the behaviours of Russia, the United States provided material support to Georgia. During the Shevardnadze period, Georgia received huge amount of foreign aid from the United States.

Shevardnadze's administration did not attack the identity of ethnic minorities of Georgia, however, the missing effort was that there was not any policy to connect them into the public life. At first glance it can be said that the ethnic armed struggles were stopped, but the people of the ethnic regions could not see themselves as a part of Georgia when the issue is deeply observed. In addition to this, there was also a weakness in the governance of the country. The state was a centralized one, nonetheless, outside of Tbilisi local self-governance was not influential. In fact, the central government could not ensure the necessary power in every part of the country. In the process of time, the Shevardnadze period demonstrated more conservative tendencies, and there was also the problem of cronyism. Shevardnadze maintained some of the past Soviet politicians in the governance positions of the country. In the second half of the 1990s, reforms slowed down, and Shevardnadze started to be seen as an obstacle to the economic development because of the corruption that he and his family were associated to. The oppositions clearly accused the parliamentary elections held in 2000, in which Shevardnadze was elected again as the president of Georgia, of being fraudulent. In addition to this, opposition against

Shevardnadze expressed strongly that the state was incapable of controlling its borders and could not provide basic services to its people.

4. The Rose Revolution

The parliamentary elections held in 2003 was a turning point in the political history of Georgia. The opposition parties and groups became more active, and the demonstrations against the governace of Shevardnadze increased. In November 2003, the opposition leaders, namely Mikheil Saakashvili, Nino Burjanadze, and Zurad Zhvania organized massive demonstrations and protests on the streets of Georgia. The reformist coalition leaders stated that the elections were rigged. As a result of two weeks of demonstrations, Eduard Shevardnadze resigned from his position as the president. Burjanadze, then, became the acting head of state until the presidential elections were arranged.

In this revolution, the opposition was able to persuade many people that political change could be attained. In additon, this bloodless revolution showed that the regime in Georgia was weak. In a basic sense, the government of Shevardnadze was a mixture of clan and mafia mismanagement (Shelley *et al.*, 2007: p.116). In the international arena, Georgia's internal situation was seen as ruined, especially after the Transperancy International ranked Georgia as one of the most corrupted countries in the world. The weakness of the Georgian state was also a driving force for this revolution to happen. For instance, some deceitful state officials did not worry about the punishment if they had broken the law (Shelley *et al.*, 2007: p.112). Moreover, the United States had declared that, before the emergence of the revolution, the financial support provided to Georgia would be reduced, and this situation caused the lose of faith among people to their government. All of the factors paved the way for the emergence of the Rose Revolution, which was defined as a revolution against corruption. The Rose Revolution has had a major impact on other countries which were under the rule of the Soviet rule. However, many problems which were underlined and identified before the Rose Revolution are still apparent in Georgia. The reforms did not regulate the state structure, in fact, they had resulted in a minimal effect on the weak state system of the country. In addition to this, the judicial system

continues to have a numberof problems, and this area has been not touched upon since the Rose Revolution.

5. Ethnic Conflicts in Georgia

In this section, the conflicts which have ethnic bases will be analyzed. Initially, it is necessary to point out that the conflicts will be handled in two separate groups. The first group will consider the most problematic regions, and the second group will contain partially problematic areas in Georgia. South Ossetia and Abkhazia will be inserted in the first category, while Ajaria and Samtskhe-Javakheti regions will be dealt within the second category. It is also necessary to remark that the languages of Abkhazians and South Ossetians are different from the official language of the country, namely Georgian (Nodia, 2005: p.51). On the other hand, Ajarians utilize Georgian as their language. In addition to this, people living in Abkhazia and South Ossetia have ethnically kinship relations with the groups living in North Caucasus. In that sense, they do not consider themselves as Georgians. Moreover, they think that the territories on which they settled have to be separated from the governance of Georgia. The situation in Ajaria and Samtskhe-Javakheti has taken a different path from the events occuring in Abkhazia and South Ossetia.

In order to see the conflictual regions, here is a map of Georgia demonstrating the areas where ethnic conflicts are present (Figure 1):

Figure 1. Map of Georgia (Source: Rogers Group).

5.1. Conflict in South Ossetia

The problem of South Ossetia appeared when the first attempt of independence for Georgia emerged in 1918. The people in South Ossetia were also willing to acquire their independence. Nevertheless, after the Red Army invaded the capital of Georgia and took control of the government, it was realized that the full independence was not the case for the South Ossetian region. Instead of this, South Ossetia wanted to get at least an autonomous position within the border of the Soviet Union. In 1922, South Ossetian Autonomous Oblast was created, and this formation enjoyed a partial autonomy under the rule of Georgian Soviet Socialist Republic in the Soviet times.

Until the end of the1980s, there was not a major unrest among the people of South Ossetia and Georgia. However, when Georgian nationalist leaders started to talk about the subject of being independent from the Soviet Union and to mobilize the public, the secessionist ideas increased within South Ossetia. At the end of 1989, tensions among South Ossetians

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and Georgians substantially increased. The new government elected in 1990 had nationalistic statements, and the ethnic groups including South Ossetians were very disturbed by the policies of Gamsakhurdia. The government of Gamsakhurdia were seeing the ethnic groups as not being part of the people of Georgia, and because of these implementations, armed struggles within the border of the country took a crucial place in the agenda.

After Gamsakhurdia was forced out of government, Shevardnadze started to follow different policies. In order to ensure a stable environment for the country, Shevardnadze wanted to deal with the ethnic problems initially. Shevardnadze negotiated with the Russian president Yeltsin, and the Russian troops helped to appease the tension in South Ossetian region by settling Russian forces there under the name of peace forces. After that period of time, minor fights appeared between people, however, it can be said that the situation had calmed for a period of time to some extent. There were also other problems in the region. Especially in the end of the 1990s, smuggling activities concentrated in the region of South Ossetia.

In a general sense, it can be stated that Georgia tried to implement some policies towards dealing with South Ossetia after the period of 2004. In 2005, Saakashvili and his advisors prepared a federal solution for the case of South Ossetia. However, the conditions underlined by the federal proposal did not satisfy the leaders of South Ossetia, and as a result the federal solution was not accepted (Özkan, 2008: pp.221-222). In fact, South Ossetians on all occasions mentinoed their willingness to become integrated with North Ossetia, which was situated in the territory of Russian Federation. The role of Russia is also substantial in this case. For instance, Russia decided to give the right of being under Russian citizenship to the people in South Ossetia.

In 2008, the conflict took another direction. The effects of Russia were very crucial in the development of the events of 2008. In addition to this, the United States was in the camp of Georgia by supporting it politically and economically. Before the situation turned into a war in August 2008, the prime minister Vladimir Putin stated that Russia would support the separatist forces in both South Ossetia and Abkhazia. Georgian government became

very worried about this statement. In the mean time, the frictions increased among the forces of two sides. The United States, then, expressed that the support would be given to Georgia in the case of a possible war. After that, Georgian troops entered into the South Ossetian area, and Russian troops counter attacked to Georgian forces. When the armed conflicts were calmed down after a period of time, Russia decided to maintain some part of its forces in the territory of South Ossetia, and this decision caused worries in the Tbilisi government.

Currently, the conflictual situation is still present on the agenda of Georgia. Georgia sees the territories of South Ossetia as its part of Shida Kartli region. However, a small number of external actors recognized the independence of South Ossetia including Russian Federation. In addition, the regions whose external recognition are also disputable, such as Abkhazia and Transnistria, internationally recognized the independence of South Ossetia.

5.2. Conflict in Abkhazia

After the Soviet Army took the control of Georgia under the rule of Soviet Union, Abkhazia was turned into an autonomous republic, as in the case of South Ossetia. In the time of Soviet governance, many Russians, Georgians, and Armenians were encouraged to settle in Abkhazian area. Until the independence of Georgia, the situation in this region was somewhat calm. However, when the independence idea spread through the territory of Georgia, Abkhazians had also started to give emphasis on being an independent country. Thereupon, Abkhazia proclaimed its independence from Georgia in the beginning of 1990s, but Georgia sent its troops in order to stop the secessionist movements in Abkhazia. Until 1994, the armed conflicts continued between Georgians and Abkhazians. The ceasefire was signed in 1994 with the help of the United Nations. Nonetheless, the problems are still present.

As the case in the South Ossetian problem, Georgia wanted to implement a federal solution plan in Abkhazia. The conditions were similar to those of the South Ossetia. The same result appeared, and the federal solution was rejected. In addition to this, an election crisis occured in Abkhazia. A candidate, who had more democratic ideas and who was a pro-

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Western, won the elections in 2004. Russia was dissatisfied about this result because this kind of political leader in Abkhazia could damage the interests of Russia in the long run. As a result, a new election turn was arranged in Abkhazia, and opposition agreed on acting together in the elections. It was a much more convenient situation for Russia. Georgia did not want to interfere into this election problems.

The situation in Abkhazia needs some efforts from both sides. It is not possible to reach a suitable solution without creating confidence building measures. In addition to this, the effects of Russia is also a complicated issue. Georgia considers Abkhazia as a part of its own territory, however, a small number of independent countries, such as Russian Federation, recognized Abkhazia as an independent unity.

5.3. The Situation in Ajaria

Georgia had not experienced armed conflicts with Ajaria region after getting its independence. There was an influential leader in Ajaria, namely Aslan Abashidze, and he decided to create good relations with the government in Tbilisi. Abashidze was not against the idea of being a part of Georgian administration as long as the autonomous position of Ajaria has been maintained. Abashidze did not go against the policies of Shevardnadze government, and in return Shevardnadze accepted to see Ajaria as semi-independent. However, at the end of the 1990s, the relations were distant because of the corruption problems in Georgia.

During and after the time of the Rose Revolution, Aslan Abashidze was very cautious about the events occuring. The new government which was settled after the revolution of 2003 in Georgia was not accepted by Abashidze. He even stated that this revolution was illegal. The tension increased between Tbilisi and Ajaria. When Saakashvili wanted to visit Ajaria, the Ajarian paramilitary groups objected to this event. Georgia gave ultimatum to Ajaria, and pointed out that the institutional structure of Ajaria would be reshaped. These situations created an unrest among the people living in Ajaria. Especially students and university lecturers went into the streets to protest the policies of Abashidze. As a result of this condition, Abashidze decided to leave Georgia. New elections in order to elect the

leader of Ajaria was held in 2004, and Levan Varshalomidze became the Chairman of the autonomous Ajaria.

5.4. The Situation in Samtskhe-Javakheti

The region is mainly populated by Armenians. In the beginning of the1990s, the government of Georgia negotiated with the local leaders in the region, and a conflictual situation did not appear. Here, the most significant issue was the existence of the Russian military base in Akhalkalaki. After the Shevardnadze period, the new government in Georgia was determined to make the Russian troops to be out of this region. However, the people living in Akhalkalaki were afraid of losing their economic interests after the closure of the military base. Russia, on the other side, had also specific interests on the region, and did not want to lose its influence over the Javakheti area.

Georgia and Russia negotiated about the evacuation of the Russian forces from Akhalkalaki. In 2007, the last Russian troops left the area. The idea of autonomy did not become a widely supported idea among the people of Javakheti (Nodia, 2005: p.58). However, there are some concerns that Armenians can mobilize to acquire an autonomous position from Georgia in the future.

6. Government Structure

Georgia has adopted semi-presidential system. The dominant role is played by a powerful head of state. The president is elected for a five-year term. It is a centralized state. Nearly all political decisions are taken by the President and his cabinet members. There is a little influence of the local governments into the decision making process. In addition to this, the legislative body of the country is unicameral. The parliament is composed of a hundred and fifty members, who are elected for five years. In the last parliamentary elections in 2008, the main parties running for elections were United National Movement, the Christian Democratic Party, the Joint Opposition, the Labour Party, and the Republican

Party. The main party in the current parliament of Georgia is the United National Movement.

The current president of Georgia is Mikheil Saakashvili. He was elected in both 2004 and 2008 presidential elections as the president. The last presidential elections were performed ahead of time because a crisis situation emerged. Demonstrations against the governance of Saakashvili were organized on the streets of Tbilisi. In this event, the media giant Patarkatsishvili had an important role due to his financial support to the oppositions against Saakashvili.

7. Economy of Georgia

Georgia has been struggling economically in order to overcome the defects that emerged in the Soviet period. During the seven decades of Soviet dominance, nearly all aspects of the Georgian economy were firmly controlled by the Moscow government. After the independence, the economic development could not occur in a rapid way. Georgia's gross domestic product decreased sharply after achieving the independence. One of the most important obstacles that Georgia has faced is the ethnic turmoil within the country. Resources were spent on military development rather than economic fields. Highways, railroads, and bridges were harshly damaged because of the armed struggles among people. Other significant problems are the organized crime and corruption. These two used up many signifcant resources of the country.

Main economic activities performed in Georgia range from agricultural production of some particular products such as grapes to mining of copper and manganese, and small industrial production of metals, machinery, alchololic beverages and so on. Moreover, the Baku-Tbilisi-Ceyhan oil pipeline and the Baku-Tbilisi-Erzurum natural gas pipeline have increased the strategic importance of the country. Furthermore, it is necessary to mention that Georgia has been receiving financial aid from the international financial organizations such as IMF and World Bank (Shelley *et al.*, 2007: p.112). This financial support helped to improve some part of economic areas of Georgia to some extent. However, there are still a lot of economic defficiencies.

In terms of economic transition, it can be observed that Georgia has been slow in implementing the economic transition from a centrally planned to a free market economy. During the Soviet control, agriculture was collectivized and people could not work in their own land. In addition to this, industry was also possessed and controlled by the central government. Individual incentives could not grow in this kind of economic situation. Transfer of land, industry and businesses is a painful process and it is very difficult to implement it in a rapid way. There is also the problem of corrupt privatization. Valuable properties are being sold to the relatives of the state officials (Shelley *et al*, 2007: p. 7)Moreover, this transition has also created difficulties for many people in the country. In this economic transition period, Georgia had experienced economic problems caused by inflation. Economic institutions could not be improved in order to operate in an efficient way. The salaries are considered as very low by most people in Georgia, and the quality of life could not reach to the intended and appropriate levels. As a result, the public show their unsatisfaction with the economic situation in the country.

8. Democratization in Georgia

From the time of independence, Georgia has been dealing with the problems of ethnic conflict, political instability, violence, economic insufficiency and national unity. Nonetheless, in terms of democracy, some progress had taken place. For instance, the first democractic elections were held in 1990, and this event can be considered as a major accomplishment in the field of politics. However, Georgia could not reach a stable environment within its border. First of all, when Gamsakhurdia was elected as the president of the country, the country experienced nationalism and authoritarianism, and eventually these policies caused the emergence of civil war in Georgia. There was also a military coup that overthrew the first president Gamsakhurdia.

There are specific problematic conditions in the democratic transition of Georgia. First of all, the presidential networks are more effective in policy making than the parliament members or cabinet members. In addition to this, the dominant party in the parliament has been generally directed by the president, so the control of parliament over the president

cannot be valid in this case. Furthermore, there is a lack of institutionalized party system. As a result of this, elections cannot become reliable. Moreover, there is also the problem of accountability. When amendments were implemented on the constitution of Georgia, the opposition and the public were hardly consulted.

According to the analysis applied by Freedom House (see Table 1 below), Georgia acquired the point of 4.93 out of 7.00. This means that Georgia is considered as a hybrid regime or transitional government. The criteria which gets the least score is the area of national democratic governance. It means that Georgia should implement and should give more efforts to consolidate the democracy in the country.

Table 1. The Democracy Index (Source: Freedom house)

Non-Baltic Former Soviet States

Armenia	4.79	4.83	4.83	4.92	5.00	5.18	5.14	5.21	5.21	5.39
Azerbaijan	5.58	5.63	5.54	5.46	5.63	5.86	5.93	6.00	6.00	6.25
Belarus	6.25	6.38	6.38	6.46	6.54	6.64	6.71	6.68	6.71	6.57
Georgia	4.17	4.33	4.58	4.83	4.83	4.96	4.86	4.68	4.79	4.93
Kazakhstan	5.50	5.71	5.96	6.17	6.25	6.29	6.39	6.39	6.39	6.32
Kyrgyzstan	5.08	5.29	5.46	5.67	5.67	5.64	5.68	5.68	5.93	6.04
Moldova	4.25	4.29	4.50	4.71	4.88	5.07	4.96	4.96	5.00	5.07
Russia	4.58	4.88	5.00	4.96	5.25	5.61	5.75	5.86	5.96	6.11
Tajikistan	5.75	5.58	5.63	5.63	5.71	5.79	5.93	5.96	6.07	6.14
Turkmenistan	6.75	6.83	6.83	6.83	6.88	6.93	6.96	6.96	6.93	6.93
Ukraine	4.63	4.71	4.92	4.71	4.88	4.50	4.21	4.25	4.25	4.39
Uzbekistan	6.38	6.42	6.46	6.46	6.46	6.43	6.82	6.82	6.86	6.89
Average	5.31	5.41	5.51	5.57	5.66	5.74	5.78	5.79	5.84	5.92
Median	5.29	5.44	5.50	5.54	5.65	5.72	5.84	5.91	5.98	6.13

There are some particular practices that Georgian government can undertake. First of all, the government should guarantee free and fair elections, and the opposition groups should access the campaining tools in an easy way. Secondly, it is necessary for the government officials to improve the dialogue with society, in other words, there should be an incentive in increasing communication with people. Moreover, informal policy making should be avoided, and the state institutions have to acquire stronger positions in the process of decision making. Lastly, Georgian government has to give more priority on improving the rule of law and in parallel with this condition, there has to be provided an environment in which judiciary can act in a more independent way.

Georgian state institutions have wekanesse in terms of stability and sustainability. As a result, the state cannot operate in an efficient way. In addition, corruption is seen as the most important reasons for the deficient situation of Georgia. Corruption on the borders of Georgia threatens regional and economic security of the country. Moreover, the existence of Russian Federation as a powerful neighbouring country creates some problematic circumstances for the government of Georgia.

In a general sense, it can be seen that Georgia has a cosiderable security problem. Georgia wants to be a part of Western world. There is always stated that the aim of Georgian government is to be a full member of NATO and also to get a seat in the European Union. However, these goals cannot be implemented without solving the current problems. The democracy has not been consolidated within the territory of Georgia. All of these challenges should be considered elaborately by the government, and it is necessary to give priorities to the problems and deficiencies on the agenda.

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Historical and Political Analysis of Moldova

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Abstract
This paper analyses the historical heritage and ethic problem of the Republic of Moldova. Their effects are also examined before and after the Soviet Union. Moldova is two to stay together with Romania and Russia (Soviet Union) because the country both have historical and ethnic heritage with them. The second part of the paper mentions about the democratic transition of Moldova after the collapse of Soviet Union. Trying to aswer whether Moldova is successful or not in terms of democratization, economical issues.

1. Introduction

After the collapse of Soviet Union, Moldova have an important position in its geographic area. Moldova's neighbors are Romania and Ukraine. Moldova has been independence since 1991 and its official language is Moldovan (as same as Romanian). Moldova is not located in a big area and its population is more than 3,500,000 (does not include Transniestria & Gagauz Autonomous regions). Since independence, it is a parliamentary republic. Religions are consisting of Eastern Orthodox 98 percent, Jewish 1.5 percent. 1994 Constitution was replaced 1979 Soviet Constitution.

In this paper, I will try to explain Moldova's past and present historical political, economic and social structure. First of all, Moldova's historical background and significant facts are given. Secondly, ethnic war which is between Moldova and Dniestr region is examined. This conflict is crucial because it is happened during the state building in Moldova. The external effects into the region are also examined. Russia still has pressure in the separatist

area. After that the Gagauz Turks in Moldova was stated. It is one the unique issues according to minorities within the state because it was not bloody separation. Fourthly, triple transition in Moldova was examined with all details and challenges. Finally, the external relations of Moldova were mentioned. These are Russian relations, Romania relationship and the EU. At the end of it, the final paper will show us detailed facts and explanation of the Republic of Moldova.

2. Historical Background

Moldova was an independent principality in the mid-fourteenth century. However its situation was changed, The Ottoman Empire incorporated into in the mid-fifteenth century. The principality of Moldova became a tributary to the Ottoman Empire in 1538. Moldova (known as Bessarabia) was annexed by Russia after 1806 to 1812 Russo-Turkish War. Between 1856 – 1878 Moldova was become an important country by those two countries. Finally, Russia takes the Republic of Moldova back after the Berlin Congress in 1878. Until World War I, Moldova has been part of Russia. In the midst of WWI, Bessarabia declared its independence and voted to be part of Romania. Thus, in 1920s, 1930s It was ruled by autocratic governments. In 1939, Moldova was incorporated into the Soviet Union which is the part of the Molotov-Ribbentrop Pact. This pact is an agreement between Germany and Soviet Union. Therefore, Stalin annexed Moldova in 1940. After the annexation of Moldova, It became part of Soviet Union.

2.1. Economy and Globalization

After Stalin annexed Moldova in 1940, Moldova was not independent anymore and ruled by communist party of the system. Stalin has decreed that Romanian-speaking peasants in Soviet Moldova were Moldovans. During his leadership, Moldova was reunited by the Moldovans and the Dniestrians. In 1944, Moldova finally came under Soviet control as the Moldovian Soviet Socialist Republic. Moldova was controlled by Soviet Union until it gets its independence. Soviet Union was collapsed in 1991 but Russia was still intervened Moldova. Although Russia signed international obligations to withdraw its military forces

remained on Moldovan territory, they have been placed in the breakaway territory of Transniestria against the will of the Moldovan government until 1993. That is why; Moldova's interests are not fit with Transniestria.

3. Moldova's Ethnic War

Conflict in former Soviet Republic of Moldova started after it gets its independence in 1991. This conflict started between Moldovans and Transnistria (Dniestr region, North-east side of Republic of Moldova). Until 1970s ethnic Moldovans were less represented in many favorable jobs, professionals and industrial works during they dominated the poorer agricultural sphere. In 1980s, even though the hard working conditions have not improved, the linguistic problem stated between Russophones and Moldovans. Most of Moldova's ethnic Russians live in the Dniestr region. Before the ethnic war, the region was ethnically mixed; 40 percent Moldovans, 28 percent Ukrainians, 25 percent Russians (Kaufman, 1996). On the other hand, the population rates changed like Moldovans 78.2 percent, Ukrainian 8.4 percent, Russian 5.8 percent, Gagauz 4.4 percent, Bulgarian 1.9 percent and other 1.3 percent. This data has not included Transdniestria region's population.

Russians got used to speak their own languages during the Soviet period. While Moldovans began to demand linguistic and other favorable to themselves in 1980s, Russians united in opposition. On the other hand, the Dniestrian Russophones are not ethnic group, they untied for ethnic interests against Moldovan interests. In this point they have different position than Gagauz Turks. Another reason of the war is that Moldova is an important region because of economic interests. Transnistria was not an ethnic group, ethnic Moldovans were th largest single group in the region. However, the importance of the region in Soviet steel production and the military sector meant that Transnistria's inhabitants were fundamentally linked, in terms of both livelihood and social identity, to Soviet institutions like the Communist Party which owned strategic industries and the military (King, 2000). In addition, in 1989 the republican Supreme Soviet adopted many language laws which made Moldovan as the state language and authorized the use of Latin alphabet, not Cyrilic one. This is also fired the war. Not only language issue is the reasons of the conflict but also economic interests. Industrial managers and military officers in

Transniestria wanted to take control in the region. Their aim to control governmental and security structures of Transnistria. Transnistrians also said that there is a threat of cultural Romanianization.

There are 2 main preconditions of the ethnic war. Firstly, Republic of Moldova was contained by Bessarabia and the Dniestr region. This part has never been part of Romania, except for a brief military occupation in 1914 – 1941. The Dniestr region shaped the core of an autonomous area in Ukraine called the Autonomous Soviet Socialist Republic. Secondly, Mikhail Gorbachev' policy of glasnost started in 1987. Minorities got a chance and liberty. Although glasnost, openness, is good thing, it created contrast in socialist system. As a result of glasnost and perestroika, they get opportunities for democratization and nationalist mobilization. Moldovan Popular Front was established with the aim of protecting Moldovans. As one Popular Front leader attributed that either we return to Latin script and get Moldovan designated the state language, or else we shall disappear as a language and a nationality Socor, 1989). After all preconditions and their results, the Dniestrian elites tired to establish separatist coalition in the parliament. In order to obtain power, they used local media to increase hostility and fair against Chisinau. They also continued orthodox Communist policies to attract the support of the Communist ideology. In these points Moldovans' interests are completely in opposition to Russian nationalism. Their aim is to separate the region, Transnistria started to apply violence against Moldovans with the help of Russians. In the beginning of 1990, Transniestria declared its independence against Moldova. Besides, they helped presidential elections and referendum in Moldova, 1991. As a result of a referendum, Dniestrian's leader Igor Smirnov proposed independence as a part of the Soviet Union but it became separate from Moldova. Indeed, he declared Dniesrian independence. In early 1992, conflict increased with the help of Soviet Union giving armed-aid and at the end so they were successful to drive out Moldovans from the region. Between 1991 and 1992 Soviet Fourteenth Army intervened in Transnistria. The Dniestrians had brought in most of the territory which they wanted. Moscow still has influence in the region. In 1994, the cease-fire was built but problems are not solved yet. As far as Russian aid to the separatist region continues, it is seen difficult for peaceful atmosphere. In addition to good relations between Transnistria and Russia, the region has declared Russian as an official language in their territory under their control.

Despite numerous round talks, they have no reached any conclusion about the final status of Transnistria. Moldova signed an agreement with the pressure of the OSCE in 1994. After that Moldova managed to secure Russian agreement about withdrawal of Russian forces in 1999.

With the help of the statistical results with 5 independent variables; except for the number of employees, all the variables are directly related to value added in manufacturing industry. Although the equation can explain value added using the statistics; the sign of the trade is not as we expected and number of employments seem insignificant. There may be due to the some factors such as capacity of a firm, capital or productivity may affect value added in Turkey.

We try to explain globalization; as noted before, with the number of tourists and openness of Turkey which is the ratio of the total amount of exports and imports with GNP. However, only the number of tourists seems to be significant, and shows that it is directly related with the amount of value added. On the other hand, it is seen that the openness of a country, especially developing countries like Turkey, does not reflect any kind of production, and therefore the value added in manufacturing industry.

3.1. Russian influence in Transnistria

Russia has been supporting economically. Especially, The Russian gas monopoly, Gazprom, while pressuring Moldova to pay their massive energy debts, has continued to supply subsidized gas to the separatist areas. As I mentioned before, after the collapse of Soviet Union, gas prices increased in prices suddenly.

Until late 1996 the head of the Transniestrian central bank was reportedly a member of Russian intelligence service; even after that, bank officials continued to receive training in Moscow and St.Petersburg (Niculina, 1997).

Transnistria also have right to import and export goods directly or via other parts of Moldova, without paying duties at the entry to Moldovan-controlled territory. This is damaging the Moldovan economy.

Russia encouraged Transnistirans with Russian citizenship so they began to themselves as an independent state. Russia gave them dual citizenship. In August 2000 Moldova adopted a new citizenship law which provides for dual citizenship based on bilateral agreements. However, Currently, Moldova does not have any such agreements within foreign countries. Therefore, many of them have taken Russian citizenship (King, 2000).

4. The Gagauz Turks

In historical sources, there is not too clear information and sources about Gagauz Turks' homeland or their origin. Besides, since the end of the nineteenth century, they had started to come up in history. In the beginning of the twentieth has this ethnonym appeared in the sources. The Gagauz entered the historical sources with their migration from Bulgaria to Bessarabia. In Ottoman times, authorities only mentioned religious groups in tax registers and similar sources. Although they are coming from Turkish ethnic, they are non-Muslim. Therefore, during the Ottoman Empire, they were paying high amount of tax than Muslims. The Gagauz are Turkish ethnic group and Turkic-speaking group. Currently, they are living in south Moldova. Unlike Turks, the Gagauz are Christian Orthodox. The Gagauz Turks are not just living in Moldova. They also live in Ukraine, Turkey, Bulgaria, Romania, Greece, Kazakhstan, and Uzbekistan. In 1957, Gagauz was recognized as one of the Soviet Union's official languages, with a Cyrillic-based alphabet.

Between 1959 and 1962, there was language instruction in schools that had Gagauz pupils, but this was abolished in 1962 because monolingual Russian education was easy than multi one. In Addition, during the perestroika and glasnost era, Gagauz language instruction was reinstigated. They got opportunity to talk freely.

4.1. Gagauz Autonomous Region

They used glasnost & perestroika as an advantage. They stated that they have right to use their own language and representing their culture. In 1988, the Gagauz established Gagauz Halkı (the Gagauz People's Movement). The main aims of the organization were the promotion of the Gagauz language and culture and a negative attitude toward the Soviet system. According to minority policy as a part of glasnost, Moldova and Gagauz has same opinion to be independent. The relationship between the Gagauz and the authorities disrupted which was a report on the history of the Moldavian Republic issued by the parliament in August 1990. The report confirmed that the Gagauz were not indigenous residents of the republic, that their homeland was Bulgaria. They came to the territory of the Moldavian SSR at the invitation of the Russian czar. Therefore, they were labeled an "ethnic group," as opposed to a "nation." According to this report, the status of the Gagauz as an ethnic group denied them the right to claim territory. Moldova got its independence in 1991. Gagauz Autonomous Region was defined in Moldova since 1994. The Gagauz Turks' independence was not bloody because they did not want to get any territory from Moldova. The Gagauzs have just continued their own language and culture. In this respect, their aim is completely different than Transnistria.

5. Transition Period in Moldova

Most wealthy counties in the world are democratic; the most democratic ones are wealthy except India. On the other hand, in the poor countries' democratization is unlikely. Poverty is the principle, obstacle to democratic transition so the future of democracy depends on the future economic development (Huntington, 1991).

5.1. Economic Transition

Economic transition should be composed by privatization, property rights, an unfolding process of competitive price-setting, production and growth. The Republic of Moldova has a specific situation from the echelon of post-communist states where the economic

transition progresses slowly. During the Soviet period, Moldova's economy was mostly based on agricultural production. Moldova had sent its agricultural output to markets throughout the Soviet Union; it had received subsidized energy imports in return. After independence of Moldova, energy prices suddenly increased to the world prices.

Many economic reforms were developed in the mid 1990s. These are freeing up the vast majority of the prices and liberalizing domestic trade. Privatization was launched in mid-1994, in order to sell off the state-run small and medium-sized enterprise sector. Private sector in Moldova now accounts for 80 per cent of official GDP.

In 1998, Moldova imported about $125 million in goods subject to import taxes. Also, another $500 million was registered with Moldovan customs officials as entering the country for transit on to Transnistria (Nantoi, 2001).

Although economic growth recorded since 2000, Moldova is still the poorest country in Europe. In addition to that Moldova is almost the first country to have high level of corruption in the world. Life expectancy has fallen year by year because of underdevelopment. Per capita GDP is now equivalent to many third- world countries. Increasing huge amount of unemployment lead to find jobs abroad, primarily in Western, Europe and Russia. The scale of labor migration underlines the failure of elites and institutions to exceed Moldova's unfortunate Soviet inheritance.

Table 1. GDP per capita in Moldova

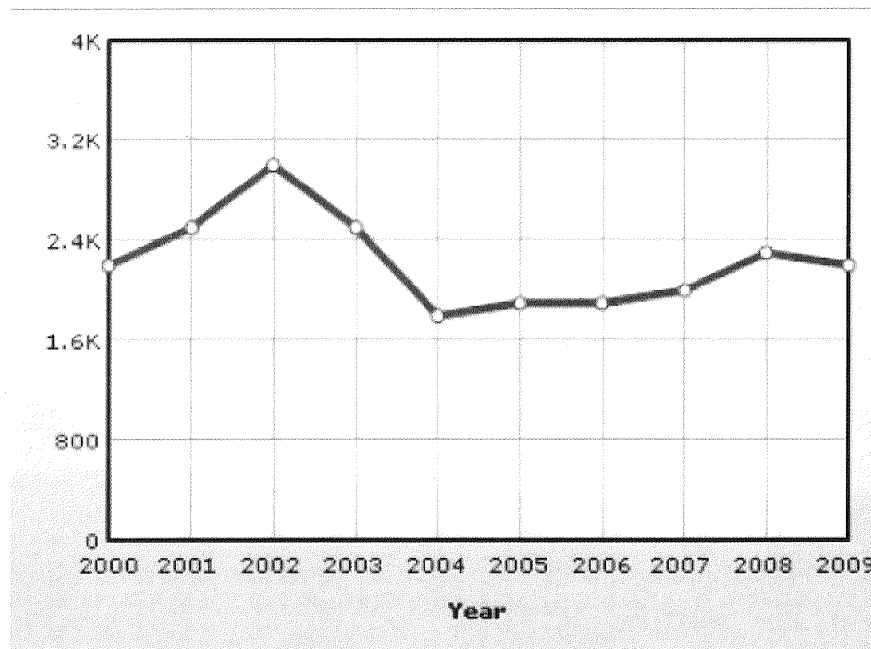| Year	GDP - per capita (PPP) (US$)	Year	GDP - per capita (PPP) (US$)
2000	2200	2005	1900
2001	2500	2006	1900
2002	3000	2007	2000
2003	2500	2008	2300
2004	1800	2009	2200

Figure 1: GDP per capita in Moldova

As you can in the chart and table, the GDP per capita in Moldova has been showed since 2000. Only in 2002, there is a little increase, comparing the other years. Since 2003 it is almost stable but it is too low according to World statics.

During the Soviet era, Moldova was as a major agriculture supplier, providing almost. These are divided like that 20 percent of Soviet's grapes & wines, 30 percent of its tobacco, 10-15 percent of its fruit and vegetables. After the independence, Moldova's sectors have no competition power with the EU. The creation of viable market-based structures has also proceeded slowly.

Moldovan economy based on agriculture and has no energy sources so it is dependent on Russian energy sources. There are not oil resources but also electrical energy dependency. Russia has electrical station in Transdniestria. Thus, both of them depend on each other. Economic reforms are slow because of high corruption and strong political controls forces backing government control.

There is a huge amount of trafficking in persons. It is the one of the problematic issues. Women are trafficked for commercial sexual exploitation. It can be examined in

accordance with human rights. It is the violation of human, especially woman rights. Labour trafficking is also problematic case. Children labors are used in neighbor countries.

As CIA Factbook pointed out that Moldovan government singed a new agreement with the IMF in January 2010 for a program worth $574 million. Economic reforms have been slow because of corruption and strong political forces backing government controls. However, the government's primary goal of EU integration has resulted in some market-oriented progress. The granting of EU trade preferences and increased exports to Russia will encourage higher growth rates, but the agreements are unlikely to serve as a panacea, given the extent to which export success depends on higher quality standards and other factors.

5.1.1. During the Economic Transition, Transnistria's Effects and Transnistria's Economy

Even without high-profile business environment, Moldova would still struggle to attract significant inflows of Western FDI because of small domestic market and the unresolved issue of Transniestria. The separatist region Transniestria is an insecurity factor that creates economic risks too. The region is used as a transit zone of illegal exporting of capitals and international operations of loundary money.

Business only carried on with neighboring states without paying production taxes and/or tariffs. The Ribnita mill, in northern Transniestria, was one of the Soviet Union's most important producers of high-quality rolled steel. After 1994, situation of Transniestria is complicated. They are trying to establish independent state such as Dniestr Moldovan Republic ruble introduced as the region's official currency in 1994, was printed in Germany. They have not only steel industry but also small arms producing.

5.2. State-Building

While establishing state, decision must be made as to "who" we are; that is, a decision on identity, citizenship, and the territorial as well as social and cultural boundaries of the

nation-state. Secondly, rules, procedures, and rights must be established that together make up the constitution or the institutional framework of the regime (Offe, 2000).

5.3. Democratic Transition

Well established constitution, minority rights, exact territorial borders, citizen rights and parliamentary government are the main elements of democratic reforms. Similarly, there should be no territorial disputes, migration problems, minority and nationality conflicts. Those are the main instruments of democratic transition. On the other hand, Moldova have not consisted all these elements so there should be established by the central government of Moldova.

There is no effective transition period and there are many reasons; a lack of strong constitution, ineffective parliament for governance, conflict within Moldova (the Gagauz minority and separatist region of Transniestria), unfair elections.

This table was from the freedom house. The countries grades were examined from 7 to 1. 7 is the worst point which represents the undemocratic position for the states. Although their grade should be better position, all aspects of triple transitions is getting worse. As it can be observed in the table, corruption is one of the most problematic issue during the development process of Moldova.

	1999–2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Electoral Process	3.25	3.25	3.50	3.75	4.00	4.00	3.75	3.75	3.75	4.00
Civil Society	3.75	3.75	4.00	3.75	4.00	4.00	4.00	3.75	3.75	3.75
Independent Media	4.00	4.25	4.50	4.75	5.00	5.00	5.00	5.25	5.50	5.75
Governance'	4.50	4.50	4.75	5.25	5.50	n/a	n/a	n/a	n/a	n/a
National Democratic Governance	n/a	n/a	n/a	n/a	n/a	5.75	5.75	5.75	5.75	5.75
Local Democratic Governance	n/a	n/a	n/a	n/a	n/a	5.75	5.75	5.75	5.75	5.75
Judicial Framework and Independence	4.00	4.00	4.00	4.50	4.50	4.75	4.50	4.50	4.50	4.50
Corruption	6.00	6.00	6.25	6.25	6.25	6.25	6.00	6.00	6.00	6.00
Democracy Score	4.25	4.29	4.50	4.71	4.88	5.07	4.96	4.96	5.00	5.07

The data above was provided by The World Bank, World Bank Indicators 2009.

It is almost the most democratic criteria in Moldova. Its rate is a more than middle which is between 3.75 and 4.00. There are many NGOs in Moldova but they are dependent on the government. As a result, it is a civil society without freedom of expression.

Civil Society

1999–2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
3.75	3.75	4.00	3.75	4.00	4.00	4.00	3.75	3.75	3.75

5.3.1. The Media

NGOs can be participated but all organizations must register with the state. A number of laws formally limit freedom of expression in Moldova but leaders have still difficulties to control the media. Political leader was able to appoint his officers to key positions in the

state radio, television and press. Although the media is restricted by the central government, in rural areas, there is a limited print media so the citizens are not aware of the contemporary issues. The central government has controlled the media that is why its rate is 5.75.

Independent Media

1999–2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
4.00	4.25	4.50	4.75	5.00	5.00	5.00	5.25	5.50	5.75

5.3.2. Political Parties in Moldova

Moldova is an electoral democracy with unicameral Parliament. The president is elected by Parliament whose choice for prime minister must be approved by the Parliament. There is a multiparty system so there are many parties creating political competition. It is highly pluralistic. As a result of high political competition, the parties are established according to different interest groups. There is still communist party is in the parliament, it is huge obstacle according to Western democratization view. There are also parties supporting Russian interests, especially for the separation of Transnistria.

National politics are dominated by the PCRM (Party of Communists of the Republic of Moldova) and the main opposition party is the Party Alliance Our Moldova. In 2007 Moldova local election and in 2008 Turkic Gagauz local election were opposite to PCRM. Last election was held on 29 July 2009and its results like that percent of vote by party; PCRM 44.7 percent, PLDM (Liberal Democratic Party) 16.6 percent, PL (Liberal Party) 14.7 percent, PD (Democratic Party of Moldova) 12.5 percent, AMN (Party Alliance Our Moldova) 7.4 percent. The Parliament was seated by AMN 7.4 per cent, PLDM 18 percent, PL 15 percent, PD 13 per cent, and AMN 7 percent.

This consists of 4 political parties after July 2009 elections. Those are Liberal Democratic Party, Liberal Party, Democratic Party, Our Moldova Alliance. Their purpose overcomes the social and economic crisis and ensuring economic growth, reintegrating territories,

European integration and promoting a balanced, consistent and responsible foreign policy. The coalition said it wants an association agreement with the European Union. Also, the coalition said it wants strategic relations with both Russia and the United States.

Electoral Process

1999–2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
3.25	3.25	3.50	3.75	4.00	4.00	3.75	3.75	3.75	4.00

The situation of electoral process is not bad which is in the middle level because there is a regular election in Moldova. Although there can be corruption or unfair situations, Moldova is an electoral democracy.

National Democratic Governance

1999–2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
n/a	n/a	n/a	n/a	n/a	5.75	5.75	5.75	5.75	5.75

National democratic governance is new formation. Although the new government announced a higher degree of access to public information and openness in its relations with journalists and civil society, cooperation remained mostly formal.

Local Democratic Governance

1999–2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
n/a	n/a	n/a	n/a	n/a	5.75	5.75	5.75	5.75	5.75

The central government continues to exert political control over local public authorities, and opposition-led regions face harassment. As a result, Moldova's rating for local democratic governance as 5.75 (Freedom House, 2009).

5.3.3. Ongoing Problems after the Transition

Important obstacles continued like dominance of old regime incumbents, a lack of democratic history, weak civil society, weak rule of law, relative international isolation. There is still ineffective elite organization & institutions. Bribery and dismal salaries in the education system remain problems. Courts are ineffective, unprofessional and many rules are not carried out. Political influence and bribery are among judiciary. There are still huge obstacles in social issues. National identity is still problem. Inequality is within the society. Women are underrepresented in public life. Women trafficking abroad for forced prostitution.

5.3.4. Corruption

As it can be seen in the table, corruption is the major problem in Moldova. As a result of the government corruption, economic, social and political developments have not changed. The core group owned political power in their hands so they have also economic power. Moldova was listed as he most corrupted government within the Europe governments. Thus, the corruption is a reason of unemployment and poverty as well.

Corruption

1999–2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
6.00	6.00	6.25	6.25	6.25	6.25	6.00	6.00	6.00	6.00

6. External Relations of Moldova

Moldova is a member state of the United Nations (UN), the OSCE, the North Atlantic Cooperation Council (NATO), the World Trade Organization (WTO), the International Monetary Fund (IMF), the World Bank and the European Bank for Reconstruction and Development. In 2005 Moldova began to build better relations with European Union and NATO.

6.1. Relations with the Russian Federation

Russia has been taken into account because of its strategic position and capability. While Moldova tries to deal with conflict in Transnistria region, region gets assistance from Russia. In addition, Russia still continues to claim military power in the Transnistria region of Moldova, despite previous agreements with Moldova and within OSCE and CAF to withdraw its troops and ammunition. Until the conflict in the region solved, it is better to continue better relations with Russian Federation.

6.2. Moldova and Romania Relationship

The relationship of both countries began to break down after Moldova's independence but there is still a connection coming from history. Moldovan language is an identical Romanian. In addition, Pan-Romanism has been a consist part of Moldovan politics. Except Transniestria, Moldova (old Bessarabia) was the part of Romania from 1918 until 1940.In 1991; Moldova's independence was supported by Romania firstly. As a said before there is a special relationship between Moldova and Romania which can be observed during the ethnic war in Moldova. While Ukraine and Russia has supported Transniestria, Romania always sustains Moldova. In 2007, after Romanian membership to European Union, many Moldovans had applied Romanian citizenship seen big advantage by Moldovans because of unemployment and poverty in the country.

6.3. Moldova and the EU Relations

The Partnership and Cooperation Agreement (PCA) was signed on 28 November 1994 and entered into force on 1 July 1998 for the next 10 years. The Agreement represent represents the legal framework for the Republic of Moldova. In 1995, Moldova became a member of Council of Europe. Moldova has been a partner country within the European Neighborhood Policy (ENP) since 2003. Therefore, The EU is developing an increasingly close relationship with Moldova. On the other hand Moldova should focus on the resolution of the crisis in Transnistria. The to the Republic of Moldova was opened in

Chişinău in October 2005, having the status of a diplomatic mission and officially represents the European Commission in the Republic of Moldova.

7. Conclusion

Moldova is not only economically weal but also political and social instability is too high within Moldova. Therefore, long years will take for transition to democratic and stable economic state. Moldova is newly independent state after collapse of Soviet Union. Before this independence, Moldova have been always part of other states or ruled by external powers. Besides this, the county contains many unstable elements like different ethnic groups, external intervention to the politics, weak civil society and rule of law, incompatible and destroyed economy. After all these disappointing reasons, there will be two possibilities in the future of Moldova. Fist of all, Transdniestria region will completely be independent, and then Moldova will start to build its own stable nation-state. Second possibility is that Russia will stop intervene Moldovan internal politics, especially for Transdniestria, Moldova will learn to live with plurality within the state. In both cases, Moldova needs to develop itself because it also wants to establish better relations with European Union. Thus, It should improve its economy and internal political and social situations.

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Democratization In Azerbaijan?

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Abstract

This paper aims to outline Azerbaijan's democratic transition. The author touches upon the triple transition in Azerbaijan as; democratic, economic and nation. Starting with its history the author discusses the triple transition in Azerbaijan. Firstly, the author will discuss the economy of Azerbaijan by examining its economy during Soviet Period and the current economic situation. How it has changed over a time? As second transition the democratization period is examined. The author also discusses the nation's transition. The author examines the civil society, ethnic group in Azerbaijan. The author has concluded that Azerbaijan has not yet a consolidated democracy by examining current situation in Azerbaijan.

1. Introduction

Azerbaijan's geographical location has greatly influenced its history. Because it is located between the Caspian and Black seas, Azerbaijan is a vital crossroad between Asia and Europe. Azerbaijan was inhabited and invaded by different peoples throughout its history and at different times came under Christian, pre-Islamic, Islamic, Persian, Turkish, and Russian influence. The earliest perception of the occupation of the region was by Scyhians in the ninth century BCE. The Scythians were a nomadic people with territorial control of the central Asian steppes. In the eighth century BCE the Medes annexed part of the territory that is now Azerbaijan to their empire. In the rise and fall of empires in the area the region became part of the Persian empire. When Alexander conquered the Persian empire in 330 BCE the region became part of his empire but was still ruled by Persian satraps. The name Azerbaijan apparently comes from Persian and means "land of fire".

The Christian kingdom of Caucasian Albania (which is not related to Albania in the Balkans) and the state of Atropatena are regarded as the beginnings of the formation of Azerbaijani nationality. Arab invasions in the eighth and ninth centuries could be seen the start of Islamization. Turkish language and customs were introduced with the invasions of the Seljuk Turkish dynasty. It is still possible to see examples of literature and architecture and they are considered as important parts of national heritage. From sixth to sixteen centuries, the local dynasty of Shirvan shahs lefted visible marks in Azeri history in the form of their palace in Baku.

Azerbaijan was controlled by neighboring powers and was invaded repeatedly until the eighteenth century. In the nineteenth century, Iran, the Ottoman Empire, and Russia took an interest in Azerbaijan. Russia invaded Azerbaijan, and with the treaty of Gulistan Persia, Russia agreed that Azerbaijan would be divided along the Araz River, with Russian Azerbaijan north of the river, and Iranian Azerbaijan to the South. Today, many Azeris are living in South Azerbaijan which is called north part of Iran. This Azeri population has big impacts on domestic policy of Iran. They are also part of the parliamentary elections.

First the tsar's army occupied Georgia and during 1806 and 1807 conquered most of Azerbaijan. By 1807 Nakhchivan was the only khanate to remain independent. The territory of the present Azerbaijan Republic was ceded to Russia by Iran as a consequence of the second Russian-Persian War by the Treaty of Turkmenchay in 1828.

In April of 1918 the Bosheviks' Red Army invaded and captured Azerbaijan. The Azerbaijan troops were preoccupied with suppressing the rebellion of the Armenian population of the region known as Nagorno-Karabakh. By September 1920 Azerbaijan was effectively annexed to the Soviet Union. Soviet troops also occupied the territory of Nakhichevan. In 1921 the Soviet Union decreed the creation of a Transcaucasian Federated Socialist Republic which consisted of Armenia, Azerbaijan and Georgia. In 1924 the Soviets declared the Nakhichevan as a part of Azerbaijan but with autonomous republic status within the Transcaucasian Republic. Also the Armenian enclave of Nagorno-Karabakh will be an autonomous republic within the Transcaucasian Republic.

According to the Constitution of 1936, Stalin ordered the dissolution of the Transcaucasian Federated Socialist Republic and Armenia, Azerbaijan and Georgia became separate republics within the Soviet Union. The autonomous republics of Naxçivan and Nagorno-Karabakh became part of Azerbaijan.

During the first years of the 19th century Russia re-awoke her expansionist dreams in the caucasus. Most of the nineteenth century, the Russian Empire extracted commodities from Azerbaijan and it invested little in the economy. However, the exploitation of oil in Azerbaijan at the end of the nineteenth century brought an influx of Russians into Baku, increasing Russian influence and expanding the local economy.

In the second half of the 19th century, the unprecedented growth of oil extraction began. In 1901, about 50% of all global oil extraction happened around Baku.

During Stalin's regime, Azerbaijan suffered, from forced collectivization and far-reaching purges. However, during the same period, Azerbaijan also achieved significant gains in industrialization and literacy levels that were impressive in comparison with those of other Muslim states of the Middle East at that time.

After the disintegration of the USSR, the Supreme Soviet of Azerbaijan accepted the declaration "On the restoration of the State Independence of the Republic of Azerbaijan", and the sovereign Azerbaijan Republic declared its independence on August 30, 1991.

Since their independence nothing has been easy for Azerbaijan, it has faced number of serious problems. They have been trying to achieve transition to market economy and to democracy.

Azerbaijan is an independent country since August, 1991. Since 1991 it has been facing many important problems to transition to market economy and democracy. It is still questionable that if Azerbaijan is a democratic country or not.

Azerbaijan is located at the crossroads of Eastern Europe and Western Asia, it is bounded by the Caspian Sea to the east, Russia to the north, Georgia to the northwest, Armenia to the west, and Iran to the south. The exclave of Nakhichevan is bounded by Armenia to the north and east, Iran to the south and west, while having a short borderline with Turkey to the northwest.

Its formal name is Azerbaijan Respublikası and it is 86.600 sq km. Its capital city is Baku. By July 2009, population was 8,238,672. Its monetary unit is Manat.

Population of Azerbaijan consists of some major ethnic groups; the majority of Azerbaijan's population consists of a single ethnic group whose problems with ethnic minorities have been dominated by the Armenian uprisings in Nagorno-Karabakh. Most of Armenians were send to Armenia but today still there are Armenians who forme one of the problematic small ethnic group in Azerbaijan. They are complaning about the discrimination in some areas such as education,employment and housing.

Nevertheless, Azerbaijan includes several other significant ethnic groups. Except Armenian, there are smaller ethnic minorities. These are is Talysh ethnic group they are Iranian speaking people who are living in the south of Azerbaijan. Another group is Lezghins ethnic group they are Daghestani group of whom live across the Russian border in Dagestan, but 171,000 of whom resided in northern Azerbaijan in 1989. The Lezgins, who are predominantly Sunni Muslims and speak a separate Caucasian language, have called for greater rights, including the right to maintain contacts with Lezgins in Russia. The Russians are another ethnic group in Azerbaijan. "The Russians arrived in two waves. The first wave began to arrive following the Russian acquisition of the Transcaucasus in 1828 -- at first a mixture of Tsarist functionaries, and members of Christian sects such as the Molokans and Old Believers seeking the relative freedom of life on the periphery of the Russian Empire. As Baku became industrialized through the exploitation of oil resources in the late 19th century, the second wave began: Slavic and other non-Azeri settlers continued to migrate to the region throughout much of the Soviet period" (Deparment of Justice, 1993).

Russians in Azerbaijan are very unlikely to engage in violent collective action against the Baku government because their group identity is weak. They have few collective grievances, little political organization, are overwhelmingly urban, and have no history of collective political action. However, the political and economic influence of the Russian minority has declined over the past 15 years and this could lead to increased tensions. While the group has not experienced any direct repression, some forms of political discrimination have been examined. With a resurgent Russia, much will depend on how Moscow supports the minority.

During the 1990s Azeri elite and public opinion was mostly hostile to Russia for seeming to take side with Armenia in the conflict over Nagorno-Karabakh, which nominally remains part of Azerbaijan. Russians as well as Jews, Armenians and other Slavs enjoyed an advantaged position in Azerbaijan during the Soviet period. Armenians and Russians occupied the key industrial and financial positions in Azerbaijan and considerable resentment was generated towards both groups as a result. Ethnic Azeris in Azerbaijan quickly became an economically disadvantaged majority group. Azeris have resented the policies of russification and imperial control which they claim have damaged Azeri culture. This russification was especially destructive during the Stalinist period, when the Azeri intelligentsia was decimated and the Russian language came to dominate Azeri politics and society. These issues contributed to general frustration with Russia and Russians, as well as resentment of Russia's role in their crisis with the Armenians.

Today, the Russians in Azerbaijan share many traits with Russian minorities in other post-Soviet states. They are clustered predominantly in urban areas they are not highly organized around their ethnicity and they have not experienced communal conflict. There is some evidence of Russian families returning to Baku, probably due to the recent oil boom. While Russians are still represented in parliament and spent most of the 1990s as an economically and socially advantaged group, now they find themselves in a disadvantaged position regarding official positions, although they face no overt economic discrimination. Nevertheless, there were no instances of grievances voiced by members of the Russian community in recent years.

Azeris see Russians as occupier and crude. Russians think that Azeris are not civilized as much as Russians. They see Azeris as uneducated people, and consider them as lower from Russia by economic and social means also they are backward. However some of the Azeri elite especially who are educated in Russian schools do not see Russians as crude or as enemy actually sometimes they consider that some of the fellow Azeris are really backward and socio economically lower.

2. Religion in Azerbaijan

The main religion in Azerbaijan is Islam. It was introduced there when Arabs invaded the country in the middle Ages. Before that, the ancestors of Azerbaijanis professed pagan religions (fire worshipping, Zoroastrism, Manichaeism, Christianity). With the fall of the Soviet regime in Azerbaijan the period of Islamic revival began. Mosques, religious institutions have reopened

The majority of Azerbaijani Moslems belong to Shiit branch. The minority is represented by Sunnits. The main religious body is the Caucasian Moslems Board. Since Azerbaijan is a multinational country there are also orthodox (Georgian, Russian and Armenian minorit ies) and Judaic communities.

Among the total population, 93.4 percent is Muslim (70 percent Shia and 30 percent Sunni). Christians (Russian Orthodox and Armenian Apostolics) make up the second largest group. Other groups exist in small numbers, such as Molokans, Baha'is, and Krishnas. Until recently, Islam was predominantly a cultural system with little organized activity.

Azerbaijan is a secular country. The constitution of Azerbaijan provides for freedom of religion, and the law does not allow religious activities to be interfered with unless they endanger public order. According to article 48 of its Constitution, ensures the liberty of worship to everyone. Everyone has a right to choose any faith, to adopt any religion or to not practice any religion, to express one's view on the religion and to spread it. According to paragraphs 1-3 of Article 18 of the Constitution the religion acts separately from the

government, each religion is equal before the law and the propaganda of religions, abating human personality and contradicting to the principles of humanism is prohibited. At the same time the state system of education is also secular. There are both Azeri and Russian schools in Azerbaijan.

The relations the state-religion are regulated by the State Committee for the Work with Religious Associations of Azerbaijan established by the decree of President Heydar Aliyev in 2001.

3. Transition to Democracy

Starting with the Brezhnev era Soviet began to lose control over Azerbaijan. Its journey toward political democratization advanced with free election in June 1992 (Dawisha & Parrott, 1997). Deterioration of totalitarian control paved the way for the establishment of democracy. Efforts for to establish democracy started in cultural realm not political. Significant resistance to system of era primarly came from Azeri artistic and intellectual elite, because they were pursuing national goals and gradual movement toward democratization. All of them started to show their resistance in their works such as songs, poetries,books,etc. Azeris elite of the 1980s and 1990s struggled to establish democratic institutions and to create a civil society in postcommunist Azerbaijan. İntellectual and also the ordinary citizens believed that only a strong leader could help Azerbaijan for democratization. Strong legacy of USSR as mentality control of people make elites and ordinary people to believe strong central power and strong leader should come to resolve conflicts.

Events outside Azerbaijan had also significant effects on the republic although the increasing national awakening. There were two major reason which effected the transition. The first one is the Gorbachev's "glasnost" policy. It helped awakening of republic. With the opennes some people thought that they can eventually gain independence. Second one is long-lasted Nagorno-Karabakh issue. Armenian demanded transfer of the Nagorno-Karabakh Autonomous region to them. Nagorno-Karabakh conflict mostly had effected the transition in a negative way.

Major result of glasnost policy was the reawakening of the nationalities question in the USSR in the late 1980s. On the other hand, Gorbachev's program of political democratization gave impetus to the rise of grass-roots political movements in the republic. This also caused the reawakening of nationalism and irredenta on the part of the former brought the question of Nagorno-Karabakh to the surface of relations between the two republics once again (Croissant, 1998).

4. Nagorno-Karabakh Conflict

Nagorno-Karabakh is a landlocked region located in the South Caucasus, lying between Lower Karabakh and Zangezur and covering the southeastern range of the Lesser Caucasus Mountains. Population around 80.000 and the are is 8.223 sq km. It is mostly governed by the Nagorno-Karabakh Republic. It is an unrecognized state which was established on the basis of the Nagorno-Karabakh Autonomous Oblast within the Azerbaijan SSR of the Soviet Union. The territory is internationally recognized as part of Azerbaijan however it cannot be said that Azerbaijan has been exercising power over the region since 1991. Administratively, Nagorno-Karabakh had never been part of Armenia in modern history. Under the Tsarist Empire it had been part of Baku province. In 1923, it was formally declared as autonomous oblast within the Azerbaijani SSR.

The conflict over Nagorno-Karabakh has a long history. It is significant for Azerbaijan's transition and the region was reemergence of long-standing dispute over the region of Nagorno-Karabakh at the begining in 1988. And it is the most violent conflict between Post-Soviet republics. "The Karabakh region is disputed on mainly historical grounds by both Azeris and Armenians. The Azeris claim that the region has always been under Azeri rule in known history; by contrast the Armenians advance the claim that Karabakh was originally an Armenian site of residence and that Azeri rule was illegitimate" (Cornell, 1999). Nagorno-Karabakh had been presumed by both Armenians and Azeris as part of their historical patrimony. Armenian sources claim that Karabakh was part of a great Armenian kingdom as far back as the fourth century BC. Nevertheless, the area of present-

day Azerbaijan, known as ancient Media, was invaded by Persians in the 6th century BC, by Alexander the Great in the fourth and by Romans in the First (Cornell, 1999).

In soviet era the political struggle for Karabakh began, and would last long, as it took the Soviet leadership three years to settle the issue (Cornell, 1999). During 1922, there was still unrest reported in Karabakh and also there were still continuous discussions about the status of Karabakh in Azerbaijan.Finally they decide to give the region rank of an autonomous Oblast which includes the mountainous part of Karabakh and consequently was called the Nagorno-Karabakh Autonomous Oblast, NKAO.Under the strong control of Soviet Union, Nagorno-Karabakh conflict had been seen as resolved but when USSR started to lose control over Nagorno,Karabakh, problems reemerged again especially by 1988. Following a quite common trend of the Glasnost period, the ecological demonstrations quickly transformed into political, nationalist demonstrations asking for the return of Nagorno-Karabakh and Nakhjivan to Armenia (Fuller, 1987).

By early 1992, the power vacuum created by the dissolution of the Soviet Union led the loss of the last factor containing the conflict. Thus with the imminent withdrawal of the formerly Soviet forces, Karabakh became the scene of what gradually increased to a full-scale war. The Armenian side, was ready to solve the conflict through military means.

On 27 February, Armenian forces seized the small but strategically placed town of Khojaly, on the Agdam-Stepanakert road. Khojaly was the victim of ethnic cleansing. A great part of the civilian population of the town was killed and the remaining population was forced to flee over the mountains to seek refuge (Cornell, 1999).

In the months following the Khojaly massacre, the Karabakh Armenians continued their offensive, supported by volunteers from Armenia. In may the towns of Shusha and Lachin were conquered and became a corridor between Armenia and Karabakh. In June 1992 Azeri counter-offensive recaptured Agdere/Mardakert and Shaumian region in the North of Karabakh. Conflicts continued to take place until 1994 Peace Agreement. In July 1994, the defence ministers of Armenia and Azerbaijan as well as the head of the Karabakh

Armenians' armed forces signed a document giving the cease-fire a legal basis(Cornell, 1999).

Long-standing Nagorno-Karabakh conflict did not have an impact on national consciusness among Azeri elite but it had huge impact to accelerate the emergence of national movement in Azerbaijan during late 80s. Also it had a huge impact on transition period and democratization of Azerbaijan. Nagorno-Karabakh conflict also helped Azerbaijan to understand that the bad rule of Moscow and their dissatisfaction with the rule. Soviet sided with Armenia for Nagorno-Karabakh issue increased tension in Azerbaijan.

5. The Roles of the Azerbaijani Leaders in the-Transition Period

Until today Azerbaijan has been witnessed the presidency of four people. The first president of the republic was Ayaz Muttalibov. He became president 1991 and it lasted only one year. He was a supporter of Moscow and Gorbachev. Although Soviet Union disintegrated in 1991 he continued to support him. During elections he did not permit any opposition party to run in the elections against him. There were increasing voice against him in Azerbaijan an he had to call for a new election. He lost the elections and he had to resign in March 6,1992 because of the loss of the town of Khojaly and Khojaly massacre. Thousands of azeris were killed in Khojaly.

The second president of Azerbaijan was Abulfez Elchibey. He was elected in 1992 with about 60% of vote. He was the only president who was elected fairly and the election was the most democratic one in history of republic.Unfortunately he remained only one year as a president. He was the founder of Azerbaijan Popular Front and also the president of it.

His goals were to resolve Nagorno-Karabakh conflict,to gain independence from Soviet Union (for the first sight it can be understand that they want it under the control of Soviet Union actually they wanted dismantle of Soviet Union). He aimed more democratic Azerbaijan with full civil society and human rights ,local control over elections. He tried to achieve political,economic and cultural sovereignty for Azerbaijan and he also aimed to

return all lands to peasant by granting them freedom in agricultural policy. And also his target was to end the exploitation of natural resources.

However he was elected farily and democratically his presidency lasted only for one year. Why did this democratic era fail? There were four major reasons. The first one was the Nagorno-Karabakh war. The policy they chose for solve the problem did not work well. On January 13-14 1990 a bloody conflict was errupted and Popular Front had been seen as a provakator of this conflict. Second problem area was economy. There was high percent of inflation and serious economic problems related to inflation. Elchibey's government failed to control inflation.

The other major problem was the impact of USSR control and influence of old system. His government decided to dismantle the old communist system domestically. Elchibey cut ties with CIS. Popular Front also aimed to dismantle the remnants of the KGB and the old Supreme Soviet, the planned economy and the black market. However they could not handle all these aims.

He decided to call for a help from former Communist Party leader Heydar Aliyev who was republic's most charismatic, strong leader. Elchibey could call his supporters but he preffered to call Aliyev because it would be more peaceful. By also taking advice of Turkish government Elchibey decided to benefit from Aliyev's advices and his wisdom. On June 17, Elchibey was on the way back to his home. He left Aliyev acting as president.

Aliyev had come to power behind the flimsiest fig leaf of legitimacy, he was quick to validate that move (Dawisha& Parrott, 1997). In late August referendum of confidence on Elchibey was held. Vast of majority of people voted "no confidence" in elected president. He did not lose so much time for to wait and he decided to held presidential elections on October. He was elected as the third presindent of Azerbaijan by taking 98.8% of the vote,highest of all time! He also arranged parliamentary elections on August 12, 1995.125-seat in unicameral parliament was provided and they were going to serve five-year term. One hundred representative were elected by majority vote and they were from electoral districts and the other twenty-five were elected from political parties. Some international

observers claimed that the in 1995 elections there were many irregularities. Heydar Aliyev and his supporters tried to eliminate many opponents during the pre-election period. Four parties denied registration, including the Yeni Musavat party (Dawisha & Parrott, 1997). The leader of the party was Isa Gambar who is the biggest thorn in Aliyev's side.

Heydar Aliyev joined the Azerbaijan SSR People's Commissariat for State Security (NKGB) in 1944. In 1954, NKGB became known as Committee for State Security, or the KGB. Aliyev rose quickly within the agency to the rank of Major-General, became a deputy chairman of Azerbaijani KGB in 1964, and the chairman of this organization in 1967.

By December 1991, when Soviet Union ceased to exist and Azerbaijan became formally an independent state, despite Mutallibov's presidency, Aliyev independently governed Nakhchivan. During Elchibey's period, Aliyev continued to govern Nakhchivan without any subordination to official government in Baku. Popular Front's Minister of Interior, Isgandar Hamidov attempted to forcefully overthrow Aliyev in Nakhchivan were thwarted by local militia in Nakhchivan's airport. During the same period, Aliyev independently negotiated cease-fire agreement in Nakhchivan with Armenian President Levon Ter-Petrossian. On June 9, 1993, amidst the military coup in Ganja, led by Colonel Suret Huseynov as a result Abulfaz Elchibey was forced to invite Heydar Aliyev in Baku to mediate. On June 24, 1993, Elchibey himself left Baku for exile in his native Nakhchivan while Aliyev was elected to become a Chairman of the National Assembly of Azerbaijan, also assuming temporary presidential powers. In August 1993, Elchibey was stripped of his presidency by the nationwide referendum for vote of confidence and Aliyev was elected a President of Azerbaijan in October 1993.

Although Nagorno-Karabakh conflict and economic hardship caused the Elchibey's end Heydar Aliyev was really successful to handle all these problems and he stayed in the office ten year. He was elected two times as president. He controlled the Nagorno-Karabakh conflict and eventually he signed a ceasefire with Armenians in 1994. During his presidency, Aliyev ruled his country with a firm hand, encouraging foreign investment while discouraging political dissent. He twice ran and won the presidency of Azerbaijan in

national elections (held in the October of 1993 and the October of 1998), but international observers regarded neither election as free nor fair. Oil is the most important source for Azerbaijan's economy and Aliyev was successful at attracting multinational companies to invest heavily in Azerbaijan's oil industry. Azerbaijan controlled large oil and gas reserves under the Caspian Sea but had suffered poor management in Soviet times. In 1997 President Aliyev signed a huge contract with the international oil consortium AIOC. He also acted as one of the driving forces behind the controversial multi-billion dollar project to build an oil pipeline from Baku to Ceyhan in Turkey, via neighboring Georgia (thus bypassing Russia to the north and Iran, much to those countries' displeasure). This was a very important movement for both Azerbaijan and Turkey. Azerbaijan's economy did well however everthing was under the control of the state so Azerbaijan gained an unenviable reputation as one of the most corrupt countries in the world. Aliyev's health began to fail in 1999, when he had a major heart bypass operation in the United States. He later had prostate surgery and a hernia operation. When Heydar Aliyev was sick he wanted and adviced that his son Ilham Aliyev must be next president of Azerbaijan. With 2002 constitutionsl amendments gave so much rights to president also it contained a decree that if the president is incapable to become president or resigned prime minister could be the next president. This amendment pave the way for the presidency of next and current president of Azerbaijan, Ilham Aliyev.

Ilham Aliyev became the fourth president of Azerbaijan in 2003 presidential elections. He really effected the democratization process. Status of Azerbaijan was not free and still is not also it is downward because of the monopolization of power by Ilham Aliyev and New Azerbaijan Party. "President Ilham Aliyev and the ruling New Azerbaijan Party further marginalized the political opposition and other institutions of democratic accountability in 2008" (Freedomhouse website).

If we ask if there is any fair election in the history of Azerbaijan the answer will be 1992 presidential elections. After the disintegration of USSR 1992 presidential election can be considered as fair and competitive. Since 1992 there have been no fair election held in Azerbaijan.

6. Political Parties and the Party System

Parties and similar groups are the most common forms of political association in Azerbaijan. The political scene in the republic is characterized by the seeming inability of many individuals to subordinate themselvs to a party led by someone else (Dawisha and Parrott, 1997).

The most successful leaders are charismatic and most of them are higly educated. Since the return of Aliyev it cannot be said that there is toleration for opposition and critism these are low. Aliyev rule was like a one man rule. The leading opposition parties are The party of the Azerbaijan Popular Front, New Musavar party founded by Isa Gambar. He is co-leader of the Popular Front. Azerbaijan Popular Front is like an umbrella group because they use it in order to contend in the fall election in 1995. The other parties are the Bozkurt Party, Azerbaian National Independence Party and Azerbaijan Communist Party.New Azerbaijan Party is founded by Heydar Aliyev in 1993.

7. Transition to Market Economy

Azerbaijan was the economic colony of USSR.Soviet Union wanted to keep it for oil reserves. In Azerbaijan people belive that they will be very rich thanks to oil reserves. Azerbaijan was producing steel and sending them to Georgia for car manufacture.Caviar from Caspian Sea were too valuable.Azerbaijan also were exporting carpets to Germany. Today Azerbaijan still in a economic transition which the state is the conductor of the economy.Azerbaijan's income mostly come from oil resources.Related with this FDIs, construction and transportation sector has important role.Also agriculture is a strong in Azerbaijan.However GDP per capita was 7.143$ in 2009. There is still inflation which can cause increaseing fiscal spendings. Also, it can lead to high oil prices and inflexible exchange rate as inflation rate in 2009 was 20% (Freedomhouse website). Azerbaijan is good at to make some reforms which put Azerbaijan into top reformers list of World Bank in 2009.However insufficient public administration and strong intervention of state decrease the impacts of this reform in Azerbaijan. Today most important sector are in the

hands of the political ruler and elites.There is a huge black market and high level of corruption and fraud.

Azerbaijan has a rich agricultural and industrial potential as well as extensive oil reserves. However, the economy is heavily dependent on foreign trade. The late 1980s and 1990s saw intensive trade with Russia and other countries in the Commonwealth of Independent States.

Oil plays a great role in economy, it formes 90% of the economy. İn a petroleum-thirsty world oil is the most important source for all countries. Azerbaijan is the major player in oil sector. Since 1990, oil has been major impact for transition to market economy and democracy. However again it is the oil which cause black market and corruption in Azerbaijan's economy. All Azeris share the belief that foreign investment in oil will yield a financial bonanza and make everyone rich. Not until Elchibey had been in power for nearly a year was an agreement prepared between Azerbaijan's state oil company, SOCAR, and a consortium of western companies. When Heydar Aliyev took power, his government stated publicly it wanted to review the agreement (Dawisha & Parrott, 1997).

Aliyev assured the representatives of company privately for the continuation of deal. After three months of talks, in 1993 the terms were more advantageous to Azerbaijan than those of the previous deal. Azerbaijan's share of profits grew to 80 percent.

Both the production and pipeline question have brought Azerbaijan's neighbours into the oil picture. Russia challenged Azerbaijan's right even to negotiate oil extraction issues. In Aliyev period Russia shifted its interests to the pipeline. It demanded northern route for the pipeline, through Grozny and terminating at the Black Sea port of Novorossisk. However Turkey objects to this or any route that will increase oil tanker traffic through the ecologically sensitive Bosphorus (Dawisha and Parrott, 1997). Despite the objection of Turkey Russian demand was approved in 1995. In May 1995 USA also approved an oil swap to Iran. This arrangement helped Azerbaijan to sell unspecified amount of oil to Iran.

Main beneficiaries of the huge influx of oil are those who are connected with foreign business, especially those in government or formerly state owned enterprises. The business process in Azerbaijan can be considered as rampant bribe-taking and petty charges.

By the end of the 19th century, Baku's fame as the "Black Gold Capital" spread throughout of the world. Skilled workers and specialists flocked to Baku to work in jobs related to oil. By 1900 Baku had more than 3,000 oil wells of which 2,000 of them were producing oil at industrial levels (www.azer.com). Oil economy has also important impact for to develop infrastructure, which many service industries will be involved. This means houses, roads, railroads, hotels, telecommunications, warehouses, have to be built. A handful of companies cannot do the job alone; hundreds will be needed to relate to the petrochemical, chemical, machinery producing factories, etc. Contracts will be selected on the basis of competitive bid from companies from all over the world.

Most important pipeline is The Baku–Tbilisi–Ceyhan pipeline. It is a 1,768 kilometres (1,099 mi) long crude oil pipeline from the Azeri-Chirag-Guneshli oil field in the Caspian Sea to the Mediterranean Sea. It connects Baku, the capital of Azerbaijan; Tbilisi, the capital of Georgia; and Ceyhan, a port on the south-eastern Mediterranean coast of Turkey, hence its name. It is the second longest oil pipeline in the former Soviet Union after the Druzhba pipeline. The first oil that was pumped from the Baku end of the pipeline on 10 May 2005 reached Ceyhan on 28 May 2006 (wikipedia, 2010). The Baku-Tbilisi-Ceyhan Pipeline Company (BTC Co.) was established in London on 1 August 2002. Construction began in April 2003 and was completed in 2005. The Azerbaijan section was constructed by Consolidated Contractors International of Greece, and Georgia's section was constructed by a joint venture of France's Spie Capag and US Petrofac Petrofac International. The Turkish section was constructed by BOTAŞ. Bechtel was the main contractor for engineering, procurement and construction (www.gasandoil.com , 20010).

The Baku-Tbilisi-Ceyhan pipeline (sometimes abbreviated as BTC pipeline) transports crude petroleum 1,776 km from the Azeri-Chirag-Guneshli oil field in the Caspian Sea to the Mediterranean Sea (www.azerb.com, 2010). The construction of the BTC pipeline was one of the biggest engineering projects of the decade, and it is also one of the biggest to

have occurred anywhere in western Asia since the fall of the Soviet Union. It was constructed from 150,000 individual joints of line pipe, each measuring 12 m (39 ft) in length.

The BTC pipeline is expected to make a major contribution to the development of world energy supply with its annual 50 million ton capacity. Thanks to this project, which was created with a sustainable environmental and economic system, Turkey is also expected to earn about $300 million annually. Azerbaijan with the BTC gained a direct connection to international energy markets. The South Caucasus gas pipeline, using same route as the BTC, came operational at the end of 2006.

Azerbaijan has set up a State oil fund (State Oil Fund of the Republic of Azerbaijan, or SOFAZ), expressly mandated with using natural-resource revenue to benefit future generations, to take support of key international lenders and for to improve transparency and accountability. SOFAZ is audited by Deloitte and Touche. Additionally, Azerbaijan became the first oil producing country in the world.

In conclusion oil had impact every aspects of life in Azerbaijan and today still it is the main important source for Azerbaijan's economy. However it causes a black market and fraud in Azerbaijan leader will never give up on oil.

8. Conclusion

Azerbaijan's pro-democracy forces have tried, since the late Soviet times, to build a democratic civil society on fragmentary historical foundations (Dawisha & Parrott, 1997). Because of the continued Russians pressures, on-going war and corruption in and out of the government forces continued to militating against democracy and domestic peace. The movement toward democracy has been stopped cold by the return of Heydar Aliyev and his authoritarian rule. Also his son Ilham Aliyev has been continuing on his father's way. Both of them are against any opposite parties because they see it as disloyalty. As long as the leaders of Azerbaijan do not consider democracy Azeri people could not see real democracy in their country.

Table 1. Several Indices of Civil Democracy (Source: CIA World Factbook)

	2000	2001	2003	2005	2007	2009
Electoral Process	5.5	5.75	5.75	6.25	6.50	6.75
Civil Society	4.75	4.50	4.25	4.75	5.25	5.50
Independent Media	5.50	5.75	5.50	6.00	6.25	6.75
Governance	6.25	6.25	5.75			
National Democratic Governance				6.00	6.00	6.25
Local Democratic Governance				6.00	6.00	6.25
Judicial Framework and Independence	5.50	5.25	5.25	5.75	5.75	5.75
Corruption	6.00	6.25	6.25	6.25	6.25	6.50
Democracy Score	5.58	5.63	5.46	5.86	6	6.25

This table shows us that because of the firm authoritarian rule in Azerbaijan we cannot see active civil society or media. Corruption has been increasing and its democracy score is almost 7 which mean it is too bad. Electoral process is also not democratic. Azerbaijan cannot be assumed as transiting to democracy it is actually going far from democracy.

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State-Building and Democratization in Uzbekistan

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Abstract

Uzbekistan is at the center of Asia and Asia politics. It performed the most successful transition not to democracy but to authoritarian regime after collapse of Soviet Union. According to Freedom House, Uzbekistan is one of least free in world under Islam Kerimov rule who is head of state and serve as President of Uzbekistan until independence to nowadays and it seems to go on like this without a surprise death of Islam Kerimov because possibility unlikely to be challenged to his position. Stated -planned economy is carried out and as GDP values it perform well. However citizens suffer from economic conditions. Clans and regional leaders still govern and administer on social level despite of centralization attempts by Islam Kerimov. Soviet Legacies and historical characteristic features are important for political and social culture of Uzbekistan. Nationhood tried to be composed with attached to Tamerlane period and around Turkic and Islamic values despite of Islam Kerimov's explicit hostility against Islamic Fundamentalism

1. Introduction

Uzbekistan is at the center of Asia and Asia politics. It performed the most successful transition not to democracy but to authoritarian regime after collapse of Soviet Union. According to Freedom House, Uzbekistan is one of least free in world under Islam Kerimov rule who is head of state and serve as President of Uzbekistan until independence to nowadays and it seems to go on like this without a surprise death of Islam Kerimov because possibility unlikely to be challenged to his position. Stated -planned economy is carried out and as GDP values it perform well. However citizens suffer from economic conditions. Clans and regional leaders still govern and administer on social level despite of centralization attempts by Islam Kerimov. Soviet Legacies and historical characteristic

features are important for political and social culture of Uzbekistan. Nationhood tried to be composed with attached to Tamerlane period and around Turkic and Islamic values despite of Islam Kerimov's explicit hostility against Islamic Fundamentalism.

In this paper firstly it will be focused on history of Uzbekistan in order to understand the legacies and cultural, social, political life in Uzbekistan, later on it continues by dealing with politically and economically transition. I also mention about the clans which is basic special of central Asia. I will also briefly discuss international relations of Uzbekistan.

1.1. History of Uzbekistan

The early history of Uzbekistan is the key signatory of social and cultural character of Uzbekistan people. The events would prove that multi-ethnicity and multi-culturality became basic specialty of Uzbekistan -the silk road-.Mawarannahr was one of the most advanced caliphate regions playing a significant role in social and cultural life. The Great Silk Road linked the West with the Orient and people from southern and northern countries passed through this land. The Mawarannahr towns of Bukhara, Samarkand and Kunya-Urgench were the crossroads of caravan routes from India, China, Egypt, Byzantium, Slavic countries and Arabia

It will be right to start from the beginning that means ancient times. The history of Uzbekistan, its culture and statehood, foreign economic and social ties of the territory is more than 2.5 millennia. Uzbekistan's freedom loving population fought for its independence against all foreign invaders during centuries. Situated on the crossroads of the Great Silk Road, the region played an important role in the dialogue of different civilizations. Its flourishing in the ancient times, then during the reign of the Samanids and Timurids is connected with the involvement of the region in the international economic interrelations. The first people known to have occupied Central Asia were Iranian nomads who arrived from the northern grasslands of what is now Uzbekistan sometime in the first millennium BC. These nomads, who spoke Iranian dialects, settled in Central Asia and began to build an extensive irrigation system along the rivers of the region. At this time, cities such as Bukhoro (Bukhara) and Samarqand (Samarkand) began to appear as centers

of government and culture. By then by fifth century BC, the Bactria, Soghdian and Tokharian states dominated the region. As China began to develop its silk trade with the West, Iranian cities took advantage of this commerce by becoming centers of trade As far back as in the pre-Islamic period, Zoroastrism -- the world spread religious system was born on the territory of the present day Uzbekistan (in Khorezm) and became common property of all mankind. Zoroastrianism is a religion and philosophy based on the teachings of Prophet Zoroaster (aka Zarathustra, in Avestan). The term Zoroastrianism is, in general usage, essentially synonymous with Mazdaism, i.e. the worship of Ahura Mazda exalted by Zoroaster as the supreme divine authority. Along with Hinduism, Zoroastrianism is considered to be among the oldest religions in the world. There was formed the highest technological culture of those times: town planning, irrigation systems, armory, silk-weaving, cultivation of grain, cotton, grapes and fruits. In those times local technologies and master-craftsmen (Ustos) were highly valued and appreciated. The synthetic character is rather typical for this particular civilization: Combination of achievements gained by the Sogdians, peoples of Khorezm, Turks, India, China, Iran, Middle East and by Hellenism.

1.1.1. Islamic Period

Bukhoro and Samarqand became extremely wealthy points of transit on what became known as the Silk Road between China and Europe. The campaigns of Alexander the Great, trade along the Silk Road increased. In the seventh century A.D., the Soghdian Iranians, who profited most visibly from this trade, saw their province of Mawarannahr overwhelmed by Arabs, who spread Islam throughout the region. Under the Arab Abbasid Caliphate, the eighth and ninth centuries were a golden age of learning and culture in Mawarannahr. After the Arab campaigns of the 7th and 8th centuries, Islam replaced Buddhism as the dominant religion, and by the 10th century the area had become an important center in the Muslim world. The towns of Bukhara, Samarkand, Merv, Urgench and Khiva became widely popular in Muslim countries.

The struggle for independence and freedom from oppression by the caliphate of the Central Asian region increased during this time and by the end of 9th century the first Samanid

government with Bukhara as the capital was established. This government lasted until the end of the 10th century. During the 10th-12th century period different Karakhanids, Gaznavids, Seldjukids and Khoresmshakhs independent states appeared in Mawarannahr and Kho-rasan. In spite of continual wars to expand spheres of influence, this period appeared to be extremely important for the cultural and scientific activity of the region. The establishment of politically independent and autonomous states gave a good start, opening up great opportunities for regional economic and cultural growth. This time in history is known as the Oriental Renaissance and is noted for the unprecedented rise of ethical regulations.

As Turks began entering the region from the north, they established new states. After a succession of states dominated the region, in the twelfth century Mawarannahr was united in a single state with Iran and the region of Khorazm, south of the Aral Sea.

1.1.2. Mongolian Invasions

In the early thirteenth century, that state then was invaded by Mongols led by Genghis Khan, under whose successors Turkish replaced Iranian as the dominant culture of the region. It was the time for Mawarannahr culture and science to acquire its worldwide fame. However, this rapid growth was rudely halted at the beginning of the 13th century. The Mongols invasion of the country by Genghis Khan completely destroyed all the cities, irrigation infrastructure and sources of culture over a 2-3 period.

1.1.3. Tamerlane Period

The struggle for independence to get rid of foreign conquerors occurred during the second half of the 14th century. Under Timur (Tamerlane), (ruled 1370–1405), Mawarannahr began its last cultural flowering, centered in Samarqand. After Timur the state began to split, and by 1510 Uzbek tribes had conquered all of Central Asia. One of the decisive elements of the struggle was the tireless activity of Amir Timur. Step by step he cleared the area of Mawarannahr and Khorasan from Mongol rulers and at the end of 14th century and

a powerful state covering a large territory was established. Timur mainly stressed the strengthening of political power and economic and cultural growth. His main principles of state management were described in the document known as "The Code of Timur". In the sixteenth century, the Uzbeks established two strong rival khanates, Bukhoro and Khorazm. In this period, the Silk Road cities began to decline as ocean trade flourished. The khanates were isolated by wars with Iran and weakened by attacks from northern nomads.

1.1.4. Russian Rule

Three independent khanates, centered in Bukhara, Khiva, and Kokand, dominated Turkestan between the 16th and the 19th century. But by the second half of the 19th century, Russian forces had subjugated the khanates. Toshkent became the administrative center of Turkestan, and a colonial relationship was established. By 1876 Russia had incorporated all three khanates (hence all of present-day Uzbekistan) into its empire, granting the khanates limited autonomy. In the second half of the nineteenth century, the Russian population of Uzbekistan grew and some industrialization occurred. Cotton began to supplant other crops. Uzbek Revolts and National Consciousness

1.1.5. Pre-Soviet Era

At the end of the 19th century Djadidizm appeared based in the enlightenment movement and began to put forward new education and enlightenment, social and cultural policies. Step by step the activities and work of well-known djadids like Bekhbudi, Firtrat, Abdulla Avloni, Munnavhar Kari, Khamza and others spread widely among the people. Magazines and newspapers, books and textbooks began to appear stimulating interest in and growth of the national historical and cultural heritage. This ensured significant growth of national consciousness, political and cultural maturity and a striving for an independent way of development. Dissatisfaction with Russian rule manifested itself in anti-czarist revolts, djadists sought to improve the life of the local people through secular education. In the years leading up to the Bolshevik Revolution, the economic and political situation

drastically deteriorated, and in the summer of 1916, major disturbances shook the region. Upon seizing power, the new Bolshevik leaders promised an end to Russia's colonial treatment of Turkestan; however, they demonstrated no willingness to allow meaningful political participation by the native population. Consequently, in November 1917, indigenous leaders convened an extraordinary congress in the city of Kokand, at which they proclaimed the autonomy of southern Central Asia. But in February 1918, Bolshevik troops sent from Tashkent brutally crushed the fledgling Kokand government. Over the next few years a guerrilla opposition movement of basmachi fighters struggled against the Bolsheviks but was ultimately defeated. Meanwhile, the traditional rulers of Bukhara and Khiva were removed, and new states under strong Bolshevik influence were established there. In 1924 Uzbekistan was created as part of a "national delimitation" that re-divided Turkestan, Bukhara, and Khiva into new national republics. This effectively blocked the Central Asian and Tatar nationalists, who sought to create a state uniting Turks and other Muslim peoples of the former Russian empire, Bukhara, and Khiva. Consequently, the common histories, languages, traditions, and populations of the area were parceled out to individual local nationalities.

1.1.6. Bolshevik Era

Although the Bolsheviks introduced some economic and social reforms in the early 1920s, the pace of change rapidly accelerated with the launching of the First Five-Year Plan (FYP) in 1928. By 1932 about three-fourths of the republic's farm households had been gathered into collective farms.

Cotton farming was greatly expanded at the expense of other crops, particularly food. During the First FYP the Bolsheviks inaugurated massive campaigns to combat Islam, "liberate" women, and raise literacy. The literacy campaign coincided with a shift of the Uzbek language from the Arabic to the Latin alphabet.

In their first decade in power the Bolsheviks were obliged to govern through an alliance with indigenous nationalist forces, many of them jadids or influenced by them. Russians and other European nationalities also occupied important posts. By the end of the 1920s,

however, as part of korenizatsiia (nativization), Moscow sought to replace European cadres with Central Asians. This was especially difficult, since by the late 1920s the Bolsheviks had become less tolerant of their better-educated allies, who possessed pre-revolution education. Despite the opposition of most Europeans living in Uzbekistan, during korenizatsiia many poorly educated natives were promoted into positions of ostensible authority. The financial and social costs of this policy were extremely high, and after 1934 korenizatsiia was quietly forgotten.

The purges of the mid-1930s decimated the Communist party and state apparatus. During these purges virtually all of the republic's leaders were removed on trumped-up charges, including allegations of nationalism and efforts to secede from the USSR. Many of Uzbekistan's leaders were executed along with a large proportion of the cultural intelligentsia.

Beginning in the middle of the 1930s, cultural and language policies stressed Russification. Traditional art forms, dress, and customs were discouraged, and many Uzbek words of Arabic, Persian, and Turkic origin were replaced by Russian ones. In 1940 the Uzbek writing system shifted from the Latin alphabet to the Cyrillic.

The generation of republican leaders who rose during the purges was entirely dependent on Moscow. Although their authority within the republic was very high, in fact all major policy decisions were made in Moscow.

World War II had a profound effect on the republic by bringing women and children into the work force to replace the men who had left to fight the war. The war increased industrialization within the republic, which also experienced a large influx of refugees from the European part of the Soviet Union. For example, around 160,000 Meskhetian Turks deported from Georgia to Uzbekistan by Joseph Stalin.

Soviet leader Mikhail Gorbachev's policy of glasnost, or openness, these policies caused much important part of Uzbek character due to the glasnost provide Uzbeks Islamic consciousness spread.

Next part of this research is the Russian rule period of Uzbekistan and what important is for their characteristic feature and for today's politics. As conclusion, Russification played a significant role and the resistance of Uzbeks against this policy. Rule from Moscow and its centralization policies which were not so effective because regional leaders are still important, became the basic character of Soviet rule. Communism served as state ideology and was tried to make Uzbeks internalized in early Soviet rule in 1925-1950.

1.1.7. Independence

Independence period includes basically events which carry significance after the independence of Uzbekistan by following chronological order among 1989 and today without detailing them because I will deal with later and together with another title.

Islam Karimov becomes leader of Uzbek Communist Party before the declaration in 1989. Violent attacks take place against Meskhetian Turks and other minorities in the Fergana Valley. Despite of the lacking of common definition for nationhood, ethnic minorities, regional leader under Soviet polices "divide and conquer" which was very useful, came the core of newly born Uzbekistan political life. The first signal is that Nationalist movement Birlik founded in 1989. Communist Party of Uzbekistan declares economic and political sovereignty. Islam Karimov becomes president in 1990 and state-building process started but we have to take into account many Soviet legacies in newly Uzbekistan. Islam Kerimov would create its own legacies in early independence history Karimov initially supports the attempted anti-Gorbachev coup by conservatives in Moscow. Uzbekistan declares itself independent and, following the collapse of the USSR, joins the Commonwealth of Independent States (CIS) in 1991. Karimov returned as president in direct elections in which few opposition groups are allowed to field candidates.

Karimov adopted the managed democracy and so harsh polices toward the opposition groups or parties. President Karimov banned the Birlik (Unity) and Erk (Freedom) parties. Members of the opposition are arrested in large numbers for alleged anti-state activities. Activists from the outlawed opposition party Erk are jailed for allegedly conspiring to oust

the government. Ruling People's Democratic Party - formerly the Communist Party of Uzbekistan - wins general election. In 1995 parliamentary elections, Ruling People's Democratic Party was of course Islam Kerimov or presidential apparatus. It resulted as referendum extends Karimov's term of office for another five years. Islam Kerimov continued to strengthen its own authority. Karimov re-elected president in election deemed by Western observers to be neither free nor fair in 2000 presidential election he won Unsurprisingly his own party of the Self-Sacrifice National Democratic Party, who gained almost 92% of the vote his only challenger was Abdulhafiz Jalolov gained 4.1%. There is no powerful opposition due to ban campaign of Islam Kerimov and constitutional obstacles which 1992 Constitution stipulates that parties have to be approved by president and government. However there is another important reason for Islam Kerimov intolerance towards the opposition that is necessary for holding fair election and democracy which cannot mention in Islam Kerimov's Uzbekistan, another events is that Bombs in Tashkent kill more than a dozen people in 1999 by undertaken by Islamic Movement of Uzbekistan IMU that purposes to establish Islamic administration in Uzbekistan and overthrowing Islam Kerimov. President blames "fanatics" from the Islamic Movement of Uzbekistan, IMU declares "jihad" and demands the resignation of the Uzbek leadership. Operating from mountain hideouts, IMU fighters launch first in several-year series of summer skirmishes with government forces. After 2000 presidential election, US-based Human Rights Watch accuses Uzbekistan of widespread use of torture during and before the elections. In 2002 President Karimov won in attaining for extending the presidential term from five to seven years in a referendum. I want to give an example for Kerimov's authoritarian rule, December 2003 President Karimov sacks long-standing Prime Minister Otkir Sultanov, citing country's poorest-ever cotton harvest. Shavkat Mirziyayev replaces him It demonstrate us that it is enough that President will to replace. In 2004 parliamentary elections Opposition parties are barred from taking part. Kerimov justified his policies for the sake of stability.

1.1.8. Andijan Uprisings

In 13-14 May 2005 The uprising began with protests over the trial of 23 local businessmen accused of involvement in Islamic extremism and acts against the state there is no publicly

available evidence for the involvement of jihadists: the businessmen were part of a self-help collective of entrepreneurs that, although motivated by religion, has shown no inclination to violence Several guards were killed or wounded in the prison break. Some of the prisoners and leaders of the attack then seized the Andijon city government's offices and took hostages and uprising became widespread in Fergana valley and Andijon boiled with protests. The reason of spreading protests counted as that Uzbekistan's failing economy, shuttle trading across borders is sometimes the only way people have of making a living. Worsening corruption and bureaucracy have prompted rising anger against the government, as have shortages of gas and electricity throughout a very cold winter Uzbeks face an increasingly repressive economic and political environment.

Uzbekistan Government and president depressed the uprising with very merciless acts and harsh policies .Uzbekistan's military opened fire on a mass of people who were protesting against poor living conditions and corrupt government. Estimated casualties range from 187 to 5,000 Eyewitnesses report deaths of hundreds of protesters. Government puts overall toll at more than 180. The government of Uzbekistan first blamed the murders on terrorists, but after the requests for independent investigations by Western countries, the government acknowledged as its fault rather than taking responsibility or implying that was happened unintendedly. The number of killed people is disputed, as no independent investigations were allowed. Supreme Court convicts 15 men of having organized. Andijan unrest and jails them for 14-20 years. In 2006 March Sanjar Umarov, head of the Sunshine Uzbekistan opposition movement, is jailed for 11 years later reduced to eight - for economic crimes. The group had criticized the Andijan riots and had urged economic reform.

There is no revolutionary outcome unlike Ukraine, Georgia or Kyrgyzstan because Islam Kerimov follow harsh policies to depress by bearing central power and cruelty turned to normal during suppressing the protest moreover prevent to spread the protest to other regions it remained limited with eastern regions. For this outcome can be understood with clan structure of Uzbekistan. There is another result for Andijan riots, central government decided to take back the allowance for US to use their bases. In the next part of essay I will mention the key player in Uzbekistan; these are clans and Islam Kerimov.

2. Islam Abduganiyevich Karimov

Islam Abduganievich Karimov was born on January 30 1938 in Samarkand into a family of civil servants. He is Uzbek by nationality and has a higher degree. He finished the Central Asian Polytechnic and the Tashkent Institute of national economy, receiving degrees as an engineer mechanic and economist. He began to work in 1960 at Tashselmash. From 1961 to 1966 he worked as an engineer, at the Chkalov Tashkent aviation production complex. In 1966 he started work at the State planning office of the UzSSR where he worked as chief specialist and later as first deputy chairman of the State planning office. In 1983 I. Karimov was appointed Minister of finance of the UzSSR, in 1986 –deputy chairman of the Council of Ministers of the UzSSR and chairman of the State planning office. In 1986-89 he was first secretary of the Kashkadarya provincial party committee. From June 1989 first secretary of the Central committee of the Communist Party of Uzbekistan Islam Karimov has dominated the leadership since 1989 when he rose to be Communist Party leader in the Soviet Uzbekistan. The following year he became Uzbek president and continued in the post after independence. A referendum held in 1995 extended his term until 2000 when he won the presidential elections unopposed. A further referendum in 2002 extended the presidential term from five to seven years, but the expiry of his term in January 2007 went largely unnoticed. He gained another term following elections in December 2007 Karimov follow a ruthlessly authoritarian approach to all forms of opposition. The few Western observers who monitored parliamentary elections in 2004 condemned them as having failed to meet international standards and pointed out that all the candidates supported the president. Mr. Karimov has been accused of using the perceived threat of Islamic militancy to justify his style of leadership.

3. Clans

I am going to analyze the work of Clans, Pacts, and Politics in Central Asia, by Kathleen Collins. This work deals with clans as key political actor and their importance for transition to democracy and dominance on post- political life in Kyrgyzstan, Kazakhstan, Uzbekistan, Turkmenistan, and Tajikistan (included Afghanistan however is not post soviet

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country).These countries followed three distinct trajectories throughout the early 1990s.Kyrgyzstan experienced democratization. Kazakhstan, Uzbekistan, and Turkmenistan saw a renewal of authoritarianism. Tajikistan slid into failed statehood and a bloody civil war. The Kyrgyz case at least seemed to suggest that there was hope both there and elsewhere in the region for elite-driven, "pacted" shifts toward democracy (Collins:138). In these outcomes, clans played a core role as determinant factor. Collins put in order the characters of the central Asian post-soviet republics a weak sense of national identity; an Asian-cum-Muslim cultural and religious climate; a 70-year history of oppressive Soviet rule; political institutions imposed by communism; ethno national divisions between Turkic, Persian, and Slavic groups (Collins:138) "Informal role that clans play in shaping events and driving formal political realities throughout the region" (Collins:141) and defines that whether regime would be democratic or authoritarian . However what are these clans, what is their definition, their features, I will deal with what Collins says about these questions. A clan is an informal social institution, level of informal behaviour Notional kinship based on blood or marriage forms the central bond among members. Clans are identity networks consisting of an extensive web of horizontal and vertical kin based relations. Clans have their roots in a culture of kin-based norms and trust that makes rational sense, Clans in fact serve as an alternative to formal market institutions and official bureaucracies.

Clans today range in size from 2,000 to 20,000 members (Collins:142). The most powerful clans in accordance with definition above in today's Uzbekistan places in four important region. One of them is Ferghana and another is Khorezm. They are economically poor; however politically play significant roles. The others two clans-based regions are Tashkent and Samarkand. They are economically more in favorable situation relative to other regions but not so much. The clan-based regions compete to get hold of power ministries in Uzbekistan through the way of election. One research shows that (the table in p.194 Institutional Change and Political Continuity in Post-Soviet Central Asia, edited by Pauline Jones Luong ,Cambridge University Press), the clan-based votes determine who will hold the state power in elections. That's why it is called as clans power ministries. Another indicator is that clans and regional leaders compete for state resources and social control through the way of local administrations and regional state offices. Clans in fact serve as

an alternative to formal market (Collins:142). Acting informally, competing clans will divide the central state's offices and resources among themselves that is called as clan hegemony (Collins:143). Clan hegemony leads to corruption and destabilization in Uzbekistan they tried to seize their power control of the executive apparatus the flow of capital and assets—to feed their various networks (Collins:146). Collins also describe the Islam Kerimov's policy toward s the clans "Karimov's efforts to knock these clans down a peg were an example of one of the strategies that Central Asian presidents have adopted in order to put a damper on the competition both between one clan and another and between clans and the state. Uzbekistan has undoubtedly been the most successful of the Central Asian republics in creating a unified state and regime" (Collins: 148). In addition to this, there are some other policies of Islam Kerimov toward these clans which is also a threat for the regime due to Islamic movements. Kerimov tries to set direct links with society by electing regional leaders and economy only controlled by centralized state apparatus. Privatization is being hold slowly post-soviet era in Uzbekistan because Kerimov does not want create economically powerful clans who tried to put in the hand of state resources like Krygyzistan undergone.

4. Political Transition In Uzbekistan

Political transition in Uzbekistan can be summarized as a rapid and deliberate process of centralizing and concentrating authority in the presidential apparatus, establishing strong presidential rule, reformulating the relations between center and regional administration strengthening direct links between center and local levels ,direct central control over media ,managed party system -excluding independently organized political opposition -i.e. Birlik was banned After the election to the presidency in December 1991, Islam Kerimov immediately began to concentrate political power in his own hands. He first orders a making constitution to his kinship an official who establish the constitution commission to draft constitution. The constitution was designed as Islam Kerimov's will and strengthening the presidency power.1992 The Constitution of the Republic of Uzbekistan provisions that According to constitution : The Power of president is able to appoint and dismiss the prime minister and his deputies, cabinet of ministers, heads of administer at all level and entire judicial branch ,can declare state of emergency and implement

extraordinary presidential power at will ,dissolve parliament State Control Committee were established in each oblasts and charged with monitoring activities and evaluating performance of regional administration in order to set direct links to presidential control .

Table 1. Several Freedom Indices of Uzbekistan (Soure: Freedom House, Score 1: free-Score 7: not free

• Uzbekistan (2006) NIT Ratings	1997	1998	1999	2001	2002	2003	2004	2005	2006
National Governance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.50	7.00
Electoral Process	6.25	6.50	6.50	6.75	6.75	6.75	6.75	6.75	6.75
Civil Society	6.50	6.50	6.50	6.50	6.75	6.50	6.50	6.50	7.00
Independent Media	6.50	6.50	6.50	6.75	6.75	6.75	6.75	6.75	7.00
Local Governance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.25	6.75
Judicial Framework and Independence	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.25	6.75
Corruption	N/A	N/A	6.00	6.00	6.00	6.00	6.00	6.00	6.50
Democracy Rating	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6.43	6.82

In order to understand political transition we must look at the Kerimov's authoritarian policies. The central government severely restricted the development of new political parties and social movements. By the end of 1992 independent parties and movements faced insurmountable obstacles to either reaching initial stages of organization or maintaining and expanding their existing popular support base for Kerimov 's Party NDPU which became increasingly associated with governmental authority I make the list of the oppositions parties and dissidents that banned or organizationally restricted They are Agrarian and Entrepreneurs' Party [Marat ZAHIDOV]; Birlik (Unity) Movement [Abdurahim POLAT, chairman]; Committee for the Protection of Human Rights [Marat

Zahidov]; Erk (Freedom) Democratic Party [Muhammad Solih, chairman] (was banned 9 December 1992)

In order to reveal better cognition better for managed democracy. I searched the president elections: Presidential elections were held in Uzbekistan on 9 January 2000. Unsurprisingly they were won by Islam Karimov of the Self-Sacrifice National Democratic Party, who gained almost 92% of the vote. His only challenger was Abdulhafiz Jalolov gained 4.1%

The presidential election 2007: Karimov winning with 88.1% of the vote, on a turnout rate that was placed at 90.6%. Rustamov was placed second with 3.17%, followed by Toshmuhamedova with 2.94% and Saidov with 2.85%. Now I demonstrate the governmental structure of Uzbekistan under title of Political Transition.

4.1. Oliy Majlis – Parliament

The supreme state representative body shall be the Oliy Majlis of the Republic of Uzbekistan that exercises legislative power. The Oliy Majlis of the Republic of Uzbekistan shall consist of two chambers .one of them is the Legislative Chamber (the lower chamber) and the other is the Senate (the upper chamber). The term of powers of the Legislative chamber and the Senate of the Oliy Majlis of the Republic of Uzbekistan is five years.

The Legislative Chamber is the lower chamber of the Oliy Majlis of the Republic of Uzbekistan. The Legislative Chamber of the Oliy Majlis of the Republic of Uzbekistan shall consist of one hundred twenty deputies elected by territorial constituencies on a multiparty basis. Members of the Senate of the Oliy Majlis of the Republic of Uzbekistan shall be elected in equal quantity — in six persons — from the Republic of Karakalpakstan (Kerimov's region) regions and the city of Tashkent by secret ballot at relevant joint sessions of deputies of Zhokarghy Kenes of the Republic of Karakalpakstan, representative bodies of state authority of regions, districts, cities and towns from among these deputies. Sixteen members of the Senate of the Oliy Majlis of the Republic of Uzbekistan shall be appointed by the President of the Republic of Uzbekistan from among the most

authoritative citizens with large practical experience and special merits in the sphere of science, art, literature, manufacture and other spheres of state and public activity.

In legislative Assembly parties which is pro-Kerimov are Adolat (Justice) Social Democratic Party [Dilorom TOSHMUHAMEDOVA]; Democratic National Rebirth Party (Milliy Tiklanish) Fidokorlar National Democratic Party (Self-Sacrificers) [Ahtam TURSUNOV]; Liberal Democratic Party of Uzbekistan or LDPU [Adham SHADMANOV; People's Democratic Party or NDP (formerly Communist Party) Asliddin RUSTAMOV.

Government It consist of Cabinet of Ministers - The Government of the Republic of Uzbekistan is the executive power body of the Republic of Uzbekistan, ensuring guidance over effective functioning of the economy, social and cultural development, execution of the laws, and other decisions of Oliy Majlis, as well as decrees and resolutions issued by the President of the Republic of Uzbekistan.

The Cabinet of Ministers heads the system of bodies of state management and established bodies for economic management, and ensures their coordinated activity. The Cabinet of Ministers is competent to consider all issues concerning state and economic administration in the Republic of Uzbekistan, included in its competence according to the legislation. The Cabinet of Ministers has a right of legislative initiative.

5. Media

There is no independence media in Uzbekistan for necessary for democracy, accountability.

The state maintains tight control of the media. Despite a constitutional ban on censorship and guarantees of press freedom, media rights body Reporters Without Borders said in 2007 that "arrests, internment and blocked websites" were routine for journalists.

In the aftermath of deadly unrest in the eastern city of Andijan in 2005, reporters were expelled from the area and foreign TV news broadcasts were blocked. The BBC's coverage of the uprising led to the closure of the corporation's bureau in Tashkent some months later. Prepublication censorship of the press by the state was abolished in 2002, but self-censorship is widespread. A 2007 law holds media bodies responsible for the objectivity of their output. Private TV and radio stations operate alongside state-run broadcasters. Foreign channels are carried via cable TV, which is widely available. There is a indicator to understand government controlled media that The Cabinet of Ministers is the founder of the newspaper "Pravda Vostoka", and also cofounder of the newspapers "Narodnoe Slovo" and "Khalq Suzi".

I will give the list of press from BBC News in Uzbekistan ;Khalq Sozi - state-run daily; Narodnoye Slovo - state-run, Russian-language daily; Pravda Vostoka - state-owned, Russianlanguage daily; Ozbekistan Ozovi - published by ruling party; Hurriyat - published by government agency; Fidokor - organ of pro-government party; Mohiyat – weekly.

6. International Relations of Uzbekistan

In this part I focus on International relations of Uzbekistan and Kerimov's policies Uzbekistan with Islam Kerimov strove to play a central role in their region by setting allies and friendship relations. Uzbekistan signed an economic integration treaty with Russia, and an economic, military and social cooperation treaty with Kazakhstan and Kyrgyzstan.

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Uzbekistan, Kazakhstan and Kyrgyzstan agree to create a single economic market in 1996. Uzbekistan, Later on China, Russia, Kazakhstan, Kyrgyzstan and Tajikistan launch Shanghai Cooperation Organization (SCO), formed to overcome ethnic and religious militancy and to promote inter-trade, investment in 2001 .In September 2002 Uzbekistan and Kazakhstan settle a long-standing border dispute As a result of Islamic Movement of Uzbekistan 's existence inside and Islam Kerimov declaration of war against fundamental Islam in addition to enthusiasm of playing central role in 200 1 October Uzbekistan allowed US to use its air bases for action in Afghanistan. In 2002 March President Karimov visits US. Strategic partnership agreement signed and Uzbekistan 's balance on between Russia and US seemed to shift in favor of US however with Andijan Uprisings in 2005 August , Upper house of parliament votes to evict US forces from air base at Khanabad used for the campaign in Afghanistan. However Uzbekistan again allowed US limited use of its southern Termez air base for operations in Afghanistan, partially reversing its decision to expel US forces from the Khanabad base in 2005. Lastly as international consequence Uzbekistan does not want to any dominant rival in Central Asia. It criticizes Russian plans to set up a base in neighboring Kyrgyzstan, saying it could destabilize the region.

6.1. Focusing on USA- Uzbekistan Relations

Islamic threat provide closer relation between USA and Uzbekistan .That 's why I first sequences the events .In 1999 Bombs in Tashkent kill more than a dozen people. President blames "fanatics" from the Islamic Movement of Uzbekistan (IMU). IMU declares "jihad" and demands the resignation of the Uzbek leadership. In September 9, 2001 Afghanistan invasion by NATO

The IMU first sought to overthrow the government of President Islam Karimov in Uzbekistan, later espoused greater ambitions for the creation of an Islamic caliphate (state) across Central Asia, and eventually joined forces with the Taliban in Afghanistan. With the events of September 11, 2001 Uzbekistan provide the military bases. However US continued to criticize Uzbekistan for violating human rights 2005 August with Andijan

uprising Upper house of parliament votes to evict US forces from air base at Khanabad used for the campaign in Afghanistan.

7. Economic Transition

Uzbekistan economy has been growing. Currently, annual GDP growth rate is 9%, GDP per capita (ppp) is $2,600. Sectoral composition of GDP is agriculture (25.8%), industry (31.4%) and services (42.8), labor Force is 15.37 million, unemployment rate (1%), and inflation rate is (14%). Uzbekistan is now the world's second-largest cotton exporter and fifth largest producer; it relies heavily on cotton production as the major source of export earnings and as industrial sector Uzbekistan exhibits a highly concentrated in cotton related industry. In spite of agriculture continues to play pivotal rule ,also other major export earners include gold, natural gas, and oil are significant In Uzbek GDP . Following independence in September 1991, the government sought to prop up its Soviet-style command economy with subsidies and tight controls on production and prices A sharp increase in the inequality of income distribution has hurt the lower ranks of society since independence The nature of economic transition can be described as an attempt to concentrate all economic control and activity in central government.

Potential investment by Russia and China in Uzbekistan's gas and oil industry, as well as increased cooperation with South Korea in the realm of civil aviation, may boost growth prospects Russian businesses have shown increased interest in Uzbekistan, especially in mining, telecom, and oil and gas. Uzbeks was not hurry to change the currency they remain in ruble 1993, prices strictly controlled unlike other post-soviet countries in order to provide stable and proper economic transition Karimov constantly declared that the central government would continue the sole control over privatization. Fund for State Property which was created to protect state property and state interest .Fund for State Property provide old state institution to transfer with state control and prevent oligarchs. Uzbekistan has adopted a "gradual" approach to transition and state-led development aimed at import substituting industrialization and energy and food self sufficiency.

Government intervention in agriculture cotton and wheat stayed same as Soviet term. Because cotton and wheat main exports and carry vital importance for Uzbekistan economy. This approach resulted in a less painful economic and social transition than experienced in most countries of the CIS and, in recent years, a strong macroeconomic performance. Uzbekistan made progress in increasing self-reliance in both energy and foodstuffs, and has been pursuing a policy of "localization", i.e. encouragement and protection of domestic production. Islam Kerimov wants to be economically independent. This is the main reason of these policies. The end-result of these policies was to severely limit regional leaders' authority in economic sphere Privatization is done so slowly, that's why regional leaders were unable to appropriate economic resources to the same degree that they were able to in Kyrgyzstan. In short, Uzbekistan tried to balance between market economy and command economy which has occupied more place.

In 2003, the government accepted Article VIII obligations under the IMF, providing for full currency convertibility. However, strict currency controls and tightening of borders have lessened the effects of convertibility and have also led to some shortages that have further stifled economic activity 2006, Uzbekistan took steps to rejoin the Collective Security Treaty Organization (CSTO) and the Eurasian Economic Community (EurASEC), which it subsequently left in 2008, both organizations dominated by Russia. Regional Integrations economically are so important for Post-Soviet era Uzbekistan Economy.

Economic position of women has been tried to be protected especially by the way of the constitution."The Labor Code of Uzbekistan (1995) does not permit discrimination on the grounds of age, sex, ethnic origin, language, social background, marital status, or number of children. Officially, employers cannot refuse to employ a woman on the grounds of pregnancy, marital status or number of children. The reasoning here was that there was a contradiction between measures designed to protect women and the requirement to ensure equal treatment of all workers. These amendments were also made in the knowledge that such legal provisions were proving to be an obstacle to the employment of women in the non-state sector.[1]

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[1] Uzbekistan in Transition,by E Reform, Chapter 1.

However in reality Uzbek women faces some difficulties and extra burdens. The rate of female unemployment is the sign of women's relative economic vulnerability. With the collapse of Soviets, women suffered from deterioration of economy. Less-paid, domestic responsibilities, being primary providers in house hold has been considered as direct and indirect cost of women. Also some women had to be given up their education due to official and unofficial costs of education. Conversely, in the second half of 90s, Uzbek Economy had the best performance among the Central Asia Republics. Social protection measure have helped to offset some of the pain of market economy reforms, Pensions and subsidies given fall far short of what is required is related to The government Gender Initiative.

8. Conclusion

Uzbekistan never make a transition to democracy, as I mentioned, it transits to authoritarian regime after Soviet rule. Centralization and Concentration of power at hands of president is key for political transition of Uzbekistan. Every political aspect including Parliament, media even opposition is under control of Presidency-Islam Kerimov. According to freedom house, Uzbekistan is under the category of the worst of worst, its rating relating to Political Rights:7, Civil Liberties:7, status: it is not free. Score 7 means the worst in freedom. Economically also never make a transition to liberal economy, free market. Economy is also a state-run area. State is sole power in the economic sphere. Clans defines the political compete but on state resources and political power to gain advantage relative to others. Corruption and destabilization are the main goal of Clans. Media is not free. Political freedom does not exist i.e. freedom of association, speech, thought, and pen. As a consequence Uzbekistan is unsuccessful on the transition of Liberal democracy, economy or social freedom.

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Economic, Political and Social Transitions of Kyrgyzstan

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Abstract
This study will try to analyze the triple transition of Kyrgyzstan after the collapse of Soviet Union. In order to analyse this case study, the historical background of Kyrgyzstan before the Soviet era will be examined firstly. Then the economic, social and political situation of Kyrgyzstan under the Soviet domination will be explored to understand the economic, political and social changes (triple transition) fully after the collapse of Soviet Union.

1. Introduction

The purpose of this study is to analyze the triple transition of Kyrgyzstan after the collapse of Soviet Union. In order to understand this transition fully, there is a need for understanding the situation of Kyrgyzstan before Soviet administration and the situation during Soviet rule. Therefore historical background will be explored. In this part the life of Kyrgyz people and how they set administrative systems, how they arranged their economic life and what kind of invasions they were exposed to will be handled.

As a second thing, Kyrgyzstan under Soviet Union domination will be focused. In this part, economic, political and social changes will be dwelled on. The effects of Soviet era over economic life of Kyrgyzstan about what it brought new and what brought as a problem in the economic life of Kyrgyzstan will be emphasized. Moreover, for social life, how "Sovietization policy" of Russia turned out to be a " Russification" policy over time will be highly given point. For political life of Kyrgyzstan, how Kyrgyz people used to live tribal life without any nationality conscious were forced to live under central governance.

As a last thing, after surveying the economic, political and social life of Kyrgyzstan before and during Soviet control, triple transition will be investigated after the collapse of USSR. To construct independent Kyrgyzstan, new economic, political and social state-building process will be analyzed.

2. Historical Background

Kyrgyzstan history backed up to sixth century A.D. They lived nomadic life and nomads rarely record the events and their history. Their narratives were talked by akyns (nomad bards) with komuz (musical instruments). In addition, they did not construct big cities, towns and castles. The reason behind of this is not to destroy the nature. Therefore, it is really hard to trace the history of the Kyrgyzstan. Although Kyrgyzstan's history is still problematic since, under the Soviet pressure, Kyrgyz people were forced to learn the history totally shaped by Soviet Russia. After the collapse of Soviet Union, Kyrgyzstan has rewritten their own history due to legitimize some clans and borders of the state established arbitrarily in 1924.[1]

Though there are still arguments on history of the Kyrgyzstan, almost all historians have decided on one thing that is pagan Kyrgyz originally lived in Siberia close to the Yenisei River. There has not been exact time about when their ancestor moved from Siberia through Altai to the Tian-Shan mountain range. Yet, it is thought that Kyrgyzs were already there in 10th-11th century since 'Manas', oral epic, has been showed as a justification for this claim.

Due to lack of consolidated life of Kyrgyzs, clans and tribes were constituted very important role in the history of Kyrgyzstan. Kyrgyz tribes and clans began to create their own languages and identities between 15th and 17th centuries. On the other hand, it was realised by foreign traders that Kyrgyzs clans and tribes were not ruled by single ruler and

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[1] Tchoroev, T 2009, 'Historiography of Post-Soviet Kyrgyzstan', Cambridge University Pres, vol. 34, no. 2, pp. 351-374.

they had all their own leader called Manaps. In addition, tribes were seen as threat for Soviet rulers and divided into small units called as clans.[2]

In the Kyrgyzs history Great Silk Road between China and the West was constituted gsignificant importance for Kyrgyzs lives. Owing to Turkic, Arab and Persian traders passing through silk road, Kyrgyzs religion converted from shamanism to Islam between 12th and 15th centries. The Kyrgyzs were united under numerous tribes who shared similar culture, common ancestors, same oral epics like 'Manas' and 'Semetey' and same language Kypchak dialect of the Turkic language.[3] The meaning of 'Kyrgyz' came from 'qyrq' and 'yz' which means 40 tribes. Those tribes were divided in two parts. One part called as 'Ong Kanat'(right wing) was consolidated in Northern Kyrgyzstan and the other part called as 'sol Kanat' was settled in southern Kyrgyzstan.

Kyrgyzstan borders were created by natural boundaries. Tian-shan and Pamiro-Alai mountains ranges from the east, borders between China and Kyrgyzstan, extend to west and southwest. On the other hand, there has not been a clear and well-defined border in the Ferghana and Jetisuu valleys. Those natural boundaries have given Kyrgyzstan great chance to protect itself from enemies. Furthermore, they provide distinct climate and unique economic basis.

In the late of 18th and the beginning of 19th centuries, Kyrgyzstan was exposed to Kokand Khanate invasions due to lack of natural mountain borders protection in the Ferghana valley. It was really hard for Kyrgyzs to resist those invasions because of geographical divisions. Although by the beginning of the 19th century Kyrgyz tribes could be distinguished from Kazakhs and Uigurs. They did not still have strong national identity, political unity or single culture. Kokand Khans settled great control over Kyrgyz tribes between 1762 and 1831. Kyrgyzs could not achieved to find any allies in the east. Therefore northern tribes sought allies in the north with Russia. Russia did not give any aid

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[2] Collins, K 2002, 'Clans, Pacts, and Politics in Central Asia', Journal of Democracy, vol. 13, no. 3, pp. 138-151

[3] Parrott, B 1997, ' Conflict, Cleavege and Change in Central Asia and the Caucasus', Cambridge university pres, Cambridge pp. 242-268

or attention to these region.Yet Russia was occupied by Napoleonic invasion in 1812 and later was engaged in military campains in Europe.[4]

Russia took its attention to central Asia by the mid of 19th century after the Great Britain invasion in North India and Afganistan. This was known as 'Great Game'. Moreover, both had conflicting interest over silk road. After the defeat of the Crimean War (1853-1856) Russia decided to consalidate its power on Turkistan through several ways and routes, Kyrgyzstan was one of them. Russia declared its protectorate over Kyrgyz tribes in Ysyk Kol Valley and Chatkal between 1855-1864. The more Russia moved on to east, the more Kokand Khorate interest clashed with Russia. Finally, Russia troops fought and defeat Kokand military power. Russian troops conquered Tashkent in 1865, Samarkad in 1868 ,Kokand and Osh in 1875 and reached agreements with Kyrgyzs tribes in Alai that was about admitting Russian protectorate. It was the beginning of Russian influence over Kyrgyzstan.

2.1. Economy

Traditional Kyrgyzstan economy based on feeding horses, sheeps, goats ,cattle in the Tian-Shan and Pamiru Alai mountains. Kyrgyzs also migrated seasonally. In the winter they climbed down to the lower part of the mountains and in summer times, they reached up to the mountains to benefit from weather changes, reach enough grass for their animals. Feeding animals provided them food, transportation facilitations and means for trade.

Trade was not well-developed. It took several months to reach traders came from China or different part of Turkistan. Yet with the Russian protectorate, trade within region changed dramatically. Capitalism arrived in Kyrgyzstan in 19th century. Due to political instability and social unrest, only small bazaars with limited traded goods were settled but after the capitalism arrival, economic activities changed totally. In 1888 Russia constructed first railways. With the incredible advancement in transportation, trade velocity and its volume increased. Steel, glassware, grain and different kinds of industry goods were introduced to

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[4] Tchoroev, T 2009, 'Historiography of Post-Soviet Kyrgyzstan', Cambridge University Pres, vol. 34, no. 2, pp. 351-374

Turkistan, so in Kyrgyzstan territories.[5] New technology was introduced in agriculture sector. It paved the way for better and productive cultivation. People started to grow up tobacco and cotton in Ferghana Valley. The economic transition changed traditional life from clan and tribal lives to settled lives. In addition family structure was also affected. With new economy, extended families got harm because family members went out for finding job.

2.2. Administrative System

Kyrgyzstan's territories were not ruled by strict administrative systems. Conflicts even under Kokard Khorate rule and relations among tribes were regulated by traditional law (adat). Tribal leaders were responsible for administrative duties as long as they admitted the Khan authority.

With Tsardom control over these territories, these administrative structures were totally destroyed. Kyrgyzstan was divided between different administrative units called lablast, uveza and volost under military administration of Russia. Russia brought out new administrative system in which native administratives came to head by elections rather than by inheritance or nobility. In addition to administrative changes, Russia introduced large settlement programs. Along with those programs, thousand of Slavic groups and ethnic Russians brought to Kyrgyzstan. Those new settlers were placed on the lands that were seized from Kyrgyzs by Russian authorities.

In the late 19th century with in the first wave of Russian settlers coming to Kyrgyzstan's territory, the Slavic population constituted approximately 10 percentage of population in the Ferghana, Syrdor and Samarkand. But with second wave, huge migration of Russian and other Slavic people to this region, this portion rose up to 15 percent of all population in 1914.With the newcomers, social unrest emerged. Local people charged newcomers for growing poverty, increasing economic inequality, loss of lands and social inequalities.[6]

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[5] Abazov, R 1999, 'Economic Migration in Post-Soviet Central Asia: The Case of Kyrgyzstan', Post-Communist Economies, vol. 11, no.2, pp. 338-352

[6] Tchoroev, T 2009, 'Historiography of Post-Soviet Kyrgyzstan', Cambridge University Pres, vol. 34, no. 2, pp. 351-374

The first severe reaction against Russian administration held in 1916 in Turkistan. There were 250.000 Turkistan's military service used for Russia war against Germany and Turkey, mobilized against Russian control because of hyper inflation in foods, war taxes, economic and social inequalities caused by WWI. Those rioters attacked Russian administratives, and properties and killing settlers. Upon this, Russia mobilized its arm forces under Cossack regime and fought back to rioters. They killed thousands of Kyrgyz families, burned their houses and expelled them from their land and homes. Therefore, many Kyrgyz families escaped to Chinese Kashgar by passing mountains by giving thousand of death because of severe weather conditions and starvations. This was one of the unforgettable , black epach of Kyrgyzs who lost almost 140.000 people due to Cossack led expeditions.

2.3. Social Life and Culture

Capitalism and Tsar Rule brought about some social and cultural changes to Kyrgyzstan. Literacy became very important for the needs of educated administrators. By the middle of 19th century, Medrese (that gave religion education) were established. In the late of 19th century, Russian empire established secular schools both for local people and Russian residents in Kyrgyzstan. With the attempt of Russian Empire, literacy among Kyrgyz males increased to 8.2 percent and among Kyrgyz females increased to 0.2 percent. Especially, ruling part of the elites changed their lifestyle completely. They started to live with new urban lifestyle. Moreover, the more people got knowledge and literacy, the more they rebelled and questioned colonial administration and rejecting Russian rule. Some of them wanted total elimination of Tsar control and to be ruled by Islam. Therefore, they joined Bolshevik movement, some of them desired to pursue Westernization. At the end, all those accumulated hatred against Tsar, Russian Empire came to an end with revolution in 1917, establishing Russian Republic.[7]

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[7] Parrott, B 1997, ' Conflict, Cleavege and Change in Central Asia and the Caucasus', Cambridge university pres, Cambridge pp. 242-268

3. Kyrgyzstan under the Soviet System

Kyrgyz people were not ready for 1917 revolution and they resisted newly coming Bolshevik rules. Kyrgyzstan tried to ally with Turkish general Enver Pahsa to unite under pan- Turkistan Republic that was an unsuccessful attempt. Afterwards, under Vladimir Lenin, Soviet government seized rich Russian settlers land given them under Tsar Rule in Russian Empire. Soviet government gave those lands back to Kyrgyz peasants. This action of Soviet government eliminates part of the resistance of Kyrgyz people against Russian Republics and even took the support of most of the Kyrgyz farmers. With the revolution, nationalistic movements rose up for established independent state of Kyrgyzstan. In order to extinguish these movements, Russian Federation quitted suppression from Tsar Era and gave Kyrgyz people to practice their own cultural and political activities.

Surprisingly on 14 October 1924, Soviet government gave autonomy to the Kara-Kyrgyz land as a part of Russian Federation. This was a real shock for Turkistan's history that was divided an ethnic consideration. The delimitation of Kyrgyzstan was made for drafting its territory. Territorial delimitation was made by diving Ferghono Valley between Kyrgyzstan, Tajikistan, Uzbekistan and Jetysuu (Semirechie) valley between Kyrgyzstan and Kazakhstan. This territorial delimitation was very important for Kyrgyz people to be identified themselves as Kyrgyzs. They identified themselves firstly as Muslims then Turks, then Turkistanis and then member of tribes and then as Kyrgyz. This territorial delimited Kyrgyzstan was established and known as Kyrgyzstan Autonomous Soviet Socialist Republic (KASSR) under the rule of Russian Federation.

The most important political compulsion of Soviet Russia over Kyrgyzstan's political life was the elimination of all political parties and allowed only communist party to exercise political activities. Especially, under Joseph Stalin's rule (1933-1938) elimination of pre-Soviet rulers, leaders of tribes and intelligentsia augmented. They were all sent to Gulak or were executed out of the Soviet Union. With Nikita Khrushchew in the late 1950s and Leonid Brezhnew (1966-1982) political and economic pressures came from Stalin era diminished in Kyrgyzstan and other unions as well. At the end of 1980 Kyrgyzstan and

other unions gave more voice to greater political rights and sovereignty over their internal and external issues by changing 1922 Soviet Union Treaty.

Mikhail Gorbochev (1985-1991) Soviet Union's last leader stressed the importance of giving more pluralization and democratization to overcome the problems and unrests emerging in all unions. In October 1990, the first competitive election was held on. Communist party leader, Absomat Masaliyev was defeated by democratic candidate Dr. Askar Akayev, the president of the Academy of Science. This was the end of 70 years of Communist party rule in Kyrgyzstan.

3.1. Soviet Modernization and Economic Changes

Moscow leaders believed that only state controlled, command economy could enhance the economic development and overcome the economic backwardness of the region. Kyrgyzstan had abudance of natural resources such as; gold, uranium. It also had the significant capacity the produce hydroelectric. On the other hand, its geographical constraints like mountains pushed it far from major markets. In order to use all its economic capacity, it needed investment.

First industrialization wave started in 1930s and Soviet Russia launched industrialization for heavy and agricultural machinery. In the second phase of industrialization, during and after World War II, industrial plants for military production were settled in Kyrgyzstan. Nevertheless, in the third wave of industrialization during 1960s and 1970s, Soviet Russian leaders decided to invest on natural resources such as hydroelectric power producing, mining. Kyrgyzstan's 38 percent of its Gross Domestic Product (GDP) belonged to Industrial sector. Agriculture sector constituted important portion of Kyrgyzstan economy. Moscow leaders established state-run collective farms(Kolkhozs) and with collectivization policy extended families in Kyrgyzstan called "ail" were forcefully taken to Kalkhazs to be worked.[8]

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[8] Abazov, R 1999, 'Economic Migration in Post-Soviet Central Asia: The Case of Kyrgyzstan', Post-Communist Economies, vol. 11, no.2, pp. 338-352

With the division of labor policy among Soviet Union members, Kyrgyzstan became food and raw material provider to Soviet Union especially by the end of 1980s. By 1991 Kyrgyzstan's 40% of GDP was consisted by agricultural sector. Due to increase in industrial development, Kyrgyzstan GDP doubled in every 10 years between the 1940s and 1970s.In contrast, after 1980s, its economy was based on agricultural sector and its natural resources began to be exploited.

With the failure of Gorbachev's policy toward bettering off economy called Perestroika, nationalist Kyrgyzs started to made arguments that they needed freedom to establish its own policies to rescue from economic stagnation that was captured together with the Soviet Union by the 1980s.

3.2. Demographic Social and Cultural Changes

The aim of Soviet Union was to create cultural, political and linguistic melting pot that targeted to construct "Soviet Russian Culture". To create high culture, Moscow leaders gave greater importance on education. Yet in spite of leaders' struggles in increasing literacy among Kyrgyz citizens, only 15 percent of people even working in factories, enterprises and important administrative position could read and write in 1927. Due to Russian Federation's aim over cultural unity among all states in Soviet Union, Moscow leaders generated policy about forcing ethically Russian and Slavic people to migrate different unions, Kyrgyzstan was one of them, for both filling literacy gap and to promote cultural and ethical unification in those regions. Therefore, Russian ethics in Kyrgyzstan was 116.000 in 1926 that was followed by an increase to 302.000 in 1939. In addition, Ukrainians number mounted up from 64.000 to 134.000 between 1926 to 1939.

Ethically Russian and other Slavic origin people were generally domiciled in urban areas and worked in administrative and high-qualified jobs. Between 1939 to 1959, Russian population in Kyrgyzstan rose up from 302.000 to 623.500. Furthermore, in the immigration policy, migrants who were dismissed , expelled from their lands, such as , Turks Crimean Tatars, Greek, Korean were also migrated to Kyrgyzstan. All these

migration policy of Soviet Union made ethically heterogeneous structure of Kyrgyzstan more heterogeneous and blended.

Between 1926 to 1959, ethic Kyrgyz population dropped from 66.7 percent which was followed by increase to 52.3 percent due to birth rate. Ukrainian population in Kyrgyzstan climbed up from 6.4 percent to 9.4 percent between 1926 to 1936 that was led to decrease to 2.5 percent in 1989. Uzbek population came after Russian and Ukrainian minorities as a third majority ethnic group in Kyrgyzstan. Uzbek population constituted 10-12 percent of the whole population in Kyrgyzstan. During Soviet area and actually still, most of the Kyrgyz native people lived and employed in rural areas. Nonetheless, high increase in population in rural areas made the pressure over young generations to leave the rural areas and to migrate to urban areas to search for job. Yet in the Slavic dominated cities, those young generation could not find job. This kind of exclusion, degeneration of economic and political structure led to raise tension, social unrest and hatred between diverse ethnic communities in Kyrgyzstan.[9]

One of the basic objectives of Soviet Union was to create "Soviet Kyrgyz Nation". To achieve this purpose and, to eliminate the Kyrgyz and Russian cultural differences, Soviet Russia used educational system by using Kyrgyz's' lack of written historical documents and records. Using this vulnerable part of Kyrgyzs and also their inadequacy in literacy, Soviet Russian rewrote Kyrgyz history compatible with Soviet Russian purposes and trained young Kyrgyzs according to those new literature. Furthermore, Soviet Russian abolished Arabic alphabet and then first established Latin alphabet and then Cyrillic alphabet to enable Kyrgyz's learn Russian language easily.[10] Especially in 1960s and 1970s, Moscow put those policies one step further from "Sovietization Policy" to "Russian Policy". All old Kyrgyz intelligentsia and old rulers were expelled to Siberia or excluded from their countries especially under Stalinist regime.

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[9] Abazov, R 1999, 'Economic Migration in Post-Soviet Central Asia: The Case of Kyrgyzstan', Post-Communist Economies, vol. 11, no.2, pp. 338-352

[10] Tchoroev, T 2009, 'Historiography of Post-Soviet Kyrgyzstan', Cambridge University Pres, vol. 34, no. 2, pp. 351-374

In spite of all those attempts for social, cultural, assimilation of Soviet Russia, Kyrgyz people achieved to pursue their traditional lives such as; its patriarchal society, tribal and kinship traditions and resisted innovations and social transformation. Kyrgyzs and even Russified intelligentisia questioned Soviet Union policies. They increased tension, as they realised failure of USSR in improving standards of living. They started to be against Russian assimilation policies and Kyrgyzs intelligentsia reminded Kyrgyzs their roots. The first resistence against Russification emerged in 1970. On the other hand, Kyrgyz people could only find opportunity to express their feelings about Soviet rules in the 1980s Gorbachev regime. They demanded that teaching in schools should turn to Kyrgyz language from Russian language and Kyrgyz language should become the official language of Kyrgyzstan Republic, television, radio, and other broadcasting. Those demands were given more voice in 1989 -1990 that leads first national democratic movement called Ashar. People took the law in their hands and seized capital and large cities to take the attention on their struggle.

4. Kyrgyzstan with the Disintegration of the Soviet Union

Separation of Kyrgyzstan from Soviet Union was very smooth and unproblematic. Jogarku Kenes (parliament) declared the independenceof Kyrgyzstan from Soviet Union on 31 August 1991. After the declaration of its independence, Kyrgyzstan had hardship in identifying its identity, economic policy, political relations especially with Russian Federation. There were two groups in the society that had claims about Soviet era damages and advancements came with Soviet era. Former talked about artificially divided Central Asian countries namely Kyrgyzstan, Kazakhstan, Tajikistan and Uzbekistan. These groups argued that while Soviet Russia was implementing border delimitation policy in the Turkistan, it ignored cultural, historical heritage intentionally and paved the way for border disputes between those four countries. Secondly, the most harmful policy that Russia imposed on Kyrgyzstan was Russification. Russia exiled most of the Kyrgyz to the Gulaks and brought Russians into Kyrgyzstan and settled them into big cities. Kyrgyz people were excluded from big cities. Thirdly, with the Russification policy, Kyrgyz intelligentsia became like Russians and they lost their roots. In contrast, other group asserted that with the help of Soviet Russian influence over 70 years, Kyrgyzstan developed itself in

education, technology, transportation, health, welfare system and standard of living. In addition, for this group, Kyrgyz identity and cultural construction was achieved during Soviet era. Soviet Russian changed all political and cultural elements of Kyrgyzstan by establishing a national anthem, a flag and state institutions. Soviet Russia contributed the creation of Kyrgyz identity by bringing the term Kyrgyzchylyk. People within Kyrgyzstan awared that they belong one society.

Despite all these debates about Soviet legacy, there is no doubt that industrialization, modernization, urbanization and technological development that were introduced in Europe was brought with Soviet era to Kyrgyzstan. Besides, after the collapse of Soviet Union, there was a country with strong institutions, industrialized economy, strong educational system. That was unlike what Western colonizers left in Asia or Africa. On the other hand, among the heritage of Soviet era, political, economic instability and ethnic conflicts are the main problem of Central Asia.[11]

4.1. Independent Kyrgyzstan

The initial things that Kyrgyzstan did after it gained independence were creating sovereign state institutions, establishing new constitutions, getting rid of one party system of the Soviet era. In addition, in order to prevent social unrest and civil war it tried to establish various parties that represented all parts of society. Before the collapse of the USSR, in October 1990 president election was held by Jogarku Kenesh. The member of Communist Party of Kyrgyz SSR (CPK), Absomat Mosaliyev was in the hope of winning the elections. Yet Dr. Askar Akayev who emphasized the pluralistic society, multiparty political system was elected as a president by the parliament. Askar Akayev was the first Kyrgyz president. In August 1991, when military-coup attempt was made by anti- Gorbachev side, the Communist Party of Kyrgyz SSR supporters provoked anti-democratic forces in the Kyrgyzstan and encountered democratic Askar Akayev and his followers. Because of this attempt, Kyrgyz government seized all property of CPK and declared its dependence from Soviet Union.

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[11] Tchoroev, T 2009, 'Historiography of Post-Soviet Kyrgyzstan', Cambridge University Pres, vol. 34, no. 2, pp. 351-374

After the establishment of independent Kyrgyzstan, a number of political parties and free mass media and broadcasting were introduced. On May 1993 Kyrgyzstan adopted its first constitution in which stated the separation of power between legislative, executive and judiciary. Therefore there was a check and balance between those institutions. Kyrgyz people gave full political participation without any restrictions like ethnic cultural, language basis of its citizens. Due to all these improvements, Kyrgyzstan was seen as "Island of Democracy". In order to get rid of one of the heritage of Soviet era, Jogorku Kenesh was dissolved and dismissed in October 1994. It was replaced by bicameral parliamentary system consisted of Myizam Chygaruu Jyiyny (Legislative Assembly) and El Okudar Jyiyny (Assembly of the People's Representatives).

Firstly, party election for parliament was held on 9 February 1995. 1021 candidates from 40 parties contested for 105 seats in the bicameral system. Among 40 parties, The Social-Democratic Party won the majority of the vote and had largest number of the seats in parliament. Among other parties , Republican party Erkin Kyrgyzs,Unity of Kygyzstan, Atameken, Asaba and Communist Party achieved to take seats in the parliment.

Same year Akayev called Central Electoral Commission (CEC) for early presidential election, enrolled Absamat Masaliyev and Medetkan Sherimkulov as a opposition candidate against Akayev. This was the first competitive popular presidential election. Akayev claimed that in order to increase the economic prosperity and political stability, new economic policies like privatization and structural adjustment decided by International Monetary Fund and World Bank should be implemented. In contrast, other representative Absamat Masaliyev and Medetkan Sherimkulav argued about more state control over economy and revision for privatization, lowering taxes, preserving social guaranties.

Presidential election was taken on 24 December 1995. Turnout rate 81.1 percent and Alayev took 71.6 percent of the votes. Sherimkulov received 1.7 percent of the votes and Masaliyev received 24.4 percent. Due to corruption, severe economic problem and social disparities, following elections after 1995 were passed tough for Kyrgyzstan. In order to measure the citizen's reactions and public support for government policies, 2000

parliamentary elections was the very good indicator. Nonetheless, in 2000 elections opposition parties were exposed to pressure and treats. According to Abazov (2004) "Kyrgyz authorities did not fulfill their commitment to organize fair parliamentary elections and the elections were neither democratic nor fully lawful". Moreover, because of political degeneration, turnout percentage was very low, at 57.8 percent of the voters attended elections in the first round and in the second round this rate rose to 61.8 percent. Communist party, El (people) party, the Ata-Meken (Fatherland) party and Kairen El (Never-Do well People's) part achieved to take seats in the parliament.[12]

Short after the parliamentary election, Myizom Chygaruu Jyiyny (Legislative Assembly) called for presidential elections in June 2000. Presidential candidates were exposed to Kyrgyz language examination. Among all candidates, only 5 names were officially registered for presidential elections. Those were Tursunbek Akunov, a human right activists; Melis Eshimkanov, a journalist; Omurbek Tekebayev, the chairman of the Ata Meken (fatherland) party; Tursunbay Bakir Uulu one of the leaders of the Erken (Free) Kyrgyz Party and Almazbek Atambayev, an industrialist.

Opposition candidates criticized Akayev's policy and gave point to corruption, severe results of privatization, increasing repetism and "shock therapy" led by IMF. President elections was held on 29 October 2000 and turnout was 77.3 percent. Whereas, election was not fair and many malpractices were done during elections. According to Freedom House, in 2002 Kyrgyzstan was ranked as a 22nd country out of 27 transitional countries of the common wealth of Independent States and Eastern Europe. Results of 2000 election was that Askar Akayev won in the first round 74.4 percent of votes and Omurbek Tekeboyev received 13.9 votes, Atornbayev received 6.0 percent, Eshimkanov took 1.1 percent , Bakir Uluu won 1.0 percent and Akunov received 0.4 percent of votes.

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[12] Tchoroev, T 2009, 'Historiography of Post-Soviet Kyrgyzstan', Cambridge University Pres, vol. 34, no. 2, pp. 351-374

4.2. Nationality Policy and Cultural Change

After the separation from USSR, national policy and ethnic problems become one of the important issues for Kyrgyzstan. There were two options that were argued officially about creating Kyrgyz nations. One come up with the idea that government should put some compulsory restrictions such as; knowledge about Kyrgyz language on people who want to be Kyrgyz citizenship .Other asserted that creating ethnocentric state would be very difficult and harmful. Yet tense interethnic relations had been seen since 1990s, only 52 percent of people in Kyrgyzstan was ethically Kyrgyz and 22 percent was Russian, 13 percent Uzbeks.

By virtue of all these reasons, Akayev's government pursued the policy of admitting all people as a citizen of Kyrgyzstan who respect and loyal to newly establishing republic by unifying all ethnic groups within the Kyrgyzstan and continuing multiculturalism to prevent any possible ethnic conflict. On the other hand, parliament changed name of streets, public places, squares from Russian to Kyrgyz names. It introduced new symbols of Kyrgyz cultural traditions. New flag, new national anthem, new currency and passport were also introduced. Kyrgyz republic also allowed religious practice and lifted all restrictions on it. Nonetheless, between the 1989 and 1995, almost 15 percent of all population including Russian, Ukrainian, Jews, and Germans left the country due to fears of conflict economic slump. Therefore, since then Kyrgyz population became ethnically more monolithic such that Kyrgyz population reached 68 percent in 2002 which was 52 percent in 1989 (see table 1).

Table 1 Poluation Composition in Kyrgystan

	1926		1959		1989	
	No	%	No	%	no	%
Kyrgyzs	668,700	66,8	836,800	40.5	2,229,663	52.4
Russian	116,800	11.8	23,600	30.2	916,558	21.5
Uzbeks	106,300	10.6	218,900	10.6	550,096	12.9
Ukrainians	64,200	6.4	137,000	6.6	108,027	2.5
Germans	4,300	0.4	39,900	1.9	101,309	2.4
Tatars	4,900	0.5	56,300	2.7	70,068	1.6
Uighurs	8,200	0.8	13,800	0.7	37,318	0.9
Kazaks	1,700	0.2	20,100	1.0	36,928	0.9
Dungans	6,000	0.6	11,100	0.5	36,779	0.9
Tajiks	7,000	0.7	15,200	0.7	33,518	0.8
Other	13,600	1.4	93,400	4.5	137,491	3.2
Total Population	1,001,700		2,066,100		4,257,755	

Source: Narodnoe Khoziaistvo Kirgizskoi SSR (Frunze,1982) p.16, Vestnik Statistiki, no. 4 (1991), 76-78

4.3. Economic Policy

Building the national economy was the main task of independent Kyrgyzstan. Kyrgyzstan undertook the role of agriculture and industrial goods provider in the centralized Soviet economy. Therefore, the main purpose of the Kyrgyzstan was to decentralize its economic activities and building financial systems. Kyrgyzstan in 1991, shortly after its separation from USSR , was ranked 31th in the UNDP Human Development index along with US$ 1,160 GDP per capita which was similar to Newly Industrialised Countries (NIC). 32 percent of its GDP belonged to industrial manufacturing goods, 42 percent to agricultural sector and natural resources. 'Shock Theraphy' was imposed by IMF and World Bank together with privatization, Kyrgyzstan's government tightening belt policies

Transition from command, state-led economy to the one that all economic decisions are determined by market forces was aimed by IMF and WB. Therefore, Kyrgyz government introduced Program of Economic Growth. For the speeding up the transition period and opening to free market, privatization was the initial policy that Kyrgyzstan's government put into force. 100 percent of the households-services, 80 percent of industrial enterprises,

97.2 percent of trade and food services were privatized by 1998.[13] In addition, due to hyper-inflation caused by Russian ruble, Kyrgyzstan was the first country among Central Asian Republics left the Russian ruble zone. It established its own currency 'sam' in 1993.

The endeavors of the Kyrgyzstan's government were to integrate global economy and adopted itself into free trade, attracting Foreign Direct Investment (FDI), improving its economic relations with developed and developing countries. In order to take FDI from China, Turkey, Germany, the United States and other countries, all trade restrictions such as quotas, tariffs were lifted and Free Economic Zones were created. Whereas, contrary to expectations, FDI came at much slower rates. Hence, Kyrgyzstan started to depend on international credits and loans, US$ 100 million loan from IMF and US$ 45 million loan from Asian Development Bank (ADB) between 1999-2002.

In 1991, Kyrgyzstan had zero foreign debt, although it had US$ 1.4 billion in 2002. In spite of Akayev struggle for radical reforms to develop economic prosperity of the whole country, he could not prevent deepening economic crises (see table 2).

Table 2 Growth rate in Kyrgyzstan

YEAR	GDP-real growth rate	Rank	Percent Change
2003	-50%	189	
2004	6.70%	30	-1,440.00%
2005	6.00%	56	-10.45%
2006	-60%	208	-110.00%
2007	2.70%	169	-550.00%
2008	8.20%	33	203.70%
2009	7.60%	24	-7.32%

Source: CIA World Factbook

Between 1991 to 1996, Kyrgyzstan economy shrank by 45 percent and was followed by betterment between 1996-97 with annual 5 percent growth rate. This recovery period was deteriorated by Asian and Russian financial crises by 1997. By 1999, its GDP was 70 percent of the 1991 level. By 2000, Kyrgyzstan's economy got better with 6 percent annual increase of its GDP, and 10.3 percent annual increase of industrial sectors. Even though, 2001 Kyrgyzstan's GDP remained below of the 1991 level (see table 3).

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[13] Abazov, R 1999, 'Economic Migration in Post-Soviet Central Asia: The Case of Kyrgyzstan', Post-Communist Economies, vol. 11, no.2, pp. 338-352

Table 3 GDP in Kyrgyzstan

YEAR	Gross domestic product , constant prices	Percent Change
1993	-13.005	
1994	-19.807	52.30%
1995	-5.751	-70.96%
1996	7.084	-223.28%
1997	9.9	39.75%
1998	2.1	-78.79%
1999	3.7	76.19%
2000	5.398	45.89%
2001	5.3	-1.82%
2002	-0.022	-100.42%
2003	7	-31.918.18%
2004	7.027	0.39%
2005	-0.16	-102.28%
2006	3.1	-2.037.50%
2007	8.5	174.19%
2008	7.6	-10.59%
2009	1.465	-80.72%

Source: International Monetary Fund - 2009 World Economic Outlook

The reason why Kyrgyzstan could not achieve economic development with shock therapy that was effectively applied in Poland were related to economic freedom of Kyrgyzstan such as property rights, regulations, black market, corruption and so on. Moreover, diminishing purchasing power party (PPP) of the Kyrgyzstan's population has been another problem that discourages FDI to invest in Kyrgyzstan. Kyrgyzstan was at the 31st rank on the bases of PPP in 1991 according to UNDP human Development Index, yet, it was 102nd place in 2002.

4.4. Creating a Framework for Civil Society

Under the Soviet rule, social groups and individuals did not find any opportunity to create any civil society. Since Kyrgyzstan's people had never experienced being governed by democratic regime, they did not know the meaning of freedom, social rights, individual rights and creating lively civil society. Before and during the Soviet era, solidarity, ethnic

ties, kinship were really important for their traditional life. Groups always had the priority over individuals.

It has been suggested that, in order to consolidate the democracy, economic, political reforms and strong civil society are needed. Under normal circumstances desire for creating civil society comes from citizens, economic and political interest groups. Nevertheless, in some exceptional countries like Kyrgyzstan, since they do not have any democratic pass, state enhances the emergence of civil society. After the collapse of Soviet Union, Kyrgyzstan under Askar Akayev rule encouraged social organizations. He pointed out the importance of creating lively civil society to speed up the democratic transition.[14]

Kyrgyzstan made advancement in the creation of the civil society but the faith of civil society was in the hands of the action and activities of political elites. Short after the Askar Akayev's election for presidency, he met with leaders of various social groups, allowed establishment of number of independent newspapers and free media was created. Promises and actions of Akayev continued after the obtainment of Kyrgyzstan's independence. Between 1991 and 1994 number of social organizations, religious communities rose dramatically. He held regular meetings with journalists to eliminate political and economic questions and doubts in society and to take more public support for his governance. Whereas, by 1994, Akayev lost his enthusiasm for democracy and creating civil society. He emphasized on importance of central state authority in order to achieve certain political and economic advancements. Furthermore, from the mid 1994 several journalists were arrested. In the 1995 parliamentary elections and presidential irregularity was evident. Following year, Akayev expanded executive power.

Especially after 2000 parliamentary and presidential elections, pressure on civil society increased a lot. Economic transition from command economy to liberal economy normally paves the way for economic interest groups. Yet during the economic transition period of Kyrgyzstan, state owned enterprises were denationalized by being purchased by tiny minority of the population who were the members of nomenclature, small elite group in Soviet Union generally held key administrative positions. Therefore, no civil society for

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[14] Anderson, J 2009, 'Creating a Framework for Civil Society in Kyrgyzstan', Euope-Asia Studies, vol. 52, no. 1, pp. 77-93

pursuing economic interest was created. Because those tiny groups who had the big portion from privatization of state owned enterprises, had already found opportunity to get access to government policy makers. Anderson (2004) states:

> 'In most established democracies the state provides a regulatory framework, a set of laws, institutions and conventions which regulate the life of social organizations...in newly independent Kyrgyzstan that framework is spelt out in the constitution civil code and various laws applying to specific groups, is implemented largely by the Ministry of Justice'.

The amount of social organizations rose from 250 in 1993 to nearly 1000 by mid 1997. Especially by mid 1997 pressure toward social groups like political oppositions, human right groups, movements criticizing economic reforms increased a lot. Ministry of Justice started revision for social and political organizations. President Akayev called for re-registration review of all religious organizations by Justice Ministry along with Commission on religious affairs. It was afraid of increasing fundamentalism that could harm the democratic structure of new Kyrgyzstan.

During the early 1990s, Akayev allowed emergence of different ideologies and newspapers ideologically free from Akayev. For example, Sovetskaya Kirgiziya and Res Publica are some example of newspapers that explicitly were pressed as opposition-minded newspapers. On the other hand, televisions and radio publication were under strict control of the state. There were 13 independent televisions but television debates were not done freely.[15]

With the economic deterioration and political contestation pressure over television, newspaper and radio publishing mounted up. Res Publica was subjected to official sanctions and its editor were suspended from journalism in 1995 when he declared Akayev estates in Turkey and Switzerland and most of the journalist of Res Publica were arrested in 1996. Kriminal, another paper was closed by Ministry of Justice in 1997. In short, activities of political and social organizations and freedom of press and mass media could be practices to some extend and under certain protection of laws until 1997. Civil society

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[15] Anderson, J 2009, 'Creating a Framework for Civil Society in Kyrgyzstan', Euope-Asia Studies, vol. 52, no. 1, pp. 77-93

had found the opportunity to exercise its activities as long as political elites allowed them. Although at the beginning of independence time of Kyrgyzstan, Akayev was so enthusiastic about creating free and dynamic civil society. Whereas, this enthusiasm wore off because of the augmentation of the economic and political problems.

5. Tulip Revolution

On February 27 and March 13 2005, parliamentary elections were held. As a result of this election only six seats were won by oppositions out of 75 seats. Rest of the parliament seats were held by adherents of the Akayev as did in previous elections. Together with the corruptions, increasing economic disparities, political unrest, shadows in the privatization process of SOEs and authoritarian rule of Akayev pushed people in Kyrgyzstan to their limits.

After the announcements of the result of parliamentary elections, protestors began to raided government's buildings and offices. Since it was argued that government officials like chief prosecutors and district governors were in alliance with electoral fraud of Akayev's government. These rebellions launched on March 18 at Jalal-Abad and Osh and then it spread to other regions like Pulgon, Ala-Too Square, an deven to capital Bishkek. On March 19 thousands of people got together in Osh region and attended kurultai and established 'people's council' and claimed that it will be the alternative government since new government would be established and their problems would be solved.[16]

What made the people brave when they made this rebellion were 'Color Revolutions' in Georgia and Ukraine in 2004. Like in all other revolutions, tulip revolutions started as nonviolent but turned into bloody one. Protestors occupied government buildings and captured government officials in Jalal-abad on March 20 2005. On March 21 protestors did the same thing in Osh region and captivated Osh airport, television station and police station. Police forces were sent the regions and bloody collision between police and protestors started. Yet the time passes policemen also took off their clothes and attended protests. During rebellion what Akayev did was to dismiss Bakiridn Subanbekov, Interior

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[16] Kimmage, d 2005, 'Uneasy days in Kyrgyzstan' http://www.rferl.org/content/article/1058085.html

Minister and Myktybek Abdyldayev, General Prosecuter as a scapegoat. The protestors unified around two opposition leaders: former Prime Minister Kurmanbek Bakiyev who resigned when police shoot five unguilty demonstrators protesting electoral fraud 2002 in Aksy, and former Foreign Minister Otunbaeva. On March 24, protestors occupied main government building and captivated state television and radio forcefully. The same day Prime Minister Nikolia Tanayev resigned and President Akayev escaped to Moscow but resisted resigning. He appointed temporary cabinet and Interior Minister. But demonstrations became widespread and armed forces supporting Akayev tried to capture Bishkek and to find support for Akayev but they could not. Thereupon, Temirbek Akamataliev, former minister of the interior who responsible for 2002 Aksy events about killing five innocent demonstrators announced that country would go presidential elections. On March 28 parliament was dissolved and new parliament took in force. On April 2005, Akayev declared his resignation as a president from Moscow. April 11, Kyrgyzstan Parliament accepted his resignation.

What made Akayev administrative system that so long standing in spite of his failure in providing economic and political stability and advancement was his and his wife's clan based background. His clan and his wife's clans were very important ones in Kyrgyzstan. He distributed natural resources or allocated administrative systems among those clan members. For example, his wife's clan had the control in gold mining and privatization. Due to those clan supports, he achieved to get support from most of the population during his administrative system.[17]

New president elections were held in July 2005. Felix Kulov imprisoned during Akayev's administration as an opposition to Akayev and realized after tulip revolution, and Kurmanbek Bakiyev were the candidates for the 2005 president elections. Kurmanbek promised to change 1993 constitution which gave great power to president and also promising for recovery of the economic breakdowns and corruptions. He won president elections and appointed Felix Kulov as a Prime Minister. Aftermath of the 2005, all hopes and expectations about democracy changed in Kyrgyzstan with the Bakiyev's administration. In contrast of those expectations, there was no change in the country. He

[17] Collins, K 2002, 'Clans, Pacts, and Politics in Central Asia', Journal of Democracy, vol. 13, no. 3, pp. 138-151

did not keep his promise about constitutional change, political crises emerged, and economic situation of Kyrgyzstan worsened and more autocratic regime had come to head.

As a reaction of that oppressive and bastardized regime, rebellions emerged in capital Bishkek in 2006. Thousands of people protested new government. Those protests rose in 2007 and oppositions wanted resignation of Bakiyev. Thereupon, he passed constitutional amendments about reducing president power. But protesters did not satisfy with those amendments and insisted on resignation of Bakiyev. Police forces suppressed those rebels. 23 July 2009, Presidential elections was held. Bakiyev re-elected but elections process was so problematic because opposition candidate Almazbek Atambayev withdrew from elections due to electoral fraud. According to Organization for Security and Co-operation in Europe (OSCE)[18] and Commonwealth of Independent States(CIS), Bakiyev gained unfair elections. Although demonstrations emerged during and after elections, it did not make any changes in Kyrgyzstan administrative system.

6. Conclusion

Kyrgyzstan has not experienced full and consolidated democracy since it got its independence from USSR. There are several reasons for the problems in its economic, social and cultural transition process. First of all, its tribal, unsettled and nationally unidentified historical background in the Turkistan created hardship for constructing Kyrgyzstan's own history. Second, Kyrgyzstan suffered economic, political exploitation under Soviet rule. It exposed ethnic migrations from Russia and other Slavic regions that made Kyrgyzstan ethnically more heterogeneous and problematic. Thirdly, Kyrgyzstan lacks important natural resources accompanied with mountainous structure of the region that isolates the region from the rest of countries. Kyrgyzstan could not achieve consolidate its democracy after it got its independence from USSR. Akayev and Bakiyev undertook the same prevention role in the Kyrgyzstan politics. It is obvious that Kyrgyzstan transition process was not and will not be an easy task for the country.

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[18] OSCE, 'Kyrgyz presidential election failed to meet key OSCE commitments, despite some positive elements 'http://www.osce.org/item/39014.html

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Democratization Process in Tajikistan

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Abstract
In this paper, Tajikistan Republic as an independent Central Asian state will be analyzed. There will be brief information about the country's history, people, economy, postwar period and transitions. In addition to them, transition process of Tajikistan will be mentioned in terms of national, political and economic transitions especially after the collapse of Soviet Union because, in 1991, Soviet rule has ended and Tajikistan became independent. After Soviet rule, Tajikistan could not establish a democratic state which led to civil war and disparities among the society. However, it has a geostrategic location that has border with China and Afghanistan. It is still affected by economic difficulties.

1. Introduction

Tajikistan's political and economic history is divided as before and after Russian rule. This Turkic Republic was suppressed by Russians like other Central Asian states during 20th century. After the fall of Soviet Union, Tajikistan experiences national, economic and political transitions. However, this would not be a mild process. Thus, Tajikistan faced to economic downfall, ethnic divisions and bloody civil war. Moreover, Tajikistan has had a close relationship with Russia regarding economic, politic and military patterns. Even now, they are trying to deal with energy issues and military basis.

History

Tajikistan history is based on the Samanids Empire which survived along (A.D 875–999). Samanids provided basis for written Persian language and culture with the consequence of Arab Islamic conquest. Arab world influences the Persian culture in that area in the early 8th century. The aim was to preserve and protect the living Persian culture with the help of language. They were the last Persian- speaking empire to dominate Central Asia.[1]

Later on, in the early 19th century, Russian expansion and settlement appeared heavily in Central Asia. Russia began to its colonization process in Tajik region as well as in other Central Asian states. It had an encompassing power for settlement after various unsuccessful trials. The Russian rule started to increase in order to have some economic benefits from the region. Cotton was an important means for that purpose. That dominancy brought some alterations in the region; however they were not so huge enough. Lots of Russians began to migrate to Central Asia. On the other hand, Russians did not change the education system, serfdom system or traditions. These were important elements for Russian rule to be accepted.

Nevertheless, there was an opposition side too. The group which was called as Jadidist represent themselves as new traditionalists.[2] They were interpreting Islamic teaching again and educating students according to these principles. They were modernizers and nationalists at the same time. They consist of Tatars, Uzbeks and Tajiks which support the Central Asian culture against Russians.

In 1905, Russia experienced a failed revolution. As a result, another Duma (parliament) was established in St. Petersburg. However, the inhabitants of Central Asia had no representation right in the parliament except Turkistan indigenous population. It was a first signal of distress from Russian movement. It began to ascend in 1916 and showed a big discontent from the existing condition. Central Asian people had important reasons for revolting against Russia. Initially, from economics perspective, they were imposed an

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[1] http://www.state.gov/outofdate/bgn/t/121249.html
[2] http://countrystudies.us/tajikistan/4.html

unfair taxation and price valuation in their trade relations. Then, they were excluded from military service. After that, the reactions gained pace and Russian troops began to move into Central Asia. Demonstrations and conflicts continued during whole year just before 1917. The Russian Revolution which is also called as Bolshevik Revolution resulted in the end of Russian tsarist rule in the area.

Furthermore, Bolsheviks tried to get Central Asia back to under Russian dominance but, it was not an easy process at first. They had faced a resistance movement which is called as "Basmachi movement". This resistance did not last very long. In the early 1920s, Tajikistan Republic was established under the Soviet control. It was a creation of dependent republic. Although the inhabitants of Tajikistan perceived little influence from Russian rule, it was indeed incorporated with ideology. Nevertheless, the homogenization process could never have been achieved and created problems. Next, the establishment of independent Tajikistan republic was seen in 1929 as a separate Soviet Socialist Republic.

PEOPLE and RELIGION

The nationality of Tajikistan people is Tajikistani. They do not have a big population relatively to its size. Its population is 7,345,100. Population growth rate is about 2.3%. It does not have a homogenous population. It involves different kinds of ethnic groups. They can be explained like that with the facts: Tajik 74%, Uzbek 23%, Russian and others 3%. For language, the official state language is Tajik[3]. However, Russian language is also widely used for economic relations and communication. Thus, it is named as "the language of international communication". Besides, they may have a religious homogeneity to the extent. The rate of Sunni Muslim is 85%, Shi'a Muslim 5% and other 10%.[4] The capital city of Tajikistan is Dushanbe. The general life expectancy is 64.47 years.

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[3] http://www.state.gov/outofdate/bgn/t/121249.htm
[4] http://www.eurasianet.org/resource/tajikistan/articles/index.shtml

CITIZENSHIP

Tajik government points out Tajik citizenship procedure in its Constitution after its independence in 1994. According to this constitutions article 15; it is stated that "Citizen of Tajikistan is an individual who has been a citizen of the Republic of Tajikistan on the day of adoption of the Constitution. Citizens of Tajikistan cannot enjoy citizenship of other states with the exception of the situations stipulated by law and intergovernmental treaties of Tajikistan. Procedures stipulating acquirement and loss of citizenship are defined by the Constitutional law."[5]

GOVERNMENT

The type of Tajikistan government is Republic. It holds elections both for president and the parliament. It gained its dependence from Soviet Union on September 9, 1991. The constitution was formed in 1994 three years after the independence, because it had a struggle inside the country. It has a principle of separation of powers. It means that the executive, legislative and judiciary have different jobs to get involved.

Firstly, executive will be mentioned that is including chief of the state, head of government and the cabinet. Emomali RAHMON is the current president since 1994. Oqil OQILOV is the prime Minister since January 20, 1999, he was appointed by president. Although his retirement time came, he does not give up his status there. For Ministry elections, Council of Ministers is appointed by the president and they should be approved by the Supreme Assembly. Besides, the elections are held every 7 years term, according to this principle; last election was held November 6, 2006.

Second branch is legislative. Tajik parliament has two chambers. Thus, bicameral Supreme Assembly or Majlisi Oli involves the Assembly of Representatives or Majlisi Namoyanandagon. It can be seen as lower chamber which has 63 seats in the parliament. Moreover, members are elected by popular vote to serve 5-year terms. On the other hand, the upper chamber is called as National Assembly or Majlisi Milli. It includes 34 seats. Its' members are indirectly elected by popular vote for 5-year terms. In National Assembly, 25

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[5] http://unpan1.un.org/intradoc/groups/public/documents/untc/unpan003670.html

members elected by *majlis* deputies and eight presidential appointees. [6]Elections are lastly held February 27, 2005 for the Assembly of Representatives. Third branch is Judiciary. Supreme Court manages this mission. In addition, Judges are appointed by the president of the country.

POLITICAL PARTIES

The most important party is surely The Communist Party of Tajikistan. During the time which Tajikistan was a Soviet republic, Communist Party of Tajikistan held the political power inside, so that was not in the state. However, the party was an integral part of the CPSU, subordinate to the central party leadership until 1991. In the years before independence, various opposition parties appeared with different agendas. Since the civil war, the opposition's official participation has been limited sharply, although some parties remain active abroad.

Tajik communist party membership increased rapidly during the 1920s. However, the percentage of Tajik membership in the Communist Party of Tajikistan faced to fluctuations in that process especially in the following decades due to the circumstances. Throughout the Soviet period, however, Russians retained dominant positions. In the mid-1980s, the Communist Party of Tajikistan had nearly 123,000 members. About two-thirds of this rate represented urban regions, with subordinate provincial, district, and municipal organizations.

The Communist Youth League (Komsomol) that provided most of the future party members had more than 550,000 members in 1991[7]. On the other hand, there was a significant decrease of interest in party membership although they have the privileges and opportunities that the party could offer at the end of the Soviet era. By 1989 many districts were losing members much faster than new members could be recruited.

The Communist Party of Tajikistan in August 1991 became less popular and favorable among people because of the failure of the coup by hard-liners in Moscow against President Gorbachev. Despite of its suspension in 1991, the party in Tajikistan was able to

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[6] http://www.iexplore.com/dmap/Tajikistan/History
[7] http://countrystudies.us/tajikistan/39.html

take its property during its suspension. Just before sanctions were imposed, the party changed the adjective in its name from communist to socialist. In December 1991, the party has taken its original name and began a vigorous campaign to gain its earlier monopoly of power back.

Other parties were opposition parties, but then, they obtained a serious number of votes. The current situation of the parties in Tajikistan parliament is like that according to last elections: People's Democratic Party of Tajikistan 74.9%, Communist Party 13.64%, Islamic Revival 8.94%, other 2.5%. People's Democratic Party of Tajikistan or PDPT executed by Emomali RAHMON; Islamic Revival Party or IRPT by Muhiddin KABIRI; Tajik Communist Party or CPT by Shodi SHABDOLOV. The aims of the first party which is People's Democratic Party of Tajikistan are strengthening of peace, construction of legal democratic socially-oriented state, development of integration with Russia, other countries of CIS. It registered in December of 1994. Other big party, Islamic Revival Party of Tajikistan registered in 1991, and was banned in February of 1992 by Supreme Court of RT.[8] On August 12, 1999; in accordance with peace agreement was legalized.

ECONOMY

Tajikistan is the poorest of the five former Soviet Central Asian republics. It is estimated that four-fifths of the population lives below the poverty line. Numerical facts prove this situation. In terms of year 2008 facts: nominal GDP of Tajikistan is $4.788 billion and nominal GDP per capita is $ 561. Purchasing power parity: $1,800. Besides, real growth rate is 4.5% and inflation rate is 21% according to consumer prices.[9]   Basic services and infrastructure are poor to non-existent. There are certain natural resources that plays role in the country's economy which are hydropower, some petroleum, uranium, gold, mercury, brown coal, lead and zinc.

The other big problem is unemployment within the state although the official unemployment rate is given as 2.3%. For the reason that the official rate is estimated based on the number of registered unemployment benefit recipients; it does not take into account the significant number of people who seek work abroad. Indeed, it is an important indicator

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[8] http://www.eurasianet.org/departments/election/tajikistan/tajikparties.html
[9] http://www.state.gov/outofdate/bgn/t/121249.html

that we should pay attention. In addition, underemployment also is very high that is considered as 40%.

Tajikistan has a sizeable agricultural sector accounting for one-quarter of GDP and employing half the workforce although less than 10% of the country's land can be cultivated.

From trade perspective: Imports of the country accounts for $3.2 billion. Tajikistan generally imports the specific goods which are aluminum, electricity, cotton, gold, fruits, vegetable oil, and textiles goods. Its import partners are Netherlands, Turkey, and China. Then, its' exports account for $1.4 billion and the exported goods are electricity, petroleum products, aluminum oxide, machinery and equipment, foodstuffs. Tajikistan has export partnership with the countries of Russia, Kazakhstan, Uzbekistan, Azerbaijan, China, Ukraine, Italy, and Turkmenistan. Next, for 2009 data, total external debt is $1,371.4 billion. Debt/GDP ratio is 28.5%.[10]

However, the main reasons behind suffering Tajik economy are dislocations caused by the break-up of the Soviet Union during the 1990s followed by two outbreaks of civil war. It has recovered slowly since the 1997 peace accord but some positive consequences indicate themselves now such as the hyper-inflation which reached to top during the civil war has now been cut. The implementation of current government's economic reform program involves a typical recipe of privatization, deregulation and fiscal reform.

Tajikistan seems economically stronger compared to a decade ago. It has guaranteed membership of the IMF and World Bank in 1993; it also belongs to the European Bank for Reconstruction and Development as a Country of Operation. Moreover, it has received significant aid from Middle Eastern donors comprising Saudi Arabia, Kuwait and the Islamic Development Bank. External donors now supply around 60% of Tajik government income.

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[10] http://www.state.gov/outofdate/bgn/t/121249.html

Tajikistan faced many economic and fiscal changes after Soviet era. One of them is its currency, the Somoni. It was introduced in October 2000 to replace the five-year-old Tajik ruble. Besides this, in April 1998, Tajikistan was accepted to the Customs Union of the Commonwealth of Independent States, a loose federation of former Soviet republics[11]. Its' members continue to dominate Tajik trade. In July 2001, Tajikistan got observer status at the World Trade Organization.

Tajikistan has followed a relatively strict fiscal and monetary policy due to provide macroeconomic stability. However, government interference in the economy and massive corruption affected economic growth and private investment. The government has attracted state-led investment for major infrastructure projects, rather than implementing the necessary economic reforms to attract private investors.

POST-WAR PERIOD

The post-World War II era witnessed the expansion of irrigated agriculture, a significant progress in industry, and a rise in the level of education in Tajikistan. As other countries in Soviet Union, Tajikistan felt the effects of the party and government reorganization projects of Soviet leader Nikita S. Khrushchev who took office between years of 1953 and 1964. Especially in 1957 and 1958, Khrushchev followed ambitious policies to have much bigger arable lands inside the Union. For this reason, he tried to implement Virgin Lands project. Thus, Tajikistan's population and economy were manipulated because of these organized projects. Besides, the borders of Tajikistan changed too. Khrushchev and his successor, Leonid I. Brezhnev redrew Tajikistan's borders periodically as districts and provinces. They were recombined, abolished, and restored. In addition, small amounts of territory were obtained from or ceded to neighboring republics.

Central Asian lands were subdivided by the Soviet government during the 1920s. Tajikistan was established as an autonomous republic within the Uzbekistan Soviet Socialist Republic in 1924. It included the eastern holdings of the emirate of Bukhara which is now central and southern Tajikistan, and a part of the former governate, guberniya, of Turkestan. In 1925, the Pamir Mountain region, on the Afghan-Chinese

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[11] www.iexplore.com/dmap/Tajikistan/History

border, was transferred to Tajikistan under the name Gorno-Badakhshan. In 1929, Moscow manipulated and then separated Tajikistan from Uzbekistan and made it a full Union Republic. At that time, the Ferghana Valley region was transferred to Tajikistan's control. This area had been part of Uzbekistan.[12]

INDEPENDENCE

While the Soviet Union started to have conflicts and distress inside, some movements began to increase in Central Asian countries like in Tajikistan, because a struggle for possession of power between these various factions emerged rapidly and began to have bigger effects such as spiral effect in the late 1980s. Political blocs began to take their own sides in terms of democratic, Islamic revivalist and regionalist agendas. They initiated to crystallize, and conflicts between these factions became much more significant.

Next, Disputes between the social groups began to have fire. They have certain reasons to rely on." These included clan and tribal divisions with deep historical roots stretching back before the Soviet era; a weak sense of national identity; an Asian-cum-Muslim cultural and religious climate; a 70-year history of oppressive Soviet rule; political institutions imposed by communism; ethno national divisions between Turkic, Persian, and Slavic groups; and uneven economic development based on the exploitation of natural resources. The USSR's collapse in 1991 hurled them all into the same process of sudden and involuntary decolonization, independence, and putative political transition."[13]

In February 1990, demonstrations against government housing policy triggered a violent clash in Dushanbe. Thus, First riots began in 1990 in the streets of Dushanbe by Tajikistan nationalists. These movements were against Soviet government in power. Then, Soviet army units tried to end the riots which resulted from demonstrators and bystanders alike. The regime imposed a state of emergency that using the riots as a pretext to repress political unrest, but, this situation continued even after riots were pressed too. In this period, criticism of the regime by opposition political leaders was censored from state

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[12] http://www1.umn.edu/humanrts/ins/tajiks94.pdf, Alert Seris Tajikistan Political Conditions in the Post-Soviet Era, 1993, pdf.
[13] CLANS, PACTS, AND POLITICS IN CENTRAL ASIA: Kathleen Collins, Journal of Democracy Volume 13, Number 3 July 2002; pdf.

radio and television broadcasts. The state punished the leaders of the popular front organization Rastokhez (Rebirth) for provoking the riots, although the Supreme Soviet later ruled that Rastokhez was not implicated. Besides, Students were got rid of from universities; and the only reason was to participate nonviolent political meetings. The events of 1990 resulted in a condition that opposition became even more critical of the communist old guard than it had been previously.

Even Tajik president was supporting the coup against Gorbachev and it was obvious. However, it was a failed coup. Tajikistan declared its independence on September 9, 1991. However, it could not get its full independence until December 1991.

TRANSITIONS

National Transition and identity

Nation-building process had become a difficult process for Tajikistan. It can be called as a community of necessity. Because, it has a piece of territory and comprised of various ethnic groups. For that reason, it became impossible for Tajikistan to create a full nation. They do not still have a unified core symbol for national identity. Therefore, the disparities in Tajik region are resulted from three types of identity related reasons in terms of religious identity, ethnic community identity and regional identity.

Firstly, it had a religious conflict which was between Islamists and seculars. Existing government was seen as secular and the opposition was Islamist. Thus, this division led to a bloody civil war in Tajikistan. Islamist opposition gained power with the help of the roots of belief. Besides, it could get financial support from abroad against government.

Second is ethnic community identity that caused disputes inside the country because, it has Tajik, Russian and Uzbek ethnic groups. Even the official language is Tajik; however, it is not much demanded by people especially in young generations. Russian seems to be used as a secondary language but, it is more influential in international communication and education system curriculum. On the other hand in the northern region which is also known as Fergana Valley, Uzbek people are situated. Thus, it is very difficult for them to be imposed to speak Tajik or Russian. For that reason, we come across serious problems in

the country. Besides, Tajikistan has a problem of Clans in political life and transition period. After the fall of Soviet Union, the transition to democracy could be reached easily. Because, it was a clan based society. They are actually executing the country. When they are distressed from any political, economical or cultural event, they show their reaction and government cannot anything in contrast. Therefore, they have an irresistible power inside the country.

Lastly, regional identity differences plays role in turmoil. Because, it cannot ignore its roots of Persian, Iranian culture. On the other hand, it stays in Central Asia and has a unique culture of it too. For example, Khorasan region stands for and symbolizes Persian culture from centuries on. The art and literature are also influenced by this culture.

Political Transition

After that time, there have been disparities between three political forces: "Rastokhez" (Renaissance), which had emerged from the nationalist awakening through glasnost policies. It focuses on the revival of Tajik culture and tradition. Moreover, it led to the creation of wide political and economic reforms. Some examples can be given in such a way that the Democratic Party of Tajikistan, political pluralism movements and secularism in the government. In the early independence period, the old guard tried to preserve its power in Tajikistan. However, it had to face a power grab by Islamic radicals who would bring to Tajikistan fundamentalist which we had seen in Iran and Afghanistan. Neither of them could reach the estimated public opinion. This process was a total failure.

The legislative election was held in February 1990 under the tight constraints of the state of emergency. In the presidential election of 1991, Nabiyev had faced only one opponent, filmmaker and former communist Davlat Khudonazarov. His messages had been strictly followed by communist control of the news media and the workplace[14]. Although Nabiyev's was perceived as a possible winner, Khudonazarov received more than 30 percent of the vote unexpectedly.

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[14] http://countrystudies.us/tajikistan/37.html

CIVIL WAR

When the Soviet Union collapsed in 1991 the Tajiks were not ready for independence and did not want to survive alone without Soviets. They were used to live with soviets and happy for that situation. Because, they were aware of that surviving would not be so easy. Then, they faced the condition that the economies began to suffer almost immediately without Soviet funds. The new government tried to have a deal with the IMF and the World Bank for help. They recommended them to remove soviet price controls and allow the free market to stimulate growth in the economy.[15] This caused the price of food and commodities to skyrocket at the same time that wages paid by the state were disappearing. This disruption in people's strategies of survival set into motion a wave of civil unrest in the spring of 1992. However, it was not the only reason for civil war.

As the Soviet apparatus dissolved it became clear that the Soviet power structure and economic policies was the only thing keeping Tajikistan unified. Left to their own devices the regionalist movement, which had remained submerged in the Soviet era, manifested itself on the political stage. The Tajik opposition emerged to challenge the existing government that was made up of communist from the old regime who supported the Northerners and were based out of Khujand. The opposition was a coalition of prodemocracy and Islamic parties which was comprised of 'mountain Tajiks' from the Garm-Kartogin and Pamiri region of the country. In 1992, government still could not achieve the authority inside the country. Therefore, demonstrations continued and reached a top level.

In May 1992, the Tajik opposition obtained power from the Tajik Supreme Soviet, triggering the civil war[16]. In May, according to opposition demands, Government of National Reconciliation was formed. It aimed to restrict the power of the President and putting opposition in important parliamentary and ministerial positions. Especially, in the first half of 1992, the opposition responded to increased repression by organizing ever larger planned demonstrations. For that reason, Nabiyev established a National Guard

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[15] http://homepage.mac.com/alborz/alborzintnl.com/papers/Hist%20498%20Tajik%20civ%20war.pdf
[16] http://www.globalsecurity.org/military/world/war/tajikistan.html

force to decrease the power of opposition. Nabiyev gave a decision to leave the discussions to deal with in moderation and negotiations.

Thus, oppositionist demonstrators did not act calmly to that decision. As a result, the confrontation came to a head when opposition demonstrators were fired upon and eight people were killed. At that point, the commander of the Russian garrison in Dushanbe reacted in a manner that broke his compromise. It seems vital that the main result of the agreement was the formation of a coalition government in which one-third of the cabinet posts would go to members of the opposition. However, coalition supporters, who were situated in the southern Qurghonteppa Province and the eastern Pamir region, became militarized too against the government. In that time, they were ready to fight against. It also means that opposition side gained force thanks to Russian helps. From another perspective, these movements would not have positive effects inside the country. The country was pushed into a possible civil war which would lead to various deaths and battles.

Meanwhile, opponents of reform brought their own supporters to Dushanbe from nearby Kulob Province to show counter demonstrations in April of that year. Tensions mounted, and small-scale clashes occurred. The opposition was defeated in December 1992 and the current Tajik government assumed control. The defeated opposition comprised a coalition of self-declared democratic and Islamic groups and Islamic fundamentalists, a plurality of whom originate from the Garm-Kartogin region of the country, and Pamiris, who were traditionally underrepresented in the ruling coalitions during Soviet and pre-Soviet rule

The supporters of the old regime from Khujand then made an alliance with the Kulabis a group of valley Tajiks from the Khatlon province and started to regain control. These regime supporters appealed to the Russians and the Uzbeks for assistance in regaining control and defeating the opposition. They used the fact that the opposition was comprised of Islamic parties to claim that they were fighting fundamentalists and thereby get the Russian involved. With Russian military support, the opposition was defeated in December of 1992 and the old regime representing the regional interests of the Leninabadis took power and has remained in power to this day.

Therefore, the following facts prove those provisions. So that for most of the rest of 1992, opponents of reform worked hard to convince the coalition and block implementation of measures such as formation of a new legislature, because the opposition would become powerful and be able to get support from people. Then, in the summer and fall of 1992, feverish battles resulted in many injuries among civilians and combatants. In August 1992, demonstrators in Dushanbe influenced Nabiyev and forced him to resign. HE was unwilling to do this. The speaker of the Supreme Soviet, Akbarsho Iskandarov had close relations with Nabiyev. So, he felt like he could act as a president. Iskandarov advocated a negotiated resolution of the conflict, but he had little effect over either side. However, in September 1992, the Nabiyev government was forced to resign, and was eventually replaced. Ex-communists President Imamali Rakhmonov came into power. He was known as follower of harsh policies. It was an important change in government power.

The political and military battles for control continued. In November the Iskandarov coalition government resigned in the hope of reconciling the contending factions. Later that month, the Supreme Soviet, still dominated by hard-liners, met in emergency session in Khujand. They were anti reformists and aimed to select a new government which was favorable to their views. When the office of president was abolished, the speaker of parliament, Imomali Rahmonov, became de facto head of government. A thirty-eight-year-old former collective farm director, Rahmonov had little experience in government. Moreover, the office of prime minister went to Abdumalik Abdullojanov, a veteran hard-line politician. Thus, they shared the government powers in that way.

However, it did not mean that conflicts and distress was over. Once in possession of Dushanbe, the neo-Soviets stepped up repression. Three leading opposition figures, including Turajonzoda and the deputy prime minister in the coalition government, were charged with treason and forced into exile, and two other prominent opposition supporters were assassinated in December. There were mass arrests and charges. Then some of them experienced to summary executions of individuals who captured without formal arrest. Since early 1993, the ongoing armed insurgency of the opposition forces, in particular from across the Tajik-Afghan border, continued to destabilize the country. Fighting on a

smaller scale between the forces of the old guard and the opposition continued elsewhere in Tajikistan and across the border with Afghanistan into the mid-1990s.

The conflict in Tajikistan often was portrayed in Western news reports as occurring primarily among clans or regional cliques. Many different lines of were shaped by different issues, and both sides were divided over substantive political topics. However, the old guard had never reconciled itself to the reforms of the Gorbachev era (1985-91) or to any existing rule of the Soviet regime. Above all, the factions in this camp wanted to ensure for themselves a monopoly of the kinds of benefits enjoyed by the ruling elite under the Soviet system. The opposition coalition factions were divided over what form the new regime in Tajikistan should take. The alternatives were secular parliamentary democracy, nationalist reformism, or Islamicization. Adherents of the last option were themselves divided over the form and pace of change.

During 1993, although the worst fighting of the civil war has ended, there were still some turmoil between ethnic groups and people. Negotiations for a settlement continued for months, because, it was important to establish a safe place and political environment for some refugees and people returning from neighboring countries. The four major opposition parties, the Tajikistan Democratic Party, the Islamic Renaissance Party, Rastokhez, and Lal-i Badakhshan, have been banned, although they technically still hold seats in the Tajikistan parliament.

On the other hand, there was some interference from abroad. They were supplying material and political aid which increases the tension in Tajikistan. For example, Russia, and Uzbekistan and Kyrgyzstan are the countries which currently supporting the ex-communist Tajik government with troops and materiel. Afghanistan was responsible for this complicated condition and rebels in Gorno-Badakhshan region. A serious refugee problem had emerged in that respect. By September 1993, the Gorno-Badakhshan region had experienced the worst fighting on the Afghan border.[17] However, those violent movements and attack expanded in o short period of time and continued in other regions.

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[17] http://www1.umn.edu/humanrts/ins/tajiks94.pdf, Alert Seris Tajikistan Political Conditions in the Post-Soviet Era, 1993.

Human rights violations on ethnic, regional and political grounds appeared and gained pace throughout Tajikistan. Some incidents about murders, arrests, attacks and pretext disappearances of opposition party members, ethnic minorities, and some government supporters became wide popular. They were not rare unexpected circumstances any more. Media and people were used to come across those situations and hear about them in everyday life.

Democratization

In March 1993, a group of Tajiks who represented various regions, political movements came together in Moscow to conduct and discuss about the first conference of social dialogue. They have a target to finish the conflicts among groups. Therefore, they continued their meetings and set for themselves the goal of working for the end of violence in Tajikistan and to develop paths in order to achieve a united, secular and democratic Tajikistan. Moderators and participants in the Inter-Tajik dialogue had as their main goal to see if a group chosen from civil society could prepare the peace process for their country. Their goal was to help transform the conflicting relations into skills of cooperative constructive work without interfering in the conflict.

According to negotiators, peace talks should be started and then gain pace between the government and the opposition in order to reach positive consequences. Besides, they targeted to provide the return of refugees and their resettlement, the building of a social basis for the peace process and the conduct of a consulting forum of the peoples of Tajikistan. The integration of UTO (United Tajikistan Organization) armed forces and the cooperative action of adapting into a peaceful live of those who were part of the armed opposition should somehow be managed. Thus, they searched some ways to have it. For these reasons, there needed to follow some policies regarding those goals. They can be explained in such a way that the conduct of constitutional reform, the approval of legislation regarding the conduct of democratic multiparty elections, mutual forgiveness.[18] In addition to them, from social perspective, the formation and reinforcement of institutions of civil society becomes a necessary operation. Then, the development of

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[18] http://www.ca-politicaltransitions.com/Translations/Ashurboi%20Imomov-Inter-Tajik%20Dialogue.html

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systems of non-governmental organization should be supported for managing legal basis for results

The Inter-Tajik dialogue became the basis for the open exchange of opinions and the discussion of participants that pointing the more important problems of overcoming the inter-Tajik conflict and concluding peace and the building of a post-conflict society. At the sessions of the Inter-Tajik dialogue the most pressing problems were discussed while always anticipating events of social and political life of the country. Recommendations were reported to interested governmental organs and corresponding international organizations.

After the conclusion of the Inter-Tajik conflict, the dialogue concentrated on the solution of post-conflict construction of peace in Tajikistan. In its recommendations, they included and evaluated the social, economic and political situation in the country. However, they realized that there were still important problems such as the high level of unemployment, lack of regulation of labor migration, poverty and the lack of required support for social vulnerable strata of society. They faced to other obstacles too in terms of the reinforcement sectors, responsiveness of the administrative system of government, the tax policy. Because, this tax policy lacked support from social and economic principles and security guarantees.

For the result of this dialogue, in general it succeeded in influencing the peace process and transforming the relationships of dialogue participants from competitors to business partners and provided experience in cooperative constructive work.

After that peace summit, they could not solve all problems. Thus, some help was brought from outside. For that respect, in April 1994, peace talks arranged by the United Nations (UN) began between the post-civil war government in Dushanbe and members of the exiled opposition. Between that time and early 1996, six major rounds of talks were held in several different cities. Different states and organization witnessed that peace process in Tajikistan like Russian, UN, or other intermediaries. Mediators of the main rounds of talks were especially representatives of Russia, other Central Asian states, Iran, Pakistan, the

United States, the Conference on Security and Cooperation in Europe (CSCE, after 1994 the Organization for Security and Cooperation in Europe, OSCE), and the Organization of the Islamic Conference.[19] In the first two years, these negotiations produced few positive results. The most highlighted result was a cease-fire agreement that took effect in October 1994.

According to the first agreement results, it was renewed repeatedly into 1996. On the other hand, there had been various violations by both sides concerning the agreements. Neither of them implemented the decision in its way. Meanwhile, as a consequence of the cease fire, the UN established an observer mission in Tajikistan. The number of missioners was forty-three in early 1996.

Democracy Score Now

The President Imomali Rakhmanov kept on using its power over media and political environment before the elections in 2005 and 2006. He dominated and then limited the power of opposition parties. After his winning of elections, he regulated the system that he could be president until 2020 on paper. Besides, Corruption is reportedly pervasive throughout society. People try to benefit from government positions for their special interests. Tajikistan was ranked 133 out of 146 countries in Transparency International's 2004 Corruption Perceptions Index.[20] Moreover, the judiciary is heavily influenced by the executive branch; police frequently conduct arbitrary arrests and beat to extract confessions. , the state strictly controls freedom of association for organizations of a political nature.

According to the Tajik Center of Strategic Research, about 15 percent of the incomes of small and medium businesses go to bribery and payoff of officials. On the other hand, Child labor is seen particularly on cotton farms. Although women are employed throughout the government and the business world, they continue to face traditional societal discrimination. Thus, democracy score of Tajikistan reflects those consequences. It has the rate of 6 for political rights and 5 for civil liberties.

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[19] http://countrystudies.us/tajikistan/37.html
[20] http://www.freedomhouse.org/template.cfm?page=70&release=359

Economic Transition

Tajikistan was the country that also started to have economic changes especially in the last years of the Soviet system. Tajikistan followed the rest of the union in beginning a transition from the conventional Soviet centralized command system to a market economy. It can be called as transition to capitalist structures. Thus, Tajikistan formed new policies and institutions to maintain it. The civil war, however, prevented much of the legislation from coming into force. Early in 1991, privatization of state enterprises and leasing became legal by the government. But, there were some exception in certain industries especially military for national security purposes.

However, the transition came across with reactions. Because, special individuals were benefiting from that system so, reactions were understandable. They have access to economic power and technological know-how. Besides, political figures had risen with ideological objections to market reforms. They were advocating the old system which would be made efficient through a hard-working process. Then, people began to believe these provisions because of the sharp price increases that followed price decontrol in the beginning of a reform timeline. Therefore, it brought about some negative approaches to the market economy. People had concerns, fears and anger due to this huge economic shock and price increases. It can be seen as reaction too which resulted in a slow transition to a market economy. For instance, in the first year of independence, only four private firms were established.

The support for market economy could grow to a certain extent because of unpopularity. Even the regime of Imomali Rahmonov, who came to power in December 1992, showed little interest in continuing the limited market reforms of 1991 and 1992. At the same time, the new regime declared its advocacy for private enterprise on a small or moderate scale. They stated the hope that foreign investment would help to revive the country's minimal economy. Then, the numbers of private sectors began to multiply in a small period of time for instance by the mid-1990s.

In November 1995, the legislature approved a reform plan for the period 1995-2000.[21] However, the plan did not have any goals to attract neither foreign or domestic investment nor privatization. It was a significant lack of the plan. In 1992, Tajikistan got its first commercial bank, the Tajik bank business. It was designed primarily to invest in the republic's economy. It was established to replace the state-owned bank which was the former Soviet State Bank (Gosbank). It also tried to enhance the relationship between the United States, Iran, China, Pakistan, Saudi Arabia, and Britain, among other countries.

For the currency of Tajikistan, it continued to use the old Soviet ruble after the dissolution of the Soviet Union until Russia replaced that currency with the Russian ruble in 1994. At that time, Tajikistan joined the Russian ruble zone. However, it was a move that worked against Tajikistani interests. Russia was acting for its benefits accordingly. Thus, Russia did not send as many rubles as promised, and many of the new rubles that were sent quickly left Tajikistan. Inhabitants bought commodities from other Soviet successor states, especially Uzbekistan and Russia so that money was gone so rapidly. After that economy began handicapped for the reason that the cash economy often gave way to barter and promissory notes. As a result, the Dushanbe government decided to leave the ruble zone by introducing the Tajikistani ruble in 1995." At the time of its introduction, the new currency had an exchange rate of fifty per US$1, but its value slipped drastically through 1995, reaching 284 per US$1 in January 1996"[22].

The government has since prepared a new reform agenda, including measures to achieve macroeconomic stabilization. In July 2001, the IMF awarded the government fairly high marks for complying with the terms of its three-year (1998-2001) poverty reduction programme. They have taken US$8 million from the Fund against government's successful efforts to balance the fiscal deficit and reduce monetary growth. However, IMF officials, remain concerned about the slow pace of banking and agricultural sector reform. Thus, they warned the government in order to give priority to external debt reduction. It would be an indicator to a developing economic growth. For healing the economic condition, the World Bank has loaned the country US$50 million to for structural reforms aimed at

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[21] http://countrystudies.us/tajikistan/35.html
[22] http://countrystudies.us/tajikistan/35.html

improving the investment climate.[23] It is estimated that it would attract investment both from internal and external factors. Therefore, Tajikistan must continue to implement the 1997 peace agreement to achieve stability but in turn, the key precondition is new foreign investment.

RELATIONS WITH RUSSIA

The relations had started in the early 19th century with the expansion of tsarist Russia to Central Asia. Tajikistan shares no common border with Russia, but it involves the sizable Russian population which largely has abandoned the country. Because, after Tajikistan was established as independent republics, Russians turned back to their home country. Although, there is little in Tajikistan of commercial value to Russia, Russia was by far the largest financial supporter of Tajikistan, having extended the country loans of more than $200 million as early as 1993. Therefore, Russia has commitment to Tajikistan which has psychological, tactical and strategic dimensions.

Since the disintegration of the USSR in 1991, Tajikistan has experienced various economic dislocations, civil war, and post-war political, economic, and social downfall[24]. Thus, in a short period of time Tajikistan went from the status of a middle- income country to become one of the poorest countries in the world. However, during this same period, Russia maintained a substantial, continuous, and expensive military and diplomatic presence in Tajikistan.

From economic perspective, Tajikistan is rich in metal mineral resources and has vast hydroelectric potential, but mineral resources are plentiful in Russia and Tajikistan's hydroelectric energy is too far away to transport cost effectively. Tajikistan's largest commodity export, aluminum, competes with Russian domestic enterprises rather than offering complementary commercial possibilities.

Yet Russia's commitment to Tajikistan over the past decade may be described as unwavering. During this period Russia maintained as many as 25,000 troops in Tajikistan. Russia increased the level of assistance throughout the decade, with assistance eventually

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[23] http://www.nato-pa.int/default.Asp?SHORTCUT=249
[24] Comparative Strategy. Vol. 20, No. 1 (2001): 77-89.Why Russia is in Tajikistan? Gregory Gleason, pdf.

amounting to more that $288 million in 1998. It is significant that in November 1999 Tajikistan President Imomali Rahmonov announced that Russia was and will continue to be Tajikistan's most important "strategic partner".

When the Soviets established control, they brought the country under a single government but never fully succeeded in disestablishing traditional regional and clan-based loyalties. When the Soviets established control, they brought the country under a single government but never fully succeeded in disestablishing traditional regional and clan-based loyalties. During the civil war, in reality, however, Russia supported the Rahmonov coalition and used its presence in Tajikistan to influence the course of events. Russia was seemed to protect Tajikistan but, the Russian military, and many international donor organizations began applying diplomatic pressure to encourage the newly established Tajikistan government to develop a program of national reconciliation.

NOW

Moscow and Dushanbe agreed to "equal rights military cooperation". This means that from now on Russia will pay for its military base in Tajikistan. In turn, Russia will sell arms to Tajikistan at market prices and conduct military trainings for Tajik soldiers for a certain payment. The main reason for the visit was the signing of an act on the completion of the Sangtuda-1 hydropower station on the Vakhsh River in the south of Tajikistan with a capacity of 670 megawatts. The value of this joint project is estimated to around US$720-800 million and is owned to 75 percent by Russia and to 25 percent by Tajikistan.[25]

2. CONCLUSION

Tajikistan is a multicultural, multi-ethnic and subdivided country. It involves various groups which always results in trouble. Its' geography, historical background, people and colonization process play role for that situation. It has a problem of regionalization and clashes of cultures. For the strong effects of Clans, it could not move to democratization path easily. Besides, it has borders with Afghanistan and China so that U.S. and Russia tries to implement hegemony. Thus, they are the states that shape the international agenda.

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[25] http://www.neurope.eu/articles/Tajikistan-Russia-cooperate-in-several-spheres/97316.php#ixzz0aMLltY9j

However, the most important country had become Russia for about two centuries. The expansion of Russia towards Central Asia influenced Tajikistan in terms of economic, political and cultural life. Especially, after the fall of Soviet Union, Tajikistan had faced to economic decay that it is the poorest country between five Central Asian states. Moreover, Tajikistan fell into a bloody civil war and thousands of people were deaths. It could not have a political stability. Although Russia's historical behavior against Tajikistan, it is the most important strategic partner for Tajikistan.

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Women's Yesterday, Today and Tomorrow

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Abstract

In this paper, we studied women's position yesterday, today and tomorrow in terms of economic and political realm. Before all, we discussed gender-sex differences and how women are affected from gender roles in the social life. When we studied on the social, economic, political position of women in the past, we are helped by the literature. To talk about the current position, we tried to find current rates, investigations and surveys.

1. Gender

Firstly, we explain gender for perceiving women's roles in all spheres. Gender roles and responsibilities are committed to women and men at different cultures and geographies by society as masculine or feminine, but sex refers to the biological and physiological characteristics that define male and female. Although sex and gender have different meanings, these two concepts are used instead of each other. Women and men have different skills, behaviors; for example, men are generally interested in games which include violent, risks, aggressive acts. Another example; women tend to verbal ability but men have visuo-spatial skills (Bland, J., 2005). In fact; these different qualities and preferences are committed to men and women by society.

In the Universal Declaration of Human Rights, it is written that "all women and men have right to life, benefit from health, education and work rights without any discrimination",

but this sentence couldn't apply in the real world. I can say that its reason is related with gender because societies declare women as sentry of house, so they are isolated from outside world, but society committed some qualities to men as head of house, chief of working place and president. Therefore; men always have opportunities, advantages at any fields but women always have threats, disadvantages at all fields without house workings. However; men have some disadvantageous situations because society puts press on men and women, so men have some obligations; for example men do not cry; only men solve financial matters about their families and they do not explain their problems.

Some part of gender differences is based on biological differences. The most distinctive feature is fertility of women. Otherwise, men are more longer, stronger, and heavier than women. According to Eagly (1995), women and men have both biological and psychological differences and these cannot be changed (Akt. Buss, 1998). With these differences, women were obliged to house because in primitive societies, people thought that physical environment was not suitable for women so in primitive societies, women looked after, bring up baby and they worked for invisible works. Men brought food for children, women; and they protected them from dangerous situations. These differences led to be obliged to 'men of women', because physical environment were very dangerous and finding food was very difficult, these situations cause to be chief of men in society. At the beginning; division of labor emerged in respect of physical features of environment; but later physical features of environment changed but men did not want to give up presidency, own strong qualities so men tried to hamper formation of working life of women. In addition; at the start, division of labor between men and women appeared as fair but labor of women was visible as compulsory but employment of men appeared as kindness, that is; we see that division of labor created injustices especially at three fields; working life, community life, and family life between men and women. In working life; with the effects of economic globalization, women have more opportunities than previous own situation such as different jobs, workplaces, but then barriers occurred; for example, women have low payment than men and they work for secondary or assistant works because men always belong with senior positions (Lisa B. Meyer, Economic Globalization and Women's Status in the Labor Market) In addition; women have to get permission from their husbands for working. In community life; according to Aristotelian view; wife and

mother are women's roles, women have responsibilities of nurturing children and daily house works. American culture defines women as weak and men as strong, women cannot work as men; for example, they cannot become successful as policeman and firefighters because these jobs require strong and aggressive persons (Women Role in Society). In addition; societies have opinions about women, for example; women should not move out of house alone by night and they should not live alone or they should keep her virginity until they get married. In addition; society was thought that women should remain a step behind men. In family life; women should interested in house workings. In addition; if they exposed to violence from own husbands, they should keep secret this situation. Women should give birth to boys for rising own status. We can see these injustices conduct with figures. According to Evaluation of United Nations; women deal with 66% of total labor in the world but they have 10% of total income in the world. In addition; they have 1% of private property in the world. If we read figures in reverse, we see that men's income is equal to one tenth of women's income and they have 99% of private property in the world although they have lower performance than women.

I want to emphasize women's roles in family life with general perspective. The role given to women was to grow up children, to make housework and to respect men's hegemony. Women have restored their roles with the effect of changing world. Individualization movement has begun and they realized their equality with men from then on, women wanted to work which provides money and status, men rejected that demand for a long time and some men accepted but with conditions in respect of these; women should carry out own duties in house without lacking if they want to work in real working places but when women started working they had more disadvantages positions compared to the previous case because they work both in real work places and in house; so they were subjected to pressure from both sides; but now women are becoming aware of gender injustices, they demand real equalities in terms of opportunities, duties, wages, status anymore.

2. Women in Economic Life

Since the Stone Age, women have been the milestone of the economy. They had assisted to their husband and after years, they started to conduct to the budget and the revenue of their families. Some men can think that 'Women do not understand the economy and economical activities. 'But they are completely wrong. For many years, since the primitive communities, generally men have gained money and women have conducted this money and budget. It is the most important part of the economy. The conducting of money... After that, women started to take place in the economy in an active way. They started to participate in the working life. In past years, men see the women that; they are only working at home and it is easy rather than working in the outside. 'But they are still wrong. Because, anymore women has not only been working at home, but also they has been working outside actively. For many years, they had contributed to economy as unpaid such as housework. It is a really serious contribution to the economy although it is invisible. Women may not work in jobs that require very physical capacity, because they are naive creatures than men, but their intelligence is sufficient to conduct the jobs. Nowadays, women are the bosses, women are the managers, women are the business woman, and women are in any business life. For many years, there is a male hegemony in everything, everywhere; especially is in business life. However; it is no longer going on. Anymore, woman is not an object which is used for housework, washing, preparing meal, cleaning, bringing children up and so on. Now, even in newly developing countries, the portion of the women regarding contribution to the economy is growing day by day. As an Asian country, women have made a substantial contribution to Thailand's economic development. The female labor force participation rate has been consistently high at more than 60 percent for the past two decades, which is only about 20 percent lower than the male rate. Labor force participation rates in the 13-14, 15-19 and 20-24 age groups are significantly higher for women (ADB, 1998). Female production workers comprise between 70 and 90 percent of the labor force in Thailand's export industries. In fact, women who have worked and daughters who have worked have been a source of pride for their families for a long time. There are no fears that a woman's virtues are threatened by contacting with men in the workplace. Official labour force statistics classify employment

status according to five categories: employer, government employee, private employee, unpaid family worker, and self-employed worker (Hartmann *et al*, 2004). Women exceed men only in the category of unpaid family worker, which disguises the economic contribution of women to household enterprises such as farming, fishing, trading, and handicrafts. If the woman does not exist, the entity of the man will not mean anything in economic life, because the economic life also derives from labour division and a team working. It will not be a mean without each other. As increasing the education level of the women, the level of jobs of them also increased. And they started to take place in white – collar occupations (UNPAC, 2006). But women still account for a very small part of total employment in these occupations. And also, a decline in the fertility is related to working of women in outside and it made the number of children at home decrase also. As domestic labor for women decreases, they are able to spend more time in economic pursuits. Fertility rates have declined and are now approaching replacement level. The participation of women in business and economic life affected the people and families at a socio-economic level. Women adopted themselves to social life, economic life and may be political life. Because, especially in recent times; the economy represents a door which is opened through each area and level of life. The women should also express themselves and their opinions in economy. For example, the former president of TUSIAD (Association of Turkish Industry and Businessman) was Arzuhan Doğan Yalçındağ. Now, a woman is also Ümit Boyner. The role of women in economy in an active way can be seen obviously, thanks to it. The domination and hegemony of men in economic life is disappearing gradually. Most of men hesitate to make partnership and make economic activities together with women (Gilman, 1998). One of the major contributions that we all make to the economy is through buying things. Women's role as care givers has meant that women play an especially prominent role in buying things that provide subsistence for home and family. Studies show that women are responsible for buying 80% of household goods. Although it is often played down, it is clear that women have a great deal of influence in the economy as consumers, in other words, a lot of spending power (UNPAC, 2006). The buying power of the women should not also forget. In fact, women consist of the big proportion the market. Most of suppliers think about the demands of women especially to produce and supply the goods into the market. Clothing, cosmetic, make – up goods and so on consist of the nearly more than half of the market. And the passion of women of buying

and shopping. Most of the producers and suppliers have seen the women as a target masses. The economy revives thanks to women's buying, shopping. Nowadays, women started to make a really, seriously, professional job their hobbies. They started to make money from their hobbies. It is brilliant. In addition to this, it expended to foreign countries, they started to make export and import to foreign countries. It is a really success.

Women have taken place in economy sometimes paid, sometimes unpaid or as a consumer. However, there is an important point that; since taking place of women in economic life – whatever it means- the economy has revived and women have contributed to innumerable benefits to economic life. An economy without contribution of women cannot be thought and exist. The important role of women in economic life has been understood from every individual. The contribution is growing day by day and will grow. It will become paid, and unpaid works of women will not been forgotten. The woman is everything and the opportunity cost of women is nothing, especially in economic life and activities. The role of women in economic life is not a controversial issue. The revival of economy is tie to women and contribution of women.

3. Women in Political Life

In this part, I argue about the women's yesterday, today and tomorrow in political life. I mention about how active women participated to political life in history and women emperors even they were very little in number. And then, I tell about the efforts of the women's movement in respect to taking women's political rights and how the efforts concluded in practice and in theory.

It is obvious that woman emperors were very little in number in history. It is known that states' land was under the threats of other state. Therefore, men had a duty to protect the land of the country because he has the muscle power. That reality makes men more active in social life, in family life and- as a natural result- in political life. However, the position of queens is better than any woman in society. On the other hand, this is the consequence that could be got when it is compared and contrasted with women again. Even she is the queen, when we compared and contrasted with the king in related to administrative

competences. It is nearly impossible to realize any equality. I said 'nearly impossible' because there is an exception in history. In the Hittites (an Anatolian civilization lives in BC 2000), queens nearly had the same competences with kings. They had competence to behave individually as representative of the state. In the peace agreement signed after the Egypt and Hittite war, the queen's cachet can be seen in addition to the king's cachet. Yes, it is known that women had an effect on politics somehow, even as a legitimate, accepted representative or januis clausis.

In 19th century, women had relatively played more active role in economic realm with the effect of industrial revolution. Increased roles in economic realm can be thought as a trigger of the changes in social realm. The criticism by society for women who worked in factories was because of the idea that women's real place is house; the only appropriate role matched with women is to manage the house for her husband and to look after his children. Factories were blamed because it had a great effect on decreased control of parents over girls and later, on becoming careless mother and housewife and women's decreased obedience. Women's movement began in that years, in fact emerged as a reaction to women's exclusion from public realm. Its basic demand was to find a place for women i public realm which belongs to men. In the years ahead, women's movement directed its lead to political goals. First demands were primarily equal legal rights with men and rights to vote and to be elected. In some countries, getting the demanded conclusion took a long time; in some, getting the women's intensive and insistent effort didn't take long time.

Turkey gave that right to women in 1934.Women's movement had became one of the activist groups since the last term of Ottoman Empire. The interesting attempt was that women tried to found the Turkey's second political party in 1923.However; it was rejected because they had no right to vote even. When Turkey gave the right to vote for women, insistent efforts of Turkish women's movement had a great effect on that conclusion. The idea that women owe that right to republic, mostly given voice by political leaders, led women to become a dauntless worker of the republic rather from defender of woman right. Some political leader implied in their expression as if Turkey was one of the first countries in Europe that gave women political right. However, in those years, most of European

countries had already given that right to women. Even Russia and Bulgaria had gave that right, Iran and Greece would gave just little years after Turkey.

Women had got their political rights in theory, but it is obvious that theory and practice doesn't match. When we look at the rates of woman member of Turkish parliament, it is obvious that there is no serious change from the first years women got the political right to elections in 2002.The rate unfortunately remained in 4%.The number of women in current parliament is 48 at the rate of 9%.This is the highest rate in Turkey's history. It is clear that there is some blocs for women's political participation. It is traditionally accepted that public realm belongs to men. Women's state of belonging to public realm is not completely accepted. Although they play more active role in business life, they don't obtain equal share with men. The same in political life...Although they are half of the world population, they don't get equal seat in parliament. In addition to obstacle of traditional view; political culture and male-dominated structures of political parties are among causes. Women are assigned as a supporter of the leaders and volunteers in women's branches of political parties, rather than decision making mechanism. Merely when they are assigned in those tasks, they get acceptance in political life easily.

The effects of traditional values are determinative on women's life socially, economically and politically. If it goes on, there will be always a gap between the implementation and law. Today, women want to use these rights more actively, the rights they got in law but unfortunately not in practice. Despite half of the world population is woman, her representation in the parliaments are very low. What some proposes is quota in respect to positive discrimination-even this is an arguable issue among feminists.

Some argue that quota is agreeable according to Turkish constitution. They say that there is law which bans the every kind of discrimination against women. Therefore, to prevent women's isolation from political life, quota should be implemented. Some others believe that women's equal participation should be a natural process, we shouldn't interfere with quotas.

In the future, it can be thought that women participation to political life will increase. Women activists continue to their attempt for more woman member of parliament. It can be seen that women works for women's branches of their parties is increased. Women are more active also in civil society association. Society's perception of women gender roles are changing with the educated women of today. Male-dominated political life will probably continue for years because the society's perception on women's gender roles changes and society accepts women as political representative. The political participation of women will increase eventually It would be by quotas or as a natural process, but it will.