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EFFECTS OF FDI ON ECONOMIC GROWTH:

THE CASE OF TURKEY

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ABSTRACT

Several studies investigating the relationship between economic growth and foreign direct investment (FDI) show that FDI is becoming an essential instrument to enhance economic growth. Likewise, developing countries, in particular Turkey, are increasingly recognizing FDI as a source of development. This is reflected by the currently pursued economic policy reforms in Turkey. The reforms are explicitly intended to improve conditions to attract FDI and to maximize the benefits of the presence of FDI in the domestic economy. The government of Turkey has since the early 1980s become more liberal in its economic policies to attract more FDI so as to increase its economic growth.

The aim of this work is to assess the relationship between economic growth and a set of variables including FDI as the main factor of interest, human capital, a multiplication of FDI and human capital, inflation, fixed capital investment and trade openness, through a model that uses quarterly data for 1995-2010 period for Turkey. The methodology involved estimating Granger causality, cointegrating test, vector error correction model (VECM) and obtaining results from impulse response function and variance decomposition analysis. In order to benchmark the constructed model, a simple ordinary least squares method was performed as well.

Based on the analysis carried out, it was concluded that FDI inflows to Turkish economy has no significant effect on the economic growth of the country. The outcomes of the models and tests highlighted that fact that Turkey needs to invest on human capital in order to experience the positive effects of FDI inflows.

Keywords: Foreign Direct Investment, Economic Growth, Econometric Model, Turkey

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1   INTRODUCTION

As many countries started to leave their protectionist regimes with the beginning of 1970s and started to adopt more liberal policies, foreign presence in domestic markets started to increase on the globe. Less developed and developing countries constrained with limited fixed capital investments and which need to sustain economic growth to be able to provide higher life standards to their increasing populations commenced to benefit from this foreign incidence and liberalization, particularly through foreign direct investments (FDIs).

Several studies investigating the relationship between economic growth and FDI show that FDI is becoming an essential instrument to enhance economic growth. According to Organization for Economic Co-operation and Development (OECD) "FDI triggers technology spillovers, assists human capital formation, contributes to international trade integration, helps create a more competitive business environment and enhances enterprise development" (OECD, 2002). Therefore the competition among developing countries to attract FDI inflows becomes more intense and as Turkey is one of those, her position within this race is of interest. According to World Investment Report 2011, FDI flows to developing and transition economies accounted for 52% of 1.244 billion USD global FDI inflows in 2010, furthermore, this is also the first time in history that developing and transition economies had the lion's share from global FDI flows (UNCTAD, 2011). Taking into account Undersecretariat of Treasury of Turkey's economic growth numbers which indicate an 8,9% growth for 2010 as well, the extent to which works on the improvement of investment environment for FDI attraction were useful and the effect of attracted FDIs on economic growth is appealing as an area of research (Association of Treasury Controllers, 2011).

This work aims at scrutinizing the effects of FDIs on economic growth in Turkey through an econometric analysis together with a supporting theory and assessing the country's performance in attracting FDI. For this purpose, this dissertation consists of five main parts which can be sequenced as the introduction, theory on FDI and economic growth, Turkey's performance in attracting FDI, econometric analysis and the conclusion.

Following this introductory part, the second part will present the theory of FDI and economic growth for which the relation in between those will be provided with the intention of providing basic concepts that will be used in the following parts of the work.

The third part, being on the assessment of FDI attractiveness of Turkey, will include FDI's history in Turkey as a candidate for European Union (EU) accession, its sources and sectoral breakdown, as well as a benchmarking section with new and potential EU member states. The remaining sections in this part will comprise investigation of the factors affecting FDI inflows in Turkey in order to decide which are the strengths and weaknesses of the country in attracting FDI. A final heading in this section will be aimed at presenting the works on the improvement of investment environment.

With reference to the theory and findings in the previous parts, the fourth section will be intending to construct an econometric model to assess the relationship between FDI and growth taking into consideration other important variables. EViews 7.1 will be used as the supporting software to conduct Granger causality and cointegration tests, to build vector error correction model (VECM) and obtain results from impulse response function and variance decomposition analysis. Finally, in order to benchmark the constructed model, a simple ordinary least squares method will be provided.

Last but not least, through a short summary the final part will exhibit the conclusions about the work and findings obtained from the analyses. In addition to these, propositions on the improvement of the works concerning the relationship between FDI and economic growth will be provided as well.

2 FOREIGN DIRECT INVESTMENTS AND ECONOMIC GROWTH

2.1 Foreign Direct Investments

In this section, the fundamental concepts and theories which are mentioned in this work are explained with the aim of providing a clear understanding of the work done. First, FDI is defined and then its forms, the motives for undertaking it, the benefits and costs to the host and home countries are stated. Second, another important concept, economic growth is clarified by giving a definition and factors affecting it. Finally, these two concepts are put in relation in the third part of this section.

2.1.1 Foreign Direct Investment Definition

Foreign direct investment (FDI) had numerous definitions by different organizations yet here only IMF, UNCTAD and OECD definitions are given. Between these three definitions, OECD's benchmark definition is the most widely accepted in the literature.

IMF's Balance of Payments Manual defines FDI as "an investment that is made to acquire a lasting interest in an enterprise in an economy other than that of the investor, the investor's purpose being to have an effective voice in the management of the enterprise" (IMF, 1997). UNCTAD's definition of FDI in World Investment Report of 2000 is: "an investment involving a long-term relationship and reflecting a lasting interest and control of a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise, affiliate enterprise or foreign affiliate)" (UNCTAD, 2000). The keywords that are common in both of these definitions are long-term, control and lasting interest which differentiate FDI from other types of investments such as portfolio investment.

As highlighted before, the most widely accepted definition of FDI is OECD's benchmark definition provided in 2008 and that is as follows (OECD, 2008):

"Foreign direct investment reflects the objective of establishing a lasting interest by a resident enterprise in one economy (direct investor) in an enterprise (direct investment enterprise) that is resident in an economy other than that of the direct investor. The lasting interest implies the existence of a long-term relationship between the direct investor and the direct investment enterprise and a significant degree of influence on the management of the enterprise. The direct or indirect ownership of 10% or more of the voting power of an enterprise resident in one economy by an investor resident in another economy is evidence of such a relationship."

2.1.2 Forms of FDI

FDI can take two main forms, greenfield investments and mergers and acquisitions (M&As) for market entry purposes. The former, greenfield investment, is realized through the establishment of new operation in a foreign country. The latter involves acquiring or merging with an existing firm in a country other than the investor's.

Most of the FDI flows in the world between 1998 and 2006 took form of M&A according to UNCTAD's World Investment Reports and changed between 40 to 80 percent. However, this percentage decreases and is between 52 to21 percent in the period 2007-2010. It is possible to say that, after the boom of M&A with privatizations, there is a trend towards the greenfield investments that are generally undertaken with higher amounts (Calderon, Loazya, & L, 2004).

2.1.3 Motives for Undertaking FDI

An enterprise becomes a multinational when it decides to invest abroad, or in other words when it undertakes an FDI. Once it invests, then it is called a Multinational Enterprise (MNE). UNCTAD calls these types of organizations Transnational Corporations (TNCs) and define them as "incorporated or unincorporated enterprises comprising parent enterprises and their foreign affiliates. A parent enterprise is defined as an enterprise that controls assets of other entities in countries other than its home country, usually by owning a certain equity capital stake" (UNCTAD, 2011).

As the Narula and Dunning discusses, the motives for the MNEs to undertake FDI are four: resource seeking, market seeking, efficiency seeking and strategic asset seeking. The first three motives aim exploiting the assets of a foreign country while the last one is to protect or enhance existing assets (Narula & Dunning, 1996).

Resource-seeking FDI: Transnational corporations are being attracted by the abundance and convenience of production factors in other counties. Natural resources and human resources are the two main sources that motivate multinationals to invest especially in developing countries.

Market-seeking FDI: The economic determinants of this type of FDI include transportation costs, market size, specific consumer preferences and structure of market as well as access to other markets. Transnational corporations that undertake market-seeking FDI try to penetrate the host and neighboring countries.

Efficiency-seeking FDI: The main reason that pushes multinationals to go for an efficiency-seeking FDI is to access to suitable low-cost labor for labor-intensive production or skilled and educated people to make use of. By following this way, investing firm could gain competitiveness against its competitors.

Strategic asset-seeking FDI: A firm could also be tempted to invest if strategic assets such as technology and expertise are to be acquired and to be used to become a more competitive corporation.

A further point is that according to eclectic paradigm or OLI paradigm that are discussed by Dunning, a set of conditions or advantages must be present for a company to undertake FDI: Ownership (O), Location (L) and Internalization (I) (Dunning, 2000). The first of these three components, the ownership advantages of a firm with respect to those of other firms, motivate this investing firm to engage or increase their FDIs. This advantage could be obtained for instance thanks to technical knowledge or brand name. The second, the location advantages are the benefits such as immobile, natural or created endowments that can be used by the investing firm to prefer a foreign investment rather than a domestic one. The third component of the eclectic paradigm is the internalization that is as a firm sees more benefits on internalizing rather than licensing, it decides to engage or increase its FDI. As it will be explained in the latter parts of the work, for the example of Turkey, the strategic position she has on the world map and highly skilled and low cost labor that she provides the location factor is quite considerable.

2.1.4 Benefits and Costs of FDI

FDI can benefit home countries as well as host economies to a large extent. However, FDI may also bring about some downside risks. According to the UN`s World Investment Report 2006, the ultimate

outcome of the FDI on both economies is contingent on several factors such as economic and demographic structures of a country, development level of a country, invested industry, fiscal and trade policies of a country and how effectively home and host country policy interventions are designed and implemented (UNCTAD, 2006). In this section, benefits and costs of foreign direct investments will be explained from a theoretical perspective by considering firstly home (source of FDI) country and then host (FDI receiving) country.

2.1.4.1 Home Country Benefits and Costs
Benefits

Charles W. L. Hill. , in his book of Global Business Today, indicates that the main benefits of FDI to the home country arise from three sources (Hill, 2008). First, the inward flow of foreign earnings to home country improves the home country`s balance of payments. The balance of payment improvement from outward FDI may include demands created by the foreign subsidiary for home country exports of capital equipment, intermediate goods, complementary products and the like. Therefore, Benefits coming from balance of payments effect tend to be because of returning of earnings from outward FDI to the country of origin, home country

Second, benefits to the home country from outward FDI comes from positive employment effects which is the direct result of the demand created by the foreign subsidiary for home country exports. Thus, Fiat`s investment in auto assembly operations in Turkey has benefited both the Italian balance of payments position and employment in Italy because Fiat imports some component parts for its Turkey-based auto assembly operations directly from Italy.

Third, benefits of FDI to the home country also include benefits from reverse resource-transfer effect which arises when a foreign subsidiary of a home country learns valuable skills from host country that can be transferred back to the home economy. There are also some papers that specifies about reverse knowledge spillovers from enterprises in the host country to the MNE subsidiary, this can cause knowledge upgrading in MNE`s plants in the home country (Driffield & Love, 2003). MNE`s home country plant can rise the potential for skill and knowledge transfer to other home country enterprises as a result of the outward FDI.

Costs

Outward FDI from home country has been a problematic issue due to its adverse effects on home economy such as the adverse balance of payment and employment effects. Charles W. L. Hill. , in his book named Global Business Today, argues that home country's balance of payments may suffer in three ways due to outward FDI (Hill, 2008). First, the balance of payments experiences negative effect from the initial capital outflow that is required to finance the FDI. Second, the cost of the FDI to the current account of the balance of payments arises from serving the home market abroad from a low cost production location. Thus, people in the home market buy the exports of the country in which the FDI was made. Third, adverse balance of payment effect also arises if the FDI is a substitute for direct exports of home country. In this case, exports existing for source of a credit for the current account of a home country are disrupted.

In addition to adverse balance of payments effect, cost of FDI to home economy arises when FDI exports jobs abroad. This occurs when FDI is seen as a substitute for domestic production. There is a

supportive paper in agreement with the ideas of Charles W. L. Hill. about adverse of effects of FDI on home country which tells " There is some adverse effects on former suppliers in the home economy due to switching to new suppliers from the host economy" (Vahter & Masso, 2006). FDI creates job opportunities in host country, however, these created jobs tend to be due to jobs are being exported from home country.

2.1.4.2 Host Country Benefits and Costs
Benefits

According to OECD's Foreign Direct Investment for Development 2002 report; developing countries, emerging economies and countries in transition have come increasingly to see FDI as a source of economic development and modernization, income growth and employment (OECD, 2002). Countries have liberalized their FDI regimes and pursued other policies to attract foreign investments. As mentioned in OECD's report, Turkey as a member of OECD is also such a country which has a liberalized and growing economy over the last years intending to benefit from those inward FDI advantages.

Under an appropriate host country policy in a developing country, large number of studies shows that FDI initiates technology spillovers, helps human capital formation, and contributes to foreign trade integration, and assists to create more competitive business environment and increase the enterprise development. Final outcome of all these contributions of inward FDI to a developing host country will be higher economic growth with reduced poverty (OECD, 2002).

The main benefits of the inward FDI to host economy can be classified into four categories as resource transfer effects, employment effects, balance of payment effects and effects on competition and economic growth (Hill, 2008). Foreign direct investment can make a positive contribution to a host economy by supplying capital, technology and management resources and skills that would otherwise not be available and thus boost that country's growth rate (Lipsey, 2002).

In provision of capital respect, FDI can lead to increase in the inflow of stable financial resources available for investments in the host country. In order to finance their foreign investments, MNEs have more ability to borrow money from capital markets than host country enterprises would do for domestic investments.

With regard to technology transfer, a research indicates that the MNEs often transfer significant technology when they invest in a foreign country (Potterie & Lichtenberg, 2001). In addition as mentioned in the OECD's FDI for Development report 2002 , MNEs are the developed world's most important source of corporate research and development (R&D) activity, and they generally possess a higher level of technology than is available in developing host countries, so they have the potential to generate considerable technological spillovers (OECD, 2002). Nevertheless, a research group in Turkey argues that for the last fifty years, Turkey as a developing country decided to attract foreign capital has not been successful enough and thus has not taken the opportunity to improve its technology (Cestepe & Tuyluoglu, 2006). Therefore, according to these studies, if a developing country attracts enough FDI from MNEs, then it is possible to transfer technology to this developing host country.

Final remark for resource transfer effect, as for management resources supply, foreign management skills acquired through FDI may also produce important management benefits for the host country , for example by stimulus of superior management skills of MNEs on local suppliers, distributers and competitors to improve their own management skills (Hill, 2008). TNT Express as a MNE invested in Turkey in 1988 was the first logistic firm in Turkish market which owns an IIP Certificate (Investors in People Certificate) then in 2000 Ceva Logistics entered Turkish market with high standards in human resource management. By those HRM standards arise from FDI, many leading Turkish logistic firms have followed these high standards. In 2008 Borusan Logistic was the first domestic logistic firm in Turkey which deserved IIP Certificate (UTIKAD, 2010).

Job creation in host country is a result of FDI. Therefore, FDI is desirable for its potential to create jobs in host economies. In general, FDI inflows to developing countries have had positive effects on economic growth, job creation, and living standards of workers (Pei & Esch, 2004). Due to suffering from high and persistent rates of unemployment, Turkey also has redesigned her FDI policy in the early 2000s by further liberalizing the terms and conditions for FDI inflows and creating a more favorable investment climate in the country to benefit from positive employment effects of inward FDI (Hisarciklilar, Karakas, & Asici, 2009). Many of the studies on the employment effects of FDI on host economy shows that positive employment effects would be higher if the investment takes the form of greenfield investment. On the other hand, if foreign capital comes via M&As and buys privatized enterprises foreign investment will have a limited, even negative effect on the employment level of host country (Vergil & Ayas, 2009). Furthermore, some studies indicate that the effects of FDI on employment change from industry to another.

FDI's effect on country's balance of payment accounts is an important policy issue for most host economies. The impact of FDI on host country's foreign trade will differ, depending on its motive whether it is efficiency-seeking, market-seeking, resource-seeking or strategic asset-seeking. Efficiency-seeking FDI typically intends for export, and therefore the impact of such FDI is likely to be an increase in exports from host country in addition to the supply of inputs from local firms to these affiliates of MNEs. Market-seeking FDI can reduce a host country's imports if FDI results in local production that replaces imports. Resource-seeking FDI, almost by definition, results in export from host economy such as gas and oil extraction from developing economies. In developing countries, asset-seeking FDI is relatively unimportant motive for positive current account effect due to its general import rising effects if it is not an R&D investment (OECD, 2002). According to a UN's World Investment report 2002, inward FDI from MNEs to developing nations has been an important driver of export-led economic growth. For example, in Turkey exports increased from $36 billion in 2002 to more than $113 billion by 2010. Some of these dramatic export growths were due to the presence of foreign investments. In 2010, there were five foreign MNEs in Turkey's top ten exporters list and total contribution of these five MNEs to total export of Turkey was more than $10.7 billion in 2010.

Inward FDI to host countries can upgrade the competitiveness of the domestic firms. When a FDI increases the level of competition in a host economy then it may reduce the prices and then increase the consumers' economic welfare. The long term results of FDI may include increased productivity growth, product and process innovations and greater economic growth in domestic market (Ram & Zang, 2002). The effects of FDI on economic growth of host countries will be analyzed in detail in the following sections by considering the effects of FDI in Turkey's economic growth.

Costs

The costs of FDI to a host country arise from the adverse effects of competition, adverse effects of balance of payment and perceived as a loss of national sovereignty.

There is a risk that the entrance of a MNE in a developing host economy could result in creation of a dominant monopoly. The dominant monopoly of a foreign MNE could raise the prices and could harm the economic welfare of the host country. In many developing nations like Turkey have domestic competition authorities (Rekabet Kurumu: Turkish Competition Authority) can review and block any FDI especially in the form of M&A which has potential to hazardous impact on competition in the domestic market.

The possible adverse effects of FDI on host country's balance of payments position can be classified in two categories. First, after initial inflow of capital with FDI, subsequent outflow of capital from earnings of FDI could damage the balance of payment accounts of host country. Some governments have reacted to such capital outflows by limiting the amount of earnings that can be transferred source country of FDI. Second, FDI may import large amount of inputs from abroad which results in a debit on the current account of the host country's balance of payments. In order to overcome this adverse effect, host country could force MNEs to purchase many components from domestic market (Hill, 2008).

The presence of MNE in a host country often leads to a concern to an economic domination and loss of national independence. Especially, FDI triggers certain risks when it takes over controlling of infrastructure industries like telecommunications. After Oger Telecoms' (Saudi Arabian telecommunication group) acquisition of Turk Telekom's (Turkey's telecommunication leader) 55% shares by privatization in 2005, there have been still ongoing arguments and concerns among Turkish citizens about loss of national sovereignty.

2.2 Economic Growth

2.2.1 Definition of Economic Growth

Economic growth, as it is the case for FDI, has many different definitions provided by different organizations and people. These definitions also vary according to the work that will be done by these above mentioned. Generally speaking, as World Bank defines it, economic growth is a "quantitative change or expansion in a country's economy" (World Bank, 2011). It is usually calculated as the increase in GDP or GNP during one year and it has two forms. The former is extensive growth which is obtained by making use of more resources (e.g. physical, human, or natural capital), and the latter, intensive growth, takes place via a more efficient production (maintaining the same level of resources).

Intensive economic growth necessitates economic development which is defined again by World Bank as the "qualitative change and restructuring in a country's economy in connection with technological progress". Economic development is measured through an increase in GNP per capita (or GDP per capita) which is also a sign of the "economic productivity and average wellbeing" of a country.

Here are GDP and GNP formulae:

GDP = private consumption + gross investment + government spending + (exports – imports)

GNP= GDP -income earned within the domestic economy by overseas residents + income earned from overseas investments by residents

2.2.2 Factors Affecting Economic Growth in Developing Countries

Looking through a general perspective, it is possible to analyze the factors affecting the economic growth with two approaches: Keynesian and market-based approaches. The following first two headings are related to the Keynesian approach whilst the latter two to the market-based approach.

2.2.2.1 Savings and Investment

For growth to occur, the level of investments must be higher than that of depreciation. As the difference between these two increases, the potential output of the economy is supposed to be greater. Clearly, an investment necessitates a certain amount of resources and savings in a country is one of them. According to Goff, even though a higher rate of savings triggers GDP growth, R&D and education and skills of the workers should be examined as well (Goff, 2003). He further underlines that saving funds have to be invested by right people, in other words by the investors that are aware of the market conditions and are capable of taking the necessary risks for accomplishment. Another point highlighted by this author is that the level of savings cannot be considered independently from the current income level and that people with low income are less prone to save and the prospect of growth negatively affects this tendency to save. Thus, the people who are going to make use of the money that is saved is to be selected in an appropriate way to ensure that these funds are not wasted but they serve to obtain a growth in the economy of that country.

2.2.2.2 Government-Financed Investment

A developing country, in order to attract more investments, must provide a well maintained and structured infrastructure. To be clearer, as this is the case in the example of China provided by Hill, a United States company, PepsiCo, had difficulties reaching customers due to the lack of transportation infrastructure or distribution system in Chongqing (Hill, 2008). According to this same article, with the aim of not losing the potential investors attention, the Chinese government decided to invest an 800 billion USD in infrastructure projects and mainly in highway network for a period of 10 years (2005-2015). Therefore government should finance investments such as infrastructural ones that would facilitate and enhance further investments, increasing productivity and resulting in economic growth.

2.2.2.3 Macroeconomic Stability

Macroeconomic stability is one of the key conditions needed to be present in a decision environment for an investment as it affects the risk of the investment both for the investors from that country or from another country. Higher stability reduces the risk of investment, lower risks yield more investments and finally economic growth. Goff discusses this factor to be particularly considerable for developing countries as foreign direct investments are the most reliable sources of investments for these countries (Goff, 2003).

2.2.2.4 *Trade Liberalization, Capital Mobility and Exchange Rate Policy*

Removal of trade barriers and a trend towards free trade supports a higher level of consumption by widening markets and, as Goff declares, by allowing economies of scale in exporting industries (Goff, 2003). This author also underlines that foreign direct investments can be encouraged via the elimination of restrictions on foreign capital flows. Through the appropriate adjustment of exchange rate, exporters can compete in international market and foreigners can invest although that poses a problem for small and weak enterprises in that country.

2.3 Relation Between FDI and Economic Growth

2.3.1 Effects of FDI on Economic Growth

Most countries are employing effort to attract FDI because of its recognized benefits as a tool of economic development. The economic explanation for offering special incentives to attract FDI generally rises from the belief that foreign investment produces externalities in the form of technology transfer and spillovers (Carkovic & Levine, University of Minnesota Working Paper, 2002). However, researches and studies provide conflicting predictions concerning the growth effects of FDI. These different predictions derive from the role of FDI which seems to be country specific, and can be positive, negative or insignificant, depending on the economic, institutional and technological conditions in the host country (Ayanwale, 2007).

Blomstrom, Lipsey and Zegan indicate that FDI shows a positive effect on economic growth but that there seems to a threshold level of income above which FDI has positive effect on economic growth (Blomstrom, Lipsey, & Zegan, 1994). Here, it is emphasized that those countries which have reached a certain income level can absorb new technologies and gather the advantages that FDI offers, thus positive effect of FDI on economic growth is confined to higher income developing countries. Moreover, according to De Mello, the larger the technological gap between the host and the home country of FDI, the smaller the impact of FDI on economic growth (1997).

Human capital is also one of the factors that lead to various responses to FDI at different levels of income. Borensztein suggests that countries may need a minimum threshold level of human capital in order to experience positive effects of FDI, such as economic growth which is directly affected from the interaction between FDI and human capital (1998). The result is that well educated people in a host country can spread the positive effects of FDI to the entire economy.

Several empirical studies indicate that the growth effect of FDI is strongly dependent on the institutional circumstances of the host or receiving countries (Hermes & Lensink, 2003). Therefore, the economic and political stability of a host country, trade agreements and unions, legal environment and macroeconomic conditions of a host country directly affect the level of growth effect of FDI.

Also according to the UN's Transnational Corporations report in 2004, the growth impact of FDI depends on the characteristics of the developing country in which FDI take place. In the same report it is also emphasized that the hot countries' capacity to absorb FDI productively is linked to GDP per capita. As mentioned in previous studies, host economies with better endowment of human capital are supposed to benefit more from FDI induced technology transfers, as spillovers from foreign affiliates to local firms are more likely. Industry characteristics such as technology intensity, factor

requirements, linkages to local and foreign markets, and the degree of vertical integration of foreign affiliates are likely to shape the growth impact of FDI in various ways (UNCTAD, 2004).

On the other hand, neoclassical economists argue that FDI affects economic growth by increasing the amount of capital per person. Nevertheless, because of diminishing returns to capital, it cannot provide long-run economic growth. About this issue, a study asserts that even if FDI is positively correlated with economic growth, host economies need to have minimum human capital, economic stability and liberalized markets in order to have long-run growth and advantages from FDI inflows ((Bengos & Sanchez-Robles, 2003). Finally, a study of Alfaro suggests that FDI is associated with faster growth only in host economies with comparatively well developed financial markets (2002).

In conclusion, before being able to benefit from FDI inflow, FDI inflow may be positively associated with economic growth only when countries have previously obtained a certain level of economic development, education, financial development, political stability, technology and infrastructure.

2.3.2   FDI and Growth in Turkey

As stated in Kokcu's study most of the inward FDIs to Turkey are not inclined to manufacturing industry. In other words, inward FDI to Turkish economy is not occurred as the expectations of such developing economy in need of a production. While some previous FDIs to Turkey are mostly concentrated on finance and banking sector, others are shifting to service industry. Communication and finance sectors stand out where FDIs are concentrated recently. In this respect, it is observed that the tendency which is value added is not attracting the FDI in Turkey, instead the tendency which is shifting the domestic value added to outside of the country is attracting the FDI in Turkey. The analysis of Kokcu based on this idea with present data results that the effects of current inward FDI on economic growth of Turkey is not substantial (Kokcu, 2007).

In addition, Kokcu also indicates that the human capital of Turkey is not qualified enough to experience positive growth effects of inward FDI and absorb new technologies. Due to low level of human capital, difficulties to keeping high quality human capital in Turkey and not employing sufficient human capital in FDIs; the human capital of Turkey has negative effects on favorable impacts of FDI. In Turkey, insufficient human capital investments and underdeveloped policies that supports human capital investments damage the economic growth effect of FDI (Kokcu, 2007).

The types of the inward FDI to Turkey are also controversial. Most of the inward FDIs to Turkish economy have been occurred as the types of privatization and merge & acquisitions. Furthermore, FDIs are mostly occurred in service industry. According to the Pirler, the answer of why most of the FDIs in Turkey are observed as M&As is about the cultural and corporate characteristics of Turkey, economic and political instability in Turkey and the present and future risks it has (Pirler, 2007). Therefore, the observed types of the inward FDIs to Turkey limit the positive macroeconomic impacts of FDI such as effects on economic growth of the country. However, it can be concluded that the recent positive economic growth performance of Turkey is also supported by the contributions of the inward FDI.

Aras argues that there has been positive impact of inward FDI to Turkey on Turkish GDP growth. Turkey needs to attract more foreign investors in order to reach the developed nations. The most reliable foreign resource is the FDIs to support economic growth (Aras, 2011). Akinci also specifies

that according to his analysis he found out that inward FDIs to Turkey have assisted the economic growth of Turkey after the liberalized economy from 1980 to 2008 (Akinci, 2009).

3 TURKEY'S PERFORMANCE IN ATTRACTING FOREIGN DIRECT INVESTMENTS

3.1 Turkey's FDI Performance Over Time

3.1.1 Historical Perspective

3.1.1.1 1923-1980

After the establishment of Turkish Republic in 1923, Izmir Economic Congress was held in order to emphasize the importance of economic development for the Turkey, as the country had been destroyed economically by years of war. Early Turkish economic policy was articulated at this congress. This congress also was the first step to allow foreign capital in Turkish economy. In this congress it was declared that Turkey was open to FDI as long as it respected the country's laws, accepted national treatment without seeking extraterritorial privileges, and yielded mutual gains.

Between 1923 and 1929, the Turkish economy was restructured. Due to nationalization of several FDI firms serving in public sectors, with fair compensation, many FDI firms stand away to invest in Turkey during this period. However, some FDI firms came into existence benefiting from the Law for the Encouragement of Industry enacted in 1927. The first FDI in manufacturing sector after the foundation of the Turkish Republic was initiated by Nestle to manufacture chocolate. In the period of 1923 and 1929 even with economic liberalism and full currency convertibility, the Treaty of Lausanne and the Great Depression restrained the Turkish Republic's trade policies. It can be concluded that FDI did not play an important role during this early periods of Turkish Republic (Erdilek, 2005).

During 1930-1939, FDI was not encouraged in Turkey. The Law 1567 for the Protection of the Value of Turkish Currency ended the currency convertibility and this law also marked the end of economic liberalism and beginning of increasing government intervention in the Turkish economy. The government kept nationalizing many foreign investments during this period, especially the foreign firms serving on strategic industries such as transportation, energy, telecommunication and mining industries. Limited numbers of foreign firms invested in Turkey between 1930 and 1939 due to highly intervened economy by the government based on statism (or estatism) policy. In addition, because of ongoing negative effects of Great Depression and the World War II (a global military conflict lasting from 1939 to 1945, which involved most of the world's nations), FDI was radically decreased in Turkey during this time frame as experienced in the entire world economy. After World War II, which did not allow for FDI activity, Turkey began to ally itself with the Western countries which lead to significant consequences for FDI. About the aspect of Turkish economy from 1930 to 1950, Yavan indicates that Turkey was not able to attract significant amount of FDI due to global recession in the world economy in 1930s, World War II, the government interventions, nationalization of some foreign firms and restrictive policies (Yavan, 2006).

Law 5583 enacted in 1950 was first law under the Turkish Republic which addresses the issue of FDI. This law guaranteed profit transfer but under very restrictive conditions. In subsequent years, this law replaced with other ones till 1953 but still Turkish economy did not indicate an entirely welcoming attitude toward FDI. Then more liberal laws to attract FDI continued to enact in 1950s. The history of FDI in Turkey begins in 1954. The Foreign Capital Law, enacted in 1954, is the first legislation in real terms governing foreign investments to Turkey. This law remained in force until the late 1980s and allowed utilization of foreign capital for all sectors open to local private capital (Kepenek & Yenturk, 2003). Until 1954, total FDI stock in Turkish economy was only $2.8 million

(Table 1). As Onis mentioned, although this early legislation provided a liberal framework designed to create a favorable environment for FDI, the cumulative authorized FDI reached only $229 million from 1950 to 1979 (Onis, 2004) as seen in Table 1. These laws and regulations aimed to decrease state intervention and support free market economy in Turkey. In spite of those laws, Turkish economy became increasingly unstable and thus did not attract much FDI in mid 1950s. During 1958-1960, under the economic stabilization program designed by the IMF and the OECD, the Turkish economy was still too risky for new FDI. Some existing FDI firms, however, took advantage of the abnormal conditions of the late 1950s, characterized by price controls and shortages of basic goods, to earn extraordinary profits, which started the hostility toward FDI in Turkey.

At the end of 1960, during which the Turkish military took over the government resulted in decrease of the inward FDI to Turkey, only $1.9 million FDI entered to economy and the cumulative total FDI stock was $17.3 million (Table 1). After military intervention finished, from 1963 to 1967 a planned economic development plan under First Five-Year Development Plan was executed by the Turkish government which lead to increase in FDI inflows and the total FDI stock became $69.4 million at the end of 1969. The goal of first economic plan was to support economic growth of the country and reduce balance of payments deficit. Second Five-Year Development Plan was executed in 1968 and continued to 1972. The aim of this second economic development plan was to experience positive spillover effects of FDI as technology transfer and productivity increase. During this period, foreign firms were encouraged with some incentives to invest in Turkey. This second economic development plan was resulted in $130 million (Table 1) FDI stock and increase of about $60 million of inward FDI flow compared to 1968 FDI stock. During the Third Five-Year Development plan between 1973 and 1977, due to the low balance of payment deficit, the government did not provide significant incentives to foreign investors. Even, it was observed negative FDI inflow which was about $-7.7 million (Table 1) in 1974 because of the government's less focus on attracting FDI. After the third economic development plan, the FDI stock increased to $223 million (Table 1). The last economic development plan was established in 1979 which gives the most importance to attract FDI but the highly unstable political environment of Turkey did not let the economy to experience positive effects of this plan in its early stages. Furthermore, in 1979 negative FDI inflow to Turkey was occurred.

During much of the 1960s and 1970s, however, Turkey actually lacked the political and economic stability to provide a secure environment for FDI. The period 1974-1979 also witnessed rising political instability and widespread violence between political factions and ideologies, which dramatically worsened the environment for FDI. During this period of 1960-1979, FDI inflows totaled $211 million, bringing the cumulative total FDI stock to $228.1 (Table 1) at the end of 1979. According to statistics, level of FDI was low in the pre-1980 period. Erdilek mentioned as it is thought that this low level of FDI was due to restrictive bureaucratic practices (Erdilek, 1982). According to Aksoy, besides these restrictions, another possible reason is that as a consequence of the import substitution industrialization strategy, Turkey was a relatively closed market to foreign companies until 1980. Turkey had to abandon this strategy after the severe balance of payments crisis in 1979 (Aksoy, 2008).This period ended with the January 1980 economic reforms that pioneered in a new era of globalization based on export-promotion with a great potential for FDI.

FDI INFLOW AND STOCK IN TURKEY
(1954-1980, USD ($) Million)

YEAR	FDI INFLOW ($)	FDI STOCK ($)
Before 1954	2,8	2,8
1954	2,2	5
1955	1,2	6,2
1956	3,4	9,6
1957	1,3	10,9
1958	1,1	12
1959	3,4	15,4
1960	1,9	17,3
1961	1,2	18,5
1962	4,2	22,7
1963	4,5	27,2
1964	11,9	39,1
1965	11,6	50,7
1966	9,7	60,4
1967	9	69,4
1968	13,9	83,3
1969	13,2	96,5
1970	9	105,5
1971	11,7	117,2
1972	12,8	130
1973	67,3	197,3
1974	-7,7	189,6
1975	15,1	204,7
1976	8,9	213,6
1977	9,2	222,8
1978	11,7	234,5
1979	-6,4	228,1
1980	97	325,1

Table 1 - Foreign Direct Investment in Turkey between 1954 and 1980. Undersecretariat of Treasury and Central Bank of Republic of Turkey (Central Bank)

3.1.1.2   1980-1999

At the begging of the year 1980, on 24th of January, important decisions that influenced the FDI prospects of Turkey had been taken. Turkey, besides Japan, Australia and New Zealand was the fourth country to reduce trade barriers within the 24 OECD countries (Wade, 1996). These decisions of 24th of January were taken with the aim of promoting economic growth through export-oriented economic liberalization. As Loewendahl, Yavan and many other authors discuss, it was after this shift in the trade regime that Turkey started to attract more FDIs and benefit more from these FDIs.

Even though in 1954 a very liberally prepared law concerning foreign investment was in effect, as Yavan highlights, until 1980s no significant FDIs were undertaken towards Turkey (Yavan, 2006). Yavan further implies that liberalizing the economic environment is not the only condition to be satisfied in attracting FDIs; a more open political approach, an investment climate with more

confidence, abolishment of bureaucratic obstacles, in other words, giving and leaving the decisions and procedures to the investors augmented the foreign investments.

In order to understand the pattern of the FDI flows to Turkey, general trends and investment climate of this period of 1980-1999 must be mentioned as well. Saray makes points about this period after his analysis of information from UNCTAD (1993) and the work of Amirahmadi and Wu (1994) saying that after 1980s FDI flows were greater all around the globe. He claims that this is because developing countries started to abandon protectionist regimes that did not promote foreign investments. Another reason of the global increase of FDI flows according to the author is that the successes of newly industrializing countries with export-oriented economic liberalization were good examples that motivated other countries to adopt similar policies. A further point is that some currencies such as Japanese yen appreciated and as a result more FDI flows were possible from the owner of such currencies (Saray, 2007).

The Figure 1 shows the FDI flows (approved and realized) per annum for the period 1980-1999. With reference to the figure, it is possible to say that FDI flows to Turkey incremented gradually until 1990 and then in the 1990s this increase was higher than the previous decade even though there are some sharp falls in 1994 and 1997. In other words, an FDI inflow of 35 million USD in 1980 increased steadily until 1993, reaching 2 billion USD which had undergone a sharp fall of 28.4%, to 1.4 billion USD. 1995 and 1996 were the years with highest inflows of this decade, 2.9 and 3.8 billion USD with their respective order. The next year, 1997 witnessed another sharp fall of 56.2% and then maintained 1.6 billion level till the end of 1990s. Loewendahl highlights that during 1990s, global FDI flows grew rapidly yet FDI in Turkey remained "static".
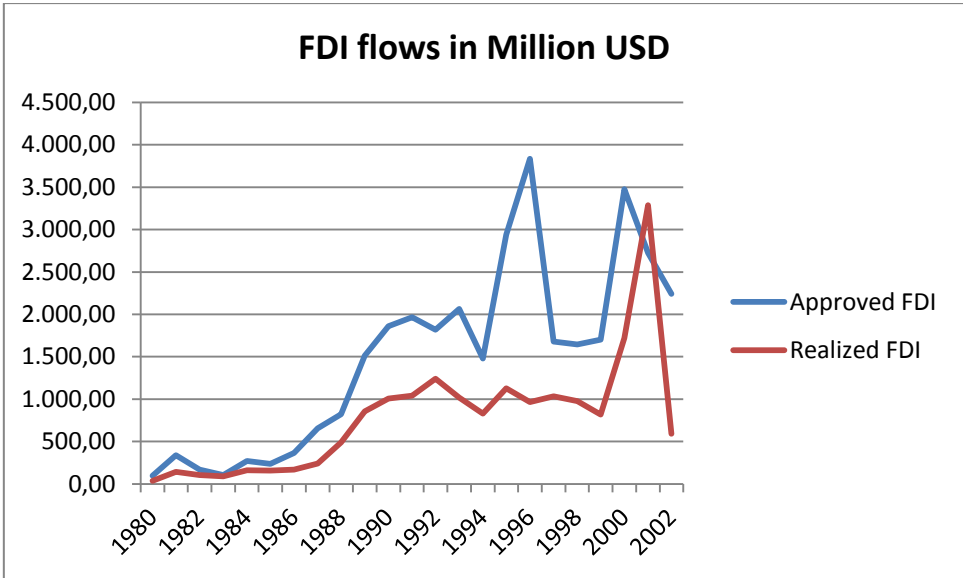
Figure 1 - FDI flows in Turkey 1980-2002, (Ministry of Economy, 2011)

Another point that can be made from this figure is that there is a certain difference between approved and realized FDIs. Here, approved FDI means that investors declared that they were going to invest and realized FDI indicates the amount they really invested. According to Yavan, the difference between approved and realized FDIs during this 20 year period is mainly due to two reasons. First, investing firms could not complete their investments during the year of the approval; therefore physical investments were realized with delay. Second, the investors totally abandon their

decision of investment (Yavan, 2006). For the 1980-1999 period, realized FDI follows approved FDI's pattern with exceptions in years 1995-1997. Loewendahls state that during 1995-1997, a customs union between Turkey and EU was established however the investors' expectations were not in line with what Turkish government and the investment climate in this country offered (Loewendahl & Ertugal-Loewendahl, 2001). Therefore Turkey could not make use of the interest shown by investing countries.

A further deduction from figure x is that Turkish economy was hardly hit by the crisis that she went through during the 1990s. In his work, Yavan indicates that crisis of 1994 in Turkey and global crisis of 1997-1999 (Southeastern Asia, Russia and Latin America) caused the firms to postpone or relinquish their decisions of taking investment permissions in Turkey (Yavan, 2006). However, Turkey continued to receive FDI flows with a steady trend until the end of 1999, becoming less vulnerable to crisis. Therefore, it can be said that Turkey could not receive as much as she could from the huge interests shown to her, however considering local and global crisis hitting the country, Turkey managed to receive flows with an increasing amount.

3.1.1.3   2000-2010
Maintaining the positive trend at the end of the 1990s, Turkey managed to be much more attractive to foreign investments than before, increasing FDI inflows considerably during 2000s. In 2000, Turkish economy started to grow (6.1%) and realized FDI reached 1.7 billion USD while approved FDI was more than 3.7 billion USD (Yavan, 2006). However, just one year later, in 2001, the biggest crisis in Turkey's history caused a decrease in FDI flows, even though this decrease was not sudden and realized FDI exceeded for the first time approved FDI. This was mainly due to the extension and delays in the auction of a GSM company (Osmanov, 2008). By 2001, some changes in the definition of FDI had been made by the GDFI (General Dictorate of Foreign Investment – Undersecretariat of Treasury) to ensure the conformity with OECD's FDI definition. Yavan highlights that the realized FDI in previous case would be about 1.4 billion USD worse than the one after the change in the definition that would be 1.8 billion USD instead of 3.2 billion.

2002 and 2003 were the years in which Turkey was trying to recover from the effects of the 2001 crisis. In 2002, due to economic crisis and due to low credit rating that Turkey had, there was a descending appearance in FDI flows (Osmanov, 2008). Though, in the mid 2003, FDI law in Turkey was once more modified, to extend the rights of foreigners within Turkish borders. With the change in the law, the need for the investors to obtain approval from Undersecretariat of Treasury was abolished, thus data concerning "approved FDI" is no more gathered or stored. Thanks to the change in FDI law, the following years witnessed a dramatic rise in the FDI flows. As it can be also seen from Figure 2, FDI flows of year 2003 were about 1 billion USD, increasing up to 2.8 billion in 2004, and in 2005 it becomes about 3.5 times the 2004's, 9.8 billion USD. Next years were even better for the country; Turkey enjoyed a 20 and 22 billion USD inflow in 2006 and 2007 respectively, reaching the highest level of investment in her history. A remark that can be made taking into account Osmanov's study, after the beginning of 2000s, FDI flows took form of M&As rather than greenfield investments, and thanks to privatization and M&As, in 2005 and 2006 a considerable augmentation in FDI flows were observed (2008). Here it is also to say that most of these inflows were through M&As which accounted a 75% of total FDI flows and is at similar level to global rate of M&As, 78% (Saray, 2007). According to Saray, positive changes on macroeconomic indicators such as inflation and interest

rates, structural reforms towards the amelioration of investment environment and the accession trial of Turkey to EU affected in a positive way as well; augmenting FDI flow.

Still, these relatively successful years were hit with the global crisis that started to spread from US to the rest of the globe at the end of the year 2008. In 2008, FDI flows were about 19.5 billion USD which than stridently fall down to 8.4 billion in 2009. According to the data from the Undersecretariat of Treasury, 9 billion USD of investment were realized in Turkey in 2010. It is further announced that M&As accounted for 35.8% of total FDI flows in 2010 which is a rate much lower than that of 2005-2007 period. International Direct Investment report of 2010 of the same entity states that according to IIF (Institute of International Finance), in 2011, about 12% greater FDI flows to developing countries, and about 36% of greater FDI flows to the developing countries in Europe to which Turkey is included are being expected. To sum, Turkey is recovering from her wounds that were caused by local crisis of 2001 and global crisis of 2009 by increasing the prospects of investment within the country borders through new FDI laws.
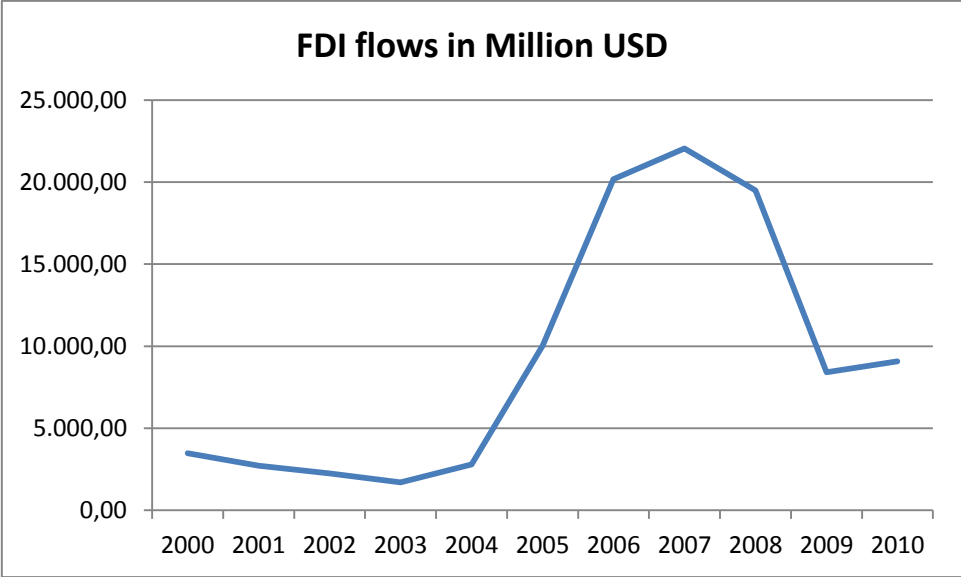
Figure 2 - FDI flows in Turkey 2000-2010 Ministry of Economy

3.1.2 Main Sources of FDI by Country Groups

Turkey has attracted the highest amount of FDI from EU member countries, Asian and Middle Eastern countries in the period of 2005-2010. As shown in Table 2 considering the distribution of FDI inflow to Turkey by country, the highest percentage of inward FDI was originated from the EU member countries between 2005 and 2010. Asian countries appeared in the second place during the same period of time. Due to the global economic crisis, dramatic decrease of FDI inflow to Turkey was observed while transition from 2008 to 2009. In addition, there was an increase in FDI flow from Northern America countries to Turkey in 2007. FDI inflow of $4,8 billion from EU member states constituted the 76,1% of the entire inward FDI to Turkish economy in 2010.

FDI INFLOW TO TURKEY BY COUNTRY						
					USD ($) MILLION	
COUNTRY	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
European Union	5.006	14.489	12.601	11.076	4.927	4.762
Germany	391	357	954	1.237	497	498
France	2.107	439	367	679	617	589
Netherlands	383	5.069	5.442	1.343	718	501
United Kingdom	166	628	703	1.335	350	233
Italy	692	189	74	249	314	*54*
Other European Union Countries	1.267	7.807	5.061	6.233	2.431	2.887
Other European Countries (Excluding EU)	1.646	85	373	291	305	243
Africa	3	21	5	82	2	0
USA	88	848	4.212	868	260	318
Canada	26	121	11	23	52	56
Central-South America and Caribbean	8	33	494	60	19	5
Asia	1.756	1.927	1.405	2.345	673	873
Near and Middle Eastern Countries	1.678	1.910	608	2.184	361	*437*
Gulf Arabian Countries	1.675	1.783	311	1.963	209	371
Other Near and Middle Eastern Countries	2	3	196	96	78	16
Other Asian Countries	78	17	797	161	312	435
Other Countries	2	115	36	2	12	3
*Total**	8.535	17.639	19.137	14.747	6.250	6.260

**Intra Company loans that companies with foreign capital are given by foreign partners and real estate purchases by natural persons are not included.

Table 2 - FDI Inflow to Turkey by Country (2005-2010), Central Bank of Republic of Turkey

In 2010, the leading ten investor countries were the Austria, France, Germany, Netherlands, Greece, Japan, USA, Luxembourg, United Kingdom and Spain in terms of FDI inflows from those countries to Turkey (Table 3). Between 2002 and 2010, the three leading countries were the Netherlands, USA and Greece which are also in the top ten investors' list in 2010 (Table 3). If the 2002-2010 period is analyzed, then it can be concluded that the recent leading investor countries' profile in Turkey has not changed because eight leading countries according to their investments in Turkey in 2010 are also in the list of most invested countries in Turkey in the period of 2002-2010.

EU member states are the main origins of the FDI inflows in Turkey over the last decade. Austrian firms highly invested in energy sector in Turkey as observed in 2010 and 65 Austrian firms invested in 2010 in the types of greenfield and M&A. French firms mostly invested in manufacturing industries and finance sector. There were 88 French companies invested in Turkey in 2010. In Turkey many German firms were concentrated in energy and finance sectors in 2010. The number of Germany originated FDI firms were 471 in 2010. Moreover, Germany is the leading invested country with 4.326 firms in Turkey in terms of the total number of FDI firms in Turkish economy. In addition, Netherlands is in the third place with 1.872 firms in Turkey in Total and 168 of those invested in 2010

in construction, finance sectors and manufacturing industries. Almost all FDI inflows from Greece to Turkey were occurred in finance sector. Furthermore, British FDIs in Turkey mostly concentrated on logistics, telecommunication and health sectors in 2010 and all of them were observed as M&As. Luxembourg based investments in Turkey were seen in wholesale, retail, construction sectors and manufacturing industries. Finally, FDIs to coming from Spain were consisted of real estate, construction and tourism industries in 2010 (Undersecretariat of Treasury, 2010). Concerning the other parts of the world, Japan originated FDIs were generally observed in service sectors like insurance in 2010. USA based firms were highly invested in logistics, transportation and telecommunication sectors in 2010.

TOP 10 HOME COUNTRY INVESTED IN TURKEY IN 2010				TOP 10 HOME COUNTRY INVESTED IN TURKEY BETWEEN 2002-2010			
		USD ($) MILLION				USD ($) MILLION	
Ranking	Country	FDI Inflow ($)	Ratio (%)	Ranking	Country	FDI Inflow ($)	Ratio (%)
1	Austria	1.798	27,5	1	Netherlands	14.261	18,8
2	France	600	9,2	2	USA	6.734	8,9
3	Germany	598	9,1	3	Greece	6.489	8,5
4	Netherlands	498	7,6	4	Belgium	5.805	7,6
5	Greece	425	6,5	5	France	5.136	6,8
6	Japan	347	5,3	6	Austria	4.973	6,5
7	USA	320	4,9	7	Luxembourg	4.822	6,3
8	Luxembourg	280	4,3	8	Germany	4.455	5,9
9	United Kingdom	240	3,7	9	United Kingdom	3.709	4,9
10	Spain	190	2,9	10	BAE	3.616	4,8
	Others	1.240	19		Others	16.044	21
	Total	6.536	100		**Total**	76.044	100

Table 3 - Country Rankings w.r.t. FDI inflows in Turkey, Central Bank of Republic of Turkey

EU member states are positioned in the first place with the 13.582 firms invested in Turkey over 25.948 foreign owned firms in Turkey by the end of 2010 (Table 4). Among the EU member countries invested in Turkey; Germany with 4.326 firms is coming first, United Kingdom with 2.237 firms is following it and Netherlands with 1.872 firms takes the third place (Table 2). In 2010, again EU member states with 1.343 firms are leading in investments in Turkey and the runner up country group is the Asian countries, including Near and Middle Eastern Countries, China and South Korea, with 1.209 firms.

Number of Foreign-Owned Companies in Turkey According to Origin							
Country	1954-2005	2006	2007	2008	2009	2010	Total
EU Countries(27)	5.431	1.832	1.896	1.681	1.399	1.343	13.582
Germany	1.777	513	521	552	492	471	4.326
Netherlands	806	249	243	259	147	168	1.872
United Kingdom	789	435	413	237	202	162	2.238
Italy	371	90	78	101	89	96	825
Other EU Countries	1.688	545	641	532	469	446	4.321
Other European Countries (Excluding EU)	1.242	335	437	504	417	513	3.448
Africa	188	39	46	47	68	96	484
Northern America	573	126	146	133	146	136	1.260
USA	520	107	117	114	115	106	1.079
Canada	53	19	29	19	31	30	181
Central-South America and Caribbean	63	12	18	12	17	14	136
Asia	2.660	529	727	753	866	1.209	6.744
Near and Middle Eastern Countries	1.965	377	474	533	632	942	4.923
China	211	22	38	43	42	43	399
South Korea	84	12	21	13	21	19	170
Other Asia	400	118	194	164	171	205	1.252
Others	116	47	34	41	23	33	294
Total	10.273	2.920	3.304	3.171	2.936	3.344	25.948

Table 4 - Number of Foreign Owned Companies in Turkey According to Origin of Country, (Undersecretariat of Treasury)

3.1.3 Sectoral Breakdown of FDIs In Turkey

Coming to the sectoral distribution of foreign investment in Turkey, in the post-1980 period, foreign capital mostly preferred to enter manufacturing and services. Agriculture and mining have been historically the less attractive sectors for foreign investment in Turkey (Guven, 2008). During the late 1990s and early 2000s manufacturing sector became the top FDI receiving sector, with the share of around 52% of total FDI inflows. However, since the early 2000s, services have attracted highest FDI in parallel with the world trends (Sayek, 2007). Service sectors such as banking and telecommunications have attracted the largest share of foreign investment. Post-crisis reforms of the financial sector helped spur the significant boom in FDI inflows into the Turkish banking sector. Most of the investment inflows have been used to acquire existing businesses, as opposed to greenfield projects. While Turkey's manufacturing sector could benefit significantly from technology transfer through FDI, the share of foreign investment in this sector has remained very modest (World Bank, 2007).

During the last six years, the intermediation and manufacturing sectors have attracted the highest amount of FDI. FDI inflows to industrial sector accounted for 49% of the total inflows in 2010, while the services sector had 50% share. In 2010, energy and finance sectors got the primary share in FDI inflows with 33% and 25% share in total inflows respectively.FDI inflows to the industrial sectors have decreased from $5,1 billion in 2007 and 2008, to $3,8 billion in 2009 and to $3,1 billion in 2010 (Table 5). Over the last 6 years, finance sector has attracted the largest amount of FDI inflow to

Turkey among all the sectors. Finance sector's FDI attracting performance was about $31 billion in the period of 2005-2010. Most of those FDIs on Finance sector during this period were experienced as the acquisitions of existing banks and financial intermediaries such as insurance companies.

FDI INFLOW TO TURKEY BY SECTOR							
							USD ($) MILLION
Sector	2005	2006	2007	2008	2009	2010	2005-2010
Agriculture, Hunting , Forestry, Fishing	7	6	9	41	49	78	190
Industry	829	2.100	5.116	5.174	3.778	3.082	20.079
Mining	40	122	337	151	89	195	934
Manufacturing	785	1.866	4.211	3.955	1.565	847	13.229
Electricity, Gas, Water	4	112	568	1.068	2.124	2.040	5.916
Services	7.699	15.533	14.012	9.532	2.423	3.100	52.299
Finance	4.018	6.957	11.662	6.069	666	1.575	30.947
Construction	80	222	285	336	208	391	1.522
Wholesale and Retail Trade	68	1.166	165	2.085	389	310	4.183
Real Estate Brokerage Services	29	99	560	641	560	282	2.171
Transportation, Warehousing and Communication	3.285	6.696	1.117	170	391	199	11.858
Other Services	219	393	223	231	209	343	1.618
Total Inflows (Equity)*	8.535	17.639	19.137	14.747	6.250	6.260	72.568

* Real estate purchases by real persons and intra company loans that companies with foreign capital are given by foreign partners are not included

Table 5 - Sectoral Breakdown of FDI Inflows to Turkey (2005-2010), Central Bank of Republic of Turkey

Relevant to the sectoral breakdown of FDI in Turkey (Figure 3); it can be concluded that the share of sectors in total FDI has shifted from manufacturing to services sector, owing to the investment increase in banking and telecommunication sub-sectors.

As shown in Figure 3 electrical and optical instruments was the leading sector in the manufacturing industry receiving 20% of total inflows to manufacturing sectors and manufacturing of basic metals and fabricated metal products followed with 19% share (YASED, 2011).

BREAKDOWN OF FDI INFLOWS TO MANUFACTURING IN 2010

- Non-metallic other minerals
- Machinery and Equipment
- Textiles and Products
- Chemicals
- Food, beverages, tobacco
- Electrical and Optical Instruments
- Basic Metals and Fabricated Metal Products
- Other
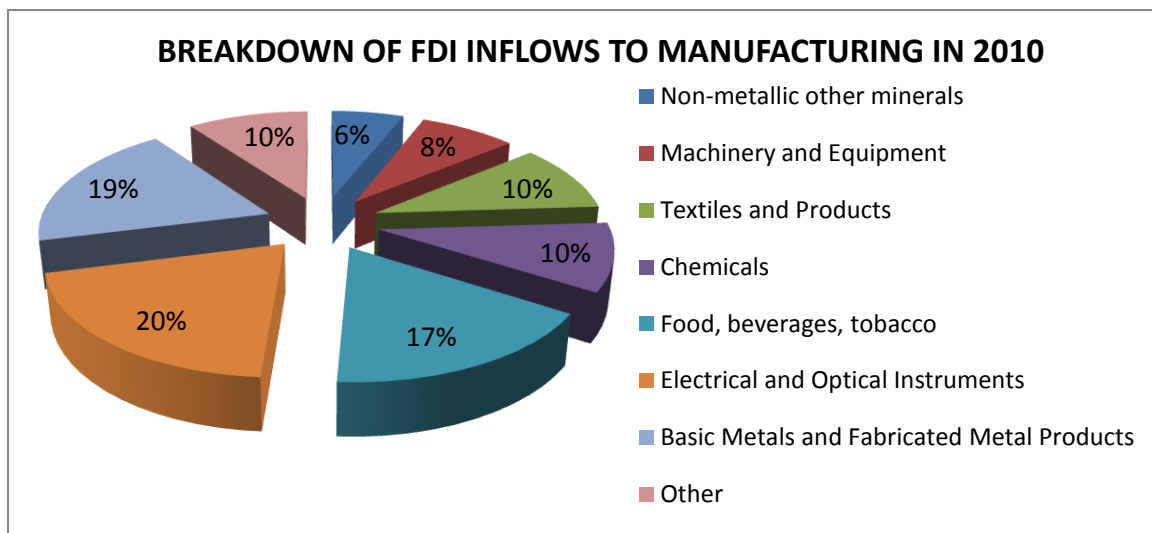
Figure 3 - Breakdown of FDI Inflows to Manufacturing Sector in 2010 in Turkey, Central Bank of Republic of Turkey and YASED 2010 Report

According to the number of foreign company invested in Turkey between 1954 and 2010, the majority of the companies with international capital are in the wholesale and retail trade sectors while this is followed by manufacturing, real estate, renting and other business activities. Textile goods production leads the manufacturing sector investments followed by chemicals and chemical products, food products and the beverage sector (ISPAT, 2011). By 2010 there are 25.948 foreign owned firms have been operating and 7.847 of those are in wholesale and retail trade, 4.363 in manufacturing industry and 4.144 of them in real estate brokerage services in the first there place (Table 6). The global trend of concentration on services industries in FDIs has been also observed in Turkey.

With the attractiveness of energy sector, number of companies invested in this sector has increased recently and became 568 in total in 2010 (Table 6). Finance sector with the highest foreign investment according to monetary terms has totally 299 companies in Turkey by 2010. In the manufacturing industry by 2010 4.369 firms are operating and this result forms the 17% of the whole number of FDI companies in Turkey. In addition, sub-sectors of foreign capitalized manufacturing industry such as chemical sector has 484 firms, food, beverage and tobacco sectors have 468 and apparel sector has 440 firms in the Turkish economy (Undersecretariat of Treasury, 2010). Finally, 144 of the 283 foreign companies with more than $500 thousands investments in Turkey were originated from the EU member states in 2010 (Undersecretariat of Treasury, 2010).

NUMBER OF COMPANIES WITH INTERNAITONAL CAPITAL IN TURKEY BY SECTOR							
Sector	1954-2005	2006	2007	2008	2009	2010	1954-2010
Agriculture, Hunting , Forestry, Fishing	156	39	46	52	55	63	411
Industry	2516	497	609	649	589	620	5480
Mining	182	45	77	87	73	79	543
Manufacturing	2.237	412	463	454	388	415	4.369
Electricity, Gas, Water	97	40	69	108	128	126	568
Services	7.601	2.384	2.649	2.470	2.292	2.661	20.057
Finance	138	46	42	42	17	14	299
Construction	624	386	444	344	299	319	2.416
Wholesale and Retail Trade	3.579	717	757	760	913	1.121	7.847
Real Estate Brokerage Services	1.104	626	779	635	468	532	4.144
Transportation, Warehousing and Communication	867	256	270	282	264	344	2.283
Other Services	1.289	353	357	407	331	331	3.068
Total	10.273	2.920	3.304	3.171	2.936	3.344	25.948

Table 6 - Breakdown of Companies with International Capital (1954-2010), Central Bank of Republic of Turkey and Secreteriat of Treasury

3.2 A Comparative Analysis of FDI in Turkey by EU New Member States (and Candidate Countries)

In this section, in order to assess Turkey's FDI performance different measures are used including UNCTAD's inward FDI performance and FDI potential indexes. Further measures to be analyzed for country comparisons concern investment environment for instance number of procedures to start a business or tax rates as percentage of GDP. Benchmark countries are selected among new EU member states (since 2004), as well as candidate countries and countries that have high FDI attractiveness to make the comparisons more clear.

To start with, inward FDI performance index that was introduced to the literature by UNCTAD ranks countries according to the FDI flow they receive with respect to their economic size whilst another index that was introduced by the same entity, inward FDI potential index shows host country's ability to attract FDI with respect to other countries. It is to say that inward FDI performance index can be calculated using numbers yet inward FDI potential index is more difficult to be quantified as it takes into account social, political and institutional factors (UNCTAD, 2011).

Benchmark countries are chosen according to the literature research and to some facts. Taking into account Loewendahls' work in which they name Czech Republic, Hungary, and Poland that are developed at similar levels as main competitors of Turkey in CEECs (Central and Eastern European Countries) region (2001), these three countries are listed in the analysis (Loewendahl & Ertugal-Loewendahl, 2001). YASED's Turkey's attractiveness analysis considers 16 countries from different continents including countries that are good examples for attracting FDI (2004) (YASED & TUSIAD, 2004). Similar to what has been done in this study, Germany and Ireland are selected as these example countries for the comparison. Finally, newest members Bulgaria and Romania, and candidate countries (Croatia, Iceland, Montenegro, and Macedonia) are the other states are to complete the comparison list.

According to the data shown in Table 7, one can say that Turkey has the lower FDI inflow as a percentage of GDP in comparison with newest EU members Bulgaria and Romania, as well as candidate countries Croatia, Iceland, Montenegro, and Macedonia. A remark about Germany is that this country has relatively low numbers since her GDP is quite high. Another point that can be made from this table is that these countries enjoyed higher FDI as a percentage of GDP after starting EU accession procedures which is the case in examples of Bulgaria (2003-2007), Iceland (2005-2007), Montenegro (2006-2010), Turkey (2005-2007) and others. Dervis, former Minister for Economic Affairs of Turkey, declares that had Turkey greater FDI flows as a percentage of GDP than that of 2004, to say at 3-4% level which is the similar level for Ireland or Hungary, Turkish economic growth could be more fast (Dervis, Gros, Oztrak, Bayar, & Isik, 2004).

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Bulgaria	4,2	6,2	7,9	5,8	5,8	10,1	13,4	13,6	23,5	29,4	19,0	6,9	4,5
Croatia	3,8	6,3	4,9	5,7	4,0	5,9	2,9	4,1	7,1	8,6	8,9	4,6	1,0
Czech Republic	6,0	10,5	8,8	9,1	11,3	2,3	4,5	9,4	3,8	6,0	3,0	1,5	3,5
Germany	1,1	2,6	10,4	1,4	2,7	1,3	-0,4	1,7	1,9	2,4	0,1	1,1	1,4
Hungary	6,8	6,7	5,8	7,4	4,5	2,5	4,2	7,0	6,0	2,9	4,8	1,6	1,8
Iceland	1,8	0,8	2,0	2,2	1,0	3,0	5,5	18,8	23,1	33,4	5,5	0,7	23,3
Ireland	10,1	18,9	26,6	9,2	23,9	14,4	-5,7	-15,7	-2,5	9,5	-6,2	11,7	12,9
Montenegro	0,5	0,8	0,5	1,2	2,9	6,1	3,5	6,6	13,6	9,2	21,2	37,4	19,3
Poland	3,7	4,3	5,5	3,0	2,1	2,1	5,1	3,4	5,7	5,5	2,8	3,2	2,1
Romania	4,8	2,9	2,8	2,9	2,5	3,7	8,5	6,5	9,3	5,8	6,8	3,0	2,2
TFYR of Macedonia	4,2	2,4	6,0	13,0	2,8	2,4	6,0	1,7	6,6	8,5	6,0	2,1	3,1
Turkey	0,3	0,3	0,4	1,7	0,5	0,6	0,7	2,1	3,8	3,4	2,7	1,4	1,2

Table 7 - FDI as a percentage of FDI, UNCTAD

Other comparison tools that can be used are UNCTAD's inward FDI performance and inward FDI potential indexes that are explained before. Table 8 contains inward FDI Performance Indexes for which the rankings are given over 140 countries. Within the given period, Turkey failed to catch none of the selected countries, being the last for most of the period. What can be said about this picture is that Turkey could not attract lots of investments and stood behind the benchmark countries even though 2005-2007 period was relatively promising for this country thanks to negotiations with EU. Here again, it is to say that Germany as a developed country does not have the best records but one of the worse due to the largeness of this economy.

	1998-2000	2001-2003	2004-2006	2007	2008	2009	2010
Bulgaria	27	21	3	3	5	27	42
Croatia	30	19	43	33	27	44	112
Czech Republic	15	13	24	54	87	97	50
Germany	47	102	123	107	133	110	104
Hungary	53	33	38	1	60	95	81
Iceland	100	89	4	2	51	125	6
Ireland	4	4	141	29	141	11	14
Montenegro	-	-	-	-	-	-	-
Poland	42	68	51	60	90	60	75
Romania	64	62	21	57	42	63	73
Serbia and Montenegro	-	-	-	-	-	-	-
TFYR of Macedonia	73	31	50	-		49	79	56
Turkey	123	110	86	91	94	102	108

Table 8 - Inward FDI Performance Index (rankings), UNCTAD

For Inward FDI potential rankings, the picture is pretty much the same as it is for inward FDI performance. In Table 9, it can be noticed that most of the countries have maintained their position except Romania which improved its previous FDI potential ranking from a worse position than that of Turkey (stepping up from 98 to 60 within the given period). Turkey, for inward FDI potential, has not the lowest ranking but the second, meaning that she does not have a very attractive investment environment when compared to benchmark countries.

	1998-2000	2001-2003	2004-2006	2007	2008	2009	2010
Bulgaria	68	61	59	54	62	67	-
Croatia	51	49	56	57	56	64	-
Czech Republic	38	39	39	34	36	32	-
Germany	6	8	6	5	4	6	-
Hungary	45	40	41	44	46	46	-
Iceland	18	14	12	13	16	18	-
Ireland	15	10	16	17	23	25	-
Montenegro	-	-	-	-	-	-	-
Poland	43	43	43	42	43	41	-
Romania	98	81	69	64	64	60	-
Serbia and Montenegro	-	-	-	-	-	-	-
TFYR of Macedonia	101	120	107	-		100	105	-
Turkey	78	72	72	73	75	80	-

Table 9 - Inward FDI Potential Index (rankings), UNCTAD

To further understand and assess the FDI attractiveness of Turkey by benchmarking it with other countries, data collected by the Undersecretariat of Treasury about the investment environment can be examined (Undersecretariat of Treasury, 2011). Data about starting a business (number of procedures, duration, and cost) and taxes on income and profit are provided in Figure 4, 5, 6, 7. As explained under historical perspective chapter, with the changes in FDI law in 2003, Turkey has one of the shortest procedures to start a business both in terms of duration and number of procedures. 6 procedures are at OECD level and 6 days are well below OECD level (14 days). Hungary and Croatia are other states that ease starting a business. However, its cost as a percentage of GDP per capita is 17%, two times Hungary and Croatia, three times the percentage for OECD. Bulgaria, with 4 procedures that take 18 days and costs about 2 percent of GDP, is one of the successful benchmarked countries. Coming to taxes on income and profit as a percentage of GDP for year 2008, while Czech Republic, Germany, Hungary, Ireland, and Poland are around 10% being under OECD average, Turkey is quite motivating for investors with only 5.7%. To sum, taking into account these deductions, Turkey is theoretically motivates investors through shortening of bureaucratic procedures and reducing tax on profit and income.
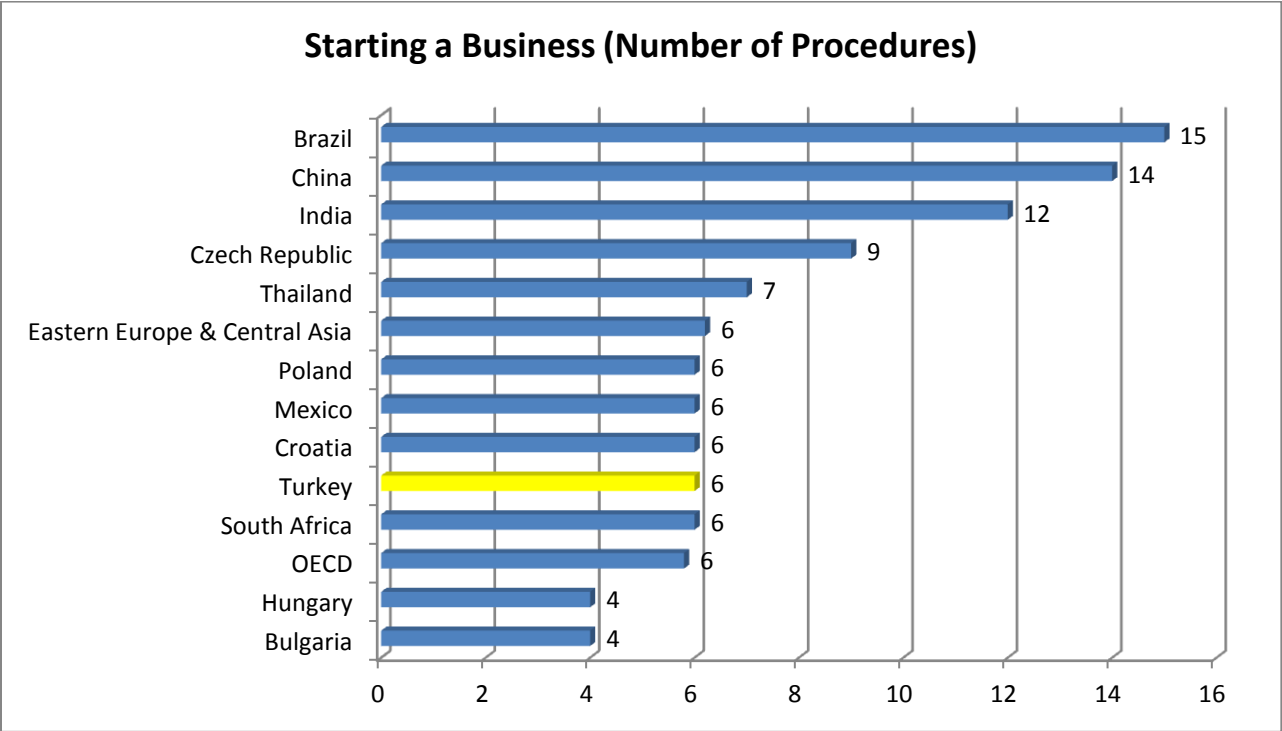
Figure 4 - Starting a Business (Number of Procedures), World Bank Doing Business Report, 2011
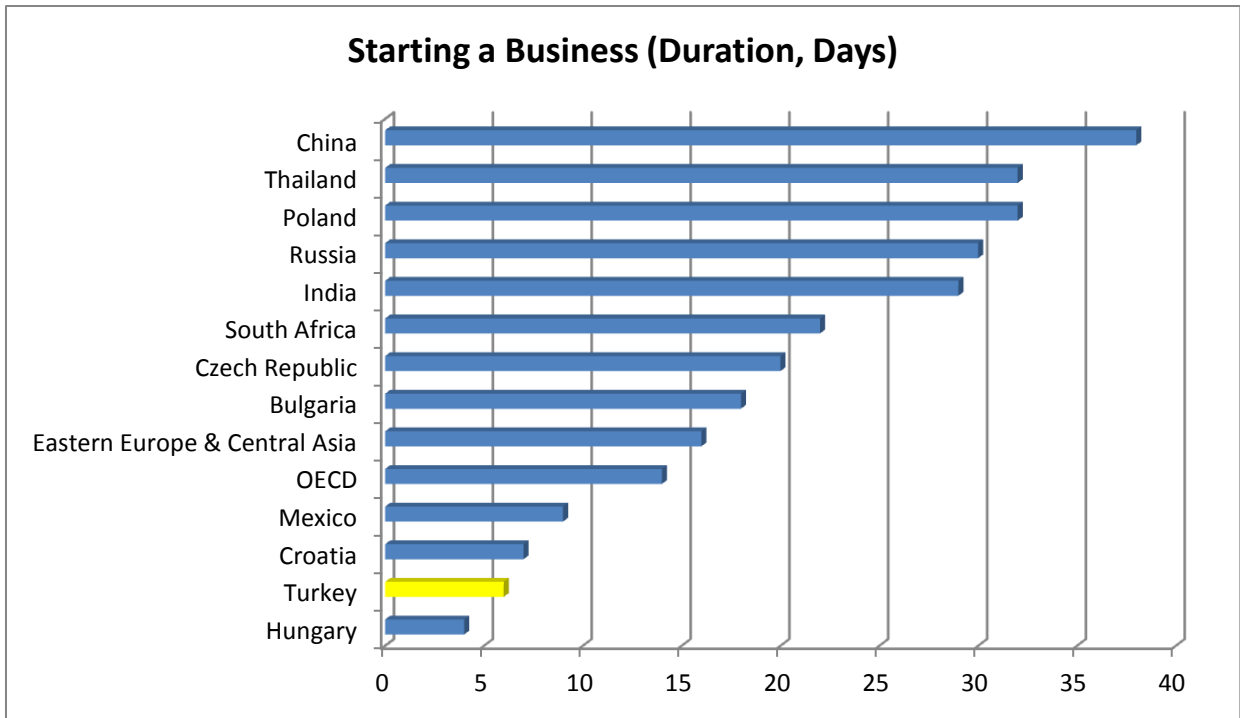
Figure 5 - Starting a Business (Duration, Days), World Bank Doing Business Report, 2011
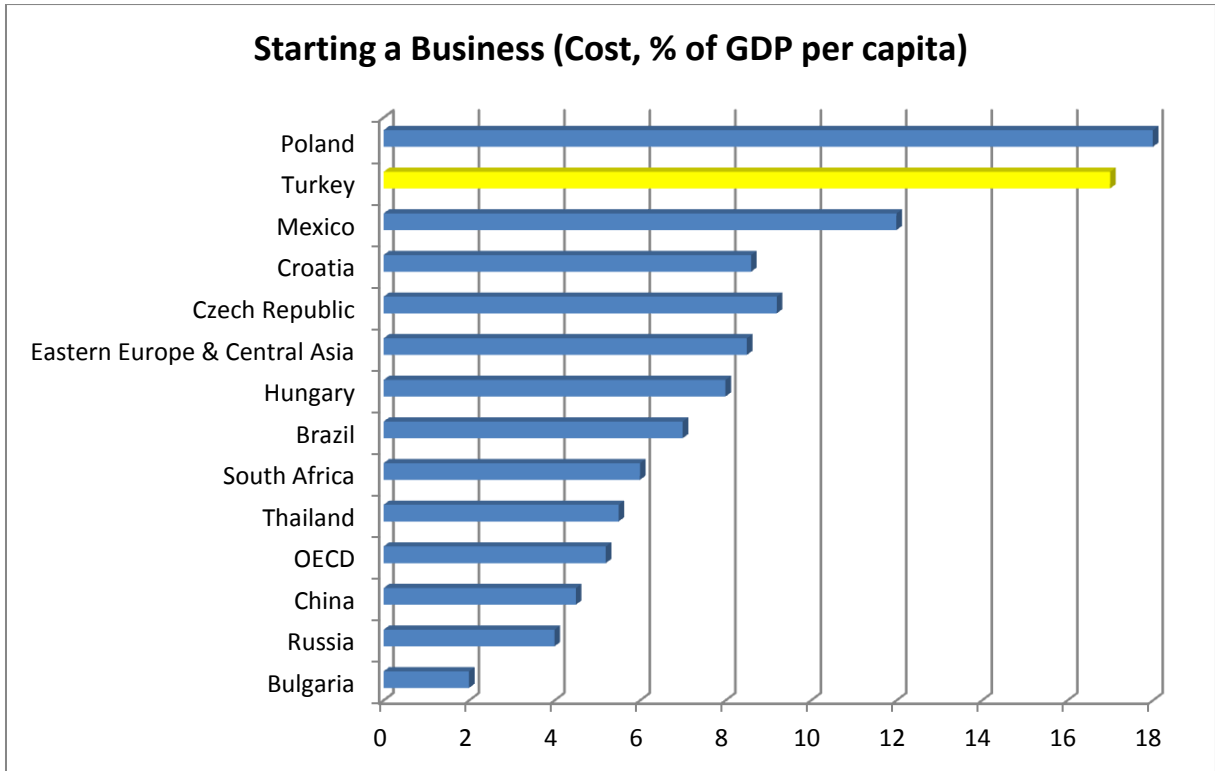
Figure 6 - Starting a Business (Cost, % of GDP per capita) World Bank Doing Business Report, 2011

Taxes on Income and Profit (% of GDP, 2008)

Mexico, Turkey (5,7), Slovak R., Greece, Czech R., Poland, Portugal, Spain, Hungary, Ireland, Germany, Luxembourg, Austria, OECD (2007) (13,2), Switzerland, Italy, Belgium, Sweden, Iceland, Denmark
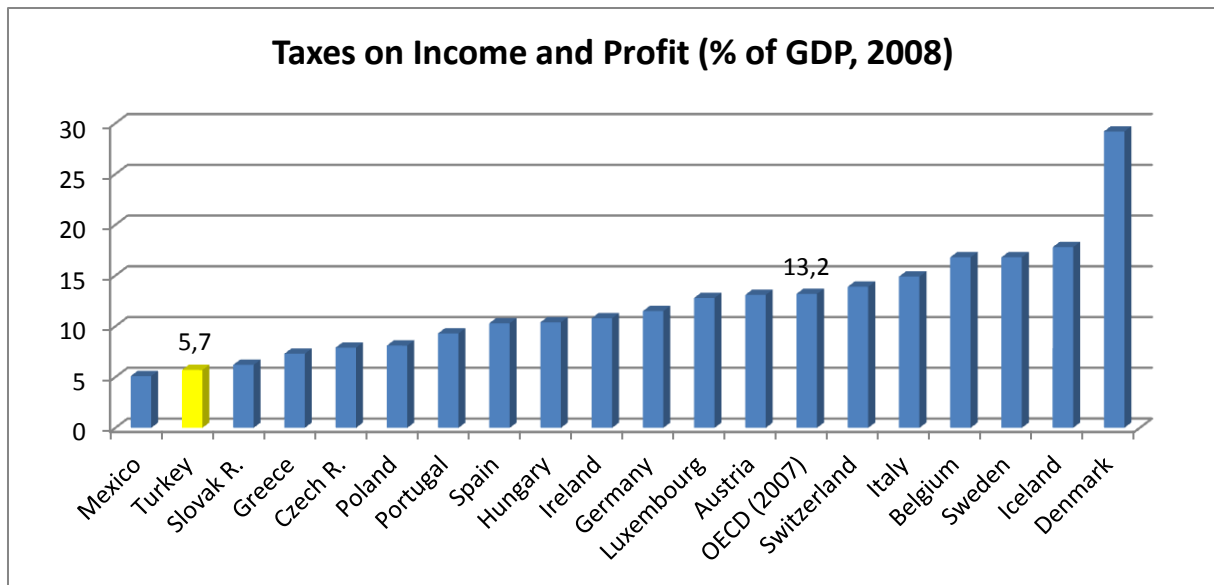
Figure 7 - Taxes on Income and Profit (% of GDP, 2008), OECD Factbook 2010

Hughes forecasts 2 to 4 billion Euros of FDI inflows if Turkey accessed EU and managed to improve political and economical stability, and managed to prevent corruption and judiciary problems (Hughes, 2004). Even though EU negotiations are in progress, investors' rights are enhanced via amendments, bureaucratic procedures are facilitated and tax advantages are provided; taking into account its size, Turkish economy fails to attract FDI flows as much as its competitors do.

3.3 Factors Affecting the Inward FDI in Turkey

3.3.1 Country Profile

Turkey is a secular and demographic republic. Looking at the Turkey's geographical location, Turkey is a location of intersection for old continents including Asia, Europe and Africa. It has a unique location towards three continents and the seas surrounding it on three sides. The country occupies an area of 785.000 square kilometers, almost equaling to the combined areas of France and Germany and divided into seven geographical regions (YASED, 2010). In addition, country is neighbor to the European and Asian countries. Ankara, the capital city is situated in the center of country. Turkey has a population exceeding 73.7 million by 2010 (Turkish Statistical Institute, 2010) and being rapidly urbanized. The population growth rate of the country is higher than the Europe's average. The official language is Turkish. As a result of significant efforts that have been contributed for improving the overall education level in the last 2 decades, today, the literacy rate is over 90%. Increase in the overall schooling rate is contributing in developing for the formation of well educated and hardworking Turkish labor force of the future. Turkey has a liberal exchange rate regime in which Turkish Lira is convertible against other currencies. Moreover, Turkey's time zone enables it to communicate both eastern and western countries during the same working day.

Just looking at the Turkey's geographical location and its large and young population, Turkey looks attractive for the foreign investors for several reasons including market size, logistics advantages and so. However, the conflicts with the neighbors like Greece, Armenia, and the terrorism issues, also the wars and political disputes in neighborhood regions like Middle East, Iraq, Syria and Iran damage the FDI attractiveness of Turkey. Same issues are also some obstacles in front of the Turkey's economic growth.

3.3.2   General Macroeconomic Conditions

General macroeconomic conditions of a country are considered first by foreign investors before any investments. The same situation has been observed in Turkish economy. Especially with the liberalization policies implemented in 1980s have made the Turkey more sensitive to global economic fluctuations. Fixed exchange rate system, high interest rates, high inflation, devaluations and financial fragility of the country as well as coalition governments with political instability confronted the real investments until 2000. After the 2001 financial crisis and devaluation in Turkey that was followed by elections, a single-party government was founded which resulted in relatively stable political environment. During this period through the monetary policy of IMF with Turkish government, inflation was reduced and uncertainty in the Turkish economy was decreased.

Fiscal discipline and a tight fiscal policy continue to be the main pillars of Turkey's economic program, and both have contributed substantially to disinflation, as well as to the strong growth performance over the last decade. The structural reforms between 2002-2010 that have been implemented are aimed at increasing the role of the private sector in the Turkish economy, enhancing the efficiency and resiliency of the finance sector, placing the social security system on a more healthy and reliable basis. These reforms have strengthened macroeconomic fundamentals of the Turkish economy (ISPAT, 2011). Due to determinedly implemented structural reforms and successful macroeconomic policies, Turkey has become one of the fastest growing economies in its region over the last 8 years.

Turkey's economic performance of last two decades is highly relying on export oriented growth strategy and this strategy has resulted in substantial economic transformation from closed economy to a competitive and market-oriented economy regulated through a liberal legal framework. With its large population, Turkey is a big and dynamic market for foreign investors like MNCs. The liberal economic regime and the massive government spending on infrastructure since 2000 has been the main stimulus behind the increase in investments both for exports and big domestic market (YASED, 2010).

Since 2002 Turkish economy has been constantly growing in terms of GDP in current and constant prices except during global economic crisis of 2009 (Table 10). Since the Turkish economy has grown steadily, living standards have increased significantly. GDP per capita has increased from the level of $3.492 in 2002 to $10.079 in 2010 (Table 10). Turkey's growth trend has not changed from its upward direction between 2002 and 2007 (Table 10). However, due to the severe economic recessions, a sharp decline in growth in 2008 and even a negative growth in terms of real GDP in 2009 were observed in Turkish economy (Figure 8). As indicated in IMF World Economic Outlook April 2011 report, Turkey's GDP increased by 8,9% in 2010 is the highest growth rate to be recorded in Europe and it is one of the fastest growing economies in the world for the year (Figure 9) (IMF, 2011).

GDP Results of Turkey (Production/Expenditure Approach)					
Year	GDP (Current Prices/ USD ($) Million)	Growth Rate (%)	GDP (Constant Prices/ Turkish Lira (TL) Million)	Growth Rate (%)	GDP Per Capita (Current Prices/ USD ($))
2000	265.384	7,2	72.436	6,8	
2001	196.736	-25,9	68.309	-5,7	
2002	230.494	17,2	72.520	6,2	3.492
2003	304.901	32,3	76.338	5,3	4.559
2004	390.387	28,0	83.486	9,4	5.764
2005	481.497	23,3	90.500	8,4	7.021
2006	526.429	9,3	96.738	6,9	7.583
2007	648.625	23,2	101.255	4,7	9.234
2008	742.094	14,4	101.922	0,7	10.440
2009	616.703	-16,9	97.003	-4,8	8.578
2010	735.828	19,3	105.680	8,9	10.079

Table 10 - GDP Results of Turkey (2000-2010), (Turkish Statistical Institute), Undersecretariat of Treasury
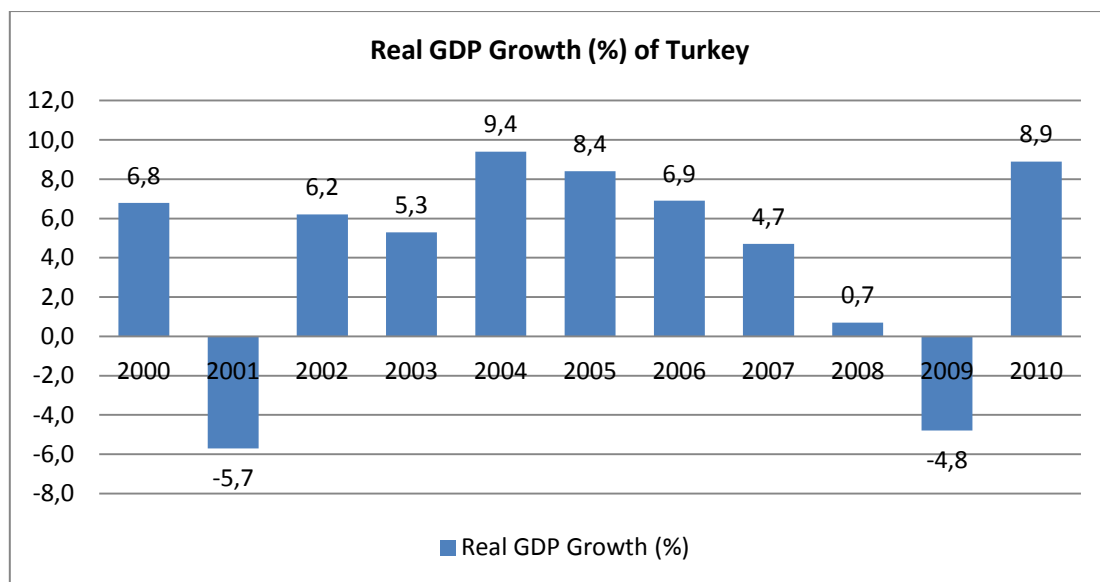
Figure 8 - Real GDP Growth of Turkey (200-2010, Constant Prices), Turkish Statistical Institute and Secretariat of Treasury

2010 Real GDP Growth (%) in Turkey and Other Economies
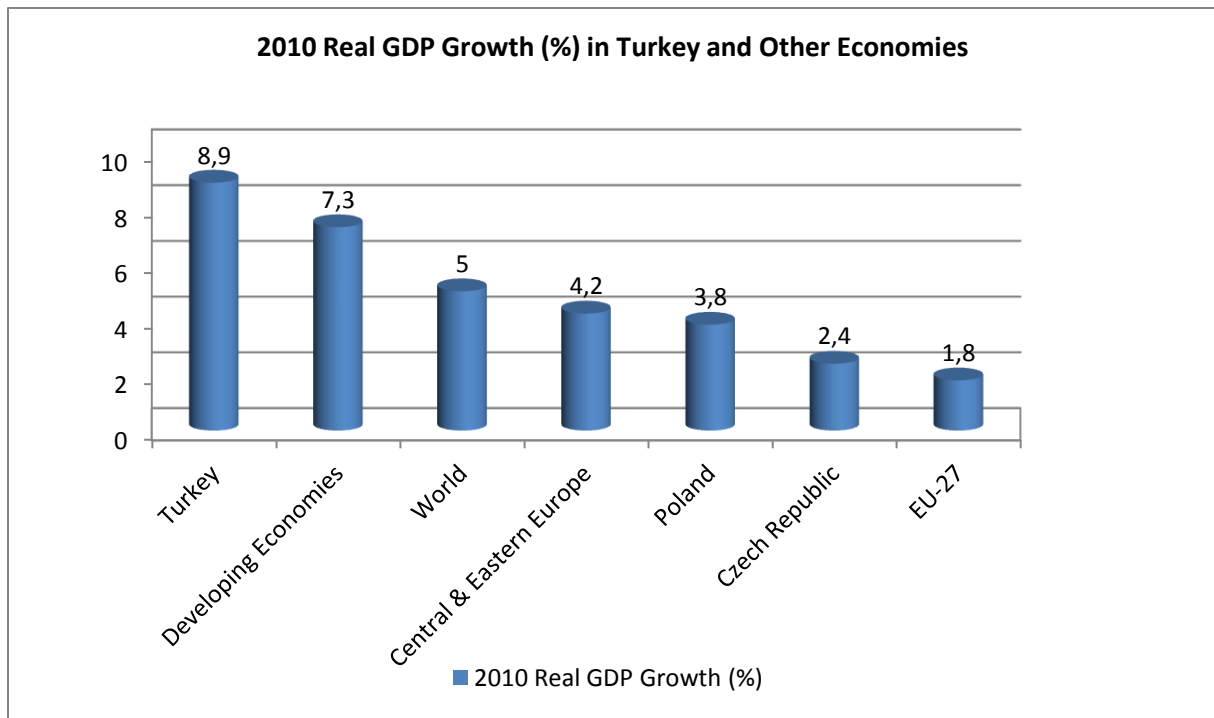
Figure 9 - Comparison of 2010 Real GDP Growth of Turkey with Other Economies IMF World Economic Outlook April 2011, TurkStat

Local market size is an important variable for the MNCs and foreign investors during the investment location decisions. Therefore, Turkey with approximately 74 million populations has been an attraction center for FDI for the last 10 years. Due to the large market size and young and growing population of the Turkey, incoming FDIs mostly concentrated on sectors like communication, retailing and final consumer goods. About the local market conditions of the country, Andrew Morgan, president of Diageo Europe, says in an article of Bolgar "Turkey is the fastest-growing economy in Europe, with strong macroeconomic fundamentals and a stable political environment. A large—72 million—and growing population, attractive demographic trends among young adults and an emerging middle class with rising incomes present us with an opportunity to develop consumers in the Turkish market" (Bolgar, 2011).

Inflation has been Turkey's most important economic problem with increases in both consumer and producer prices. The most recent stand-by program carried out with IMF mainly focused on reduction of inflation, reducing government debt financial need while sustaining continuous economic growth (YASED, 2010). The annual inflation rate (CPI) declined from the level of around 70 percent at the beginning of 2002 to a single digit, 6,4 percent by the end of 2010 (Table 11). According to Turkish Statistics Institute's released data Turkey's inflation rate reached a 41-year low of 6,4 percent in 2010. The Consumer Price Index (CPI) was 6.4 percent in December 2010, while the Producer Price Index (PPI) was recorded at 8.87 percent. With these latest figures, inflation in Turkey has continued its downward trend over the past decade.

Inflation Rates in Turkey (%)		
Year	Producer Price Index (PPI) (%)	Consumer Price Index (CPI) (%)
2000		39,03
2001	88,6	68,5
2002	30,8	29,7
2003	13,9	18,4
2004	13,8	9,3
2005	2,66	7,7
2006	11,58	9,6
2007	5,94	8,39
2008	8,11	10,06
2009	5,93	6,53
2010	8,87	6,4

Table 11 - Inflation Rates in Turkey by PPI and CPI (2000-2010), Turkish Statistical Institute (TurkStat)

Fixed capital investment in Turkey is one of the main elements which determines the economic growth. Even though the level of fixed capital investment is higher in Turkey than some EU member states, considering the development and population levels, the share of public investment still remains lower. Fixed capital investment as a percentage of GDP in Turkey and some selected countries can be seen in Table 12.

Gross Fixed Capital Formation As Percentage (%) of GDP (Current Prices)										
Country	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
EU (27 States)	20,1	19,6	19,4	19,5	19,9	20,6	21,1	20,9	18,9	18,4
Bulgaria	18,3	18,3	19,0	20,4	25,7	27,6	28,7	33,6	28,9	23,5
Czech Republic	28,0	27,5	26,7	25,8	24,9	24,7	25,2	23,9	22,5	21,3
Italy	20,3	20,9	20,4	20,5	20,7	21,1	21,2	20,8	19,1	19,5
Hungary	23,0	23,1	22,2	22,5	23,1	21,8	21,4	21,4	20,9	19,3
Poland	27,0	25,7	23,7	23,3	23,0	22,4	22,2	22,5	19,9	19,0
Romania	20,5	21,3	21,5	21,8	23,7	25,6	30,2	31,9	26,2	22,7
Croatia	19,5	21,4	25,0	24,8	24,7	26,0	26,2	27,7	24,9	21,6
Turkey	15,9	16,7	17,0	20,3	21,0	22,3	21,4	19,9	16,9	18,7

Table 12 - Gross Fixed Capital Formation as Percentage of GDP, Eurostat

Thanks to Turkey's prudent fiscal policy, Turkey has reduced its debt stocks, becoming one of the best performers among the European economies in reducing government debt. The general government debt stock ratio has been meeting the EU Maastricht Criteria, 60%, since 2004. Furthermore, between 2002 and 2010 public debt stock decreased from 74 percent of GDP to 42 percent of GDP. Also budget deficit decreased from 10 percent of GDP to around 3 percent of GDP (ISPAT, 2011). On the other hand, while other macroeconomic indicators have showed good performance, some are still suffering like current budget deficit of Turkey. Turkey has been challenging current account deficit over the last decade. It is expected that at the end of 2011, current budget deficit will end the year above $75 billion, which amounts over 9% of GDP. This will be highest amount recorded in the Turkish economy so far. In 2008, 2009 and 2010, the deficit was accounted about $69, $38 and $71 billion respectively (Turkish Statistical Institute). Imports are

growing faster than the exports do. Therefore, proportion of imports covered by exports ratio was decreased from 72,5% in 2009 to 61,4% in 2010 and the expectations for end of 2011 is below 58% (Turkish Statistical Institute).

	Foreign Trade in Turkey (2000-2010)				
	Import		Export		
Year	Amount (USD ($) Thousand)	Change (%)	Amount (USD ($) Thousand)	Change (%)	Ratio*
2000	27.774.906	4,50	54.502.821	34,0	51,0
2001	31.334.216	12,80	41.399.083	-24,0	75,7
2002	36.059.089	15,10	51.553.797	24,5	69,9
2003	47.252.836	31,00	69.339.692	34,5	68,1
2004	63.167.153	33,70	97.539.766	40,7	64,8
2005	73.476.408	16,30	116.774.151	19,7	62,9
2006	85.534.676	16,40	139.576.174	19,5	61,3
2007	107.271.750	25,40	170.062.715	21,8	63,1
2008	132.027.196	23,10	201.963.574	18,8	65,4
2009	102.142.613	-22,60	140.928.421	-30,2	72,5
2010	113.975.607	11,60	185.535.044	31,7	61,4
* Proportion of imports covered by exports ratio					

Table 13 - Foreign Trade in Turkey (2000-2010), TurkStat

As a result of monetary policies that Turkey has been implementing since 2002 demonstrates the positive developments such as decline in interest rates as an indicator of macroeconomic stability. This reduction in interest rates on the other hand leads to a decrease in money flows arising from the economic fragility contributes to the stability of the economy (Terzioglu, 2007).

FDI inflow amounts to Turkish economy over the last ten years period show that positive progress in general macroeconomic variables of Turkey such as GDP, inflation and debt are consistent with the FDI policy but not consistent with the foreign trade balance.

3.3.3 Political Environment

The Turkish Republic, founded in 29 October in 1923, is a parliamentary democracy, following the clear division of state and religion. Turkey also applied for membership of the European Union in 1987 after having been an associate member since 1963. The country has been recognized as a candidate for full membership in 1999 and negotiations began in 2005. Turkey's accession is a contentious issue of political discussion within the EU countries. Despite both its social and economic development, it remains a relatively poor country, has huge unsolved internal (Kurdish Minority) and external (Cyprus) political problems and, last but not least, a different cultural background, despite having been very historically active in European politics, especially in the Balkans (PMR Consulting Analysis of Turkey, 2011). Turkey has expressed a willingness to join the EU and has made significant efforts to reform its legal system in line with Union regulations, but it is not likely to become a member state in the foreseeable future. It is clear that the probable EU membership of Turkey will make the country more attractive to foreign investment at least from EU member states. Turkish business authorities like TUSIAD also specify that the EU membership will bring Turkey access to big EU market, increased growth prospects and access to structural funds. But more importantly

Turkey's EU membership boosts confidence by removing uncertainty in political and economic stability (YASED & TUSIAD, 2004).

After 2002 elections one-party government was founded that has been an important element of economic stability over the last decade. Furthermore, compared to political situations of 1980s and 1990s in Turkey, the political environment of Turkey during 2000s is relatively stable even the presence of some ongoing internal and external political conflicts. Nevertheless, everlasting wars and political conflicts on the neighborhood regions of Turkey can make the foreigners to avoid making investments in Turkey. Moreover, sometimes the last disputes like between the Israel and Turkey are damaging the economic and political partnership of both countries as observed before during late 90s between Turkey and Italy.

Positive economic developments have been achieved in recent years in terms of legal procedures in Turkey. In addition to the improvements made within the EU accession process in recent years, private sector representatives and bureaucrats have signed some agreements in order to facilitate investment procedures for both domestic and foreign investors and also Improvement of the Investment Coordination Committee has been established to monitor and support those developments. This board also has been working on the removal of structural barriers to foreign investment since 2003. The Turkish government has introduced reforms to its Foreign Direct Investment Law (Appendix 1). The new law removes various restrictions and simplifies the investment procedure. And with the very liberal law 4875 on foreign investment enacted in 2003, the transfer of profit and copyrights have been guaranteed and a safe environment for FDI have been allocated by guarantying not nationalizing the foreign capital anymore. More importantly, foreign capital has equal rights with domestic capital since 2003. Gerald Knaus, chairman of the European Stability Initiative (ESI), indicates on Wall Street Journal that until 2000, Turkey's policy was xenophobic again foreigners but today this has completely changed. The government allowed the Greek national bank to buy one leading domestic bank of Turkey (Bolgar, 2011). It can be concluded that the Turkish government has been eager to attract more FDI compared to previous ones for the last decade as seen in its FDI friendly approaches and laws so far.

3.3.4 Labor

According to the Luxembourg's Ministry of Economy and Foreign Trade, Turkey has a significant advantage in the form of low labor costs (Appendix 2). This factor, coupled with a developing market and investment incentives, make Turkey an attractive destination for foreign investors. The range of labor skills varies widely from the unskilled, through the semi-skilled and up to a highly skilled labor force. The workforce consists of an excess of unqualified, semi-qualified and qualified workers. The highly qualified workers have a good command of multiple languages (ISPAT, 2011).In Turkey by July 2011 it is about 25 million people (Appendix 2) are active in labor force and ranked 23th among the 228 countries in the world and 4th largest labor force compared to EU countries (CIA, 2011). The Turkish labor market is one of the best compared to the some EU new member states thanks to the qualifications, skills, dedication and motivation it offers (Appendix 2) but still away from the EU leading member states.

A new labor act by Turkish government came into force in June 2003 and covers the relationships between employers and employees. It is completely in line with the regulations specified by the

International Labor Organization and the European Union. The act is more protective towards employee interests.

3.3.5 Energy

According to the Electricity Energy Market and Supply Security Strategy Paper, Turkey's strategy in the energy sector is to ensure delivery of energy resources and electricity, which plays a central role in Turkey's economic and social life, to consumers in an adequate, high-quality, uninterrupted, low-cost, and environmentally friendly manner. Turkey's electricity consumption and production were decreased in 2009 compared to 2008 but by 2011 it is expected that the consumption and production will again grow up again (Appendix 3).

In addition to unused energy resources such as hydraulic power and lignite, Turkey's renewable energy potential is a great opportunity for investors. The Law 6094 on Amendments on Utilization of Renewable Energy Sources for the Purpose of Generating Electrical Energy dated December 29, 2010, encourages these types of investments and makes them even more attractive for the foreign investors.

Turkey is also an important place on the map of world oil and gas transportation, as a large part of those resources extracted from the Black and Caspian Sea basins is transported either by sea vessels over the Bosfor or via pipelines. Turkey's priority is to secure its energy resources. In order to achieve this goal, Turkey is carrying out many pipeline projects for both natural gas and oil. Once they are completed, the following projects will provide secure energy resources for both Turkey and Europe.

PMR Consulting Company indicates that, one of Turkey's economic issues is the rapid increase in electricity consumption, rising by 7.2% p.a. on average for the last two decades. The potential demand for electricity will be a driving force for future investment which is currently expensive and short in supply. The majority of domestic energy consumption comes from oil (37%), followed by natural gas (23%), coal (27% incl. 11% from burning lignite) and renewable sources (13%). With its majority of oil and gas imported Turkey faces an emerging electricity supply gap which is due to be tackled through both sector reform and investments (including those in increases in energy efficiency). The government plans to construct up to three nuclear power plants of 5,000 MW by 2020, with possible support coming from Russia (PMR Consulting, 2011).

Over the last years, energy price fluctuations mainly coming from Russia have also negatively affected Turkey as all the European countries and as observed on electricity price increases for industrial consumption (Appendix 3). Today, there have been ongoing discussions and arguments about the energy production problems mainly focused on nuclear energy between government and environmental non-governmental organizations. Turkey has also liberalized the investments on the energy sector and today the share of private sector on energy production has reached more than 45%. However, privatizations on the energy sector, especially to the foreigners, still debatable due to being a key sector for the country. The most important factor for the high energy costs in Turkey is due to the high indirect taxes on energy consumption. The sector is suffering from the missing national energy policies, high prices, and high loss and leakage rates.

3.3.6 Taxes and Incentives

The tax system in Turkey can be classified into three main categories income taxes, taxes on expenditure and taxes on wealth. The corporate tax rates in Turkey are the most competitive among

the OECD (Organization for Economic Co-operation and Development) member nations. The tax to GDP ratio has trended up in Turkey until recently. On 21 June 2006, a new Corporate Tax Law was enacted making significant amendments to the current applications, while simultaneously incorporating new concepts in the tax legislation. With the new Corporate Tax Law in place, Turkish corporate tax legislation now has visibly clearer, more objective and better harmonized provisions which are in line with international standards (ISPAT, 2011).

Income taxes in Turkey are levied on all income, including that of domestic and foreign individuals and corporations residing in Turkey. Non-residents earning income in Turkey through employment, ownership of property, business transactions, or any other activity which generates income are also subject to taxation, but only on the income earned in Turkey. In Turkey, the basic corporate income tax rate levied on business profits is 20%. The personal income tax rate varies from 15% to 35% according to income scale. Social security is not a tax but rather a payroll cost to the employer. The employer and employee contribute to a social security system comprising items such as sick pay, work related accidents, unemployment coverage, pensions, and other programs. Furthermore, the employer's contribution to social security is 19,5% and employee's contribution is 14%. The generally applied VAT (Value Added Tax) rate varies between 1%, 8%, and 18%. Commercial, industrial, agricultural, and independent professional goods and services, goods and services imported into the country, and deliveries of goods and services as a result of other activities are all subject to VAT. Other taxes are special consumptions tax and banking and insurance transaction tax (ISPAT, 2011).

Tax incentives in Turkey by 2011 are available for prioritized development zones, technology development zones organized industrial zones, free zones, research and development, private educational corporations cultural investments and enterprises. Some examples for tax exemptions and allowances include export of goods and services, international transportation, tax exemptions are provided for earnings derived by corporations from their overseas branches and both their domestic and overseas ventures if they meet certain conditions, t supply of machinery and equipment, including importation, to persons or corporations that are VAT taxpayers and that have an investment certificate issued by the relevant authority (ISPAT, 2011).

Even if the Corporate Tax Law in 2006 and reforms have made the taxations system better, Turkish taxation system still problematic compared to EU member states due to its inefficiency and complexity. In order to improve the investment environment, priority should be given to the struggle against the unrecorded economy and establishment of a viable tax system. Unregistered economy creates a comparative disadvantage with respect to fair competition for both foreign and domestic investors in Turkey (YASED, 2010).Turkey has to take immediate action and specify concrete measures on taxation system to attract more FDI to the country.

3.3.7   Infrastructure for Transport and Telecommunication
The telecommunications sector in Turkey has evolved considerably in recent years, starting with the privatization of 55 percent of Turk Telekom stocks to a MNE, Oger Telecom. The diversification of services within the telecommunications sector via mobile phones and the Internet has created new economies that represent attractive areas for further investments. Turkey's advantages include its logistics industry, which has developed significantly since its entry into the EU Customs Union. Its

geographic, physical and corporate infrastructure is one of the key attractions for potential investors (ISPAT, 2011).

Turkey's transportation network consists of 10.984 km of railways and 64,000 km of roads by 2010. The country has an extensive network of motorways and expressways connecting nearly all the country's major cities. There are 45 airports with paved runways, of which thirteen are international by 2010. It should be emphasized that Turkey also has a well-developed infrastructure construction industry of its own. Its aircargo capacity is about 1.7 million tons/year and its seaport handling capacity is about 310 million tons /year by 2010 (Ministry of Transport and Communication, 2011).

On the other hand, foreign investors are generally complaining about the complex and time consuming procedures that they encounter in the customs. Also internet and telecommunication prices are much higher than the EU member states and Eastern Europe countries. Considering the network readiness index published by World Economic Forum, Turkey is still keeping same its ranking in recent years and it is behind the developed and many such developing nations that Turkey is competing for attracting FDI (Table 14) (World Economic Forum, 2011). Moreover, even the Turkish authorities argues that the infrastructure of the country is competitive, Turkey is also lacking of infrastructure, which is the combination of basic infrastructure, technological infrastructure, scientific infrastructure, health and environment, and education, when recent annual infrastructure rankings of IMD World Competitiveness Yearbook are analyzed (Table 15) (IMD, 2011). Thus, Turkey should enhance its basic and technological infrastructure in order to attract more FDI. Liberalizing the infrastructure sectors properly will help to solve the problems and stimulate FDI. The lack of infrastructure should not hinder FDI but turn into potential new investments and FDI in the future. Studies show that liberalizing the natural monopoly sectors such as telecommunications, transport increases productivity, investments in that sector, product differentiation and product quality as well as reduce prices. In this sense, Turkey should continue its reform program in these sectors. The regulatory environment should be designed to attract FDI to these sectors, which will result in enhanced competition, and as a result of it better quality at lower costs.

Network Readiness Index 2010-2011, 2009-2010				
	2010-2011		2009-2010	
Country	Rank	Score	Rank	Score
Sweden	1	5,6	1	5,65
Singapore	2	5,59	2	5,64
Finland	3	5,43	6	5,44
Switzerland	4	5,33	4	5,48
USA	5	5,33	5	5,46
Taiwan	6	5,3	11	5,2
Denmark	7	5,29	3	5,54
Canada	8	5,21	7	5,36
Norway	9	5,21	10	5,22
Korea Rep.	10	5,19	15	5,14
Estonia	26	4,76	25	4,81
Slovenia	34	4,44	31	4,51
Czech Republic	40	4,27	36	4,35
Hungary	49	4,03	46	3,98
Italy	51	3,97	48	3,97
Croatia	54	3,91	51	3,91
Poland	62	3,84	65	3,74
Romania	65	3,81	59	3,8
Bulgaria	68	3,79	71	3,66
Turkey	71	3,79	69	3,68

Table 14 - Network Readiness Index 2010-2011, 2009-2010, The Global Information Technology Report 2010–2011

Overall Ranking for Infrastructure					
Country	2011	2010	2009	2008	2007
USA	1	1	1	1	1
Sweden	2	2	2	5	5
Denmark	3	5	6	7	4
Switzerland	4	3	4	2	2
Finland	6	6	3	12	11
Italy	30	32	34	33	35
Poland	34	36	39	37	40
Hungary	35	35	33	27	25
Romania	42	43	53	43	42
Turkey	44	45	45	42	45
Bulgaria	53	48	43	41	41

Table 15 - Overall Ranking for Infrastructure, IMD World Competitiveness Yearbook 2011

3.3.8   Research and Development

In Turkey, research and development (R&D) activities has been increasing considering the recent R&D performance of Turkey. Turkey is still trying to develop R&D base with big number of universities, institutes and private R&D units. Some science, technology and industry indicators of

Turkey like the share of R&D expenditures in GDP, total R&D expenditures, numbers of R&D personnel and researchers in labor force have showed good signals recently, but low in HRST indicator (Appendix 4). However, Turkey is still behind the many developed and developing EU member states according to those indicators. The country has been developing R&D policies to attract investors and set up sort of operations and provides the necessary help and assistance, including tax and social insurance relief. Recently such players as Bosch or Coca-Cola have decided to set up their R&D centers in Turkey following in the steps of many predecessors (including Mercedes, Unilever or HP) that decided to capitalize on the country's offerings in this area.

In OECD Science, Technology and Industry Outlook 2010 report, it is mentioned that indicators measuring innovation linkages in Turkey are weak. Only 1,3% of GERD (Government Expenditure on Research and Development) was financed from abroad in 2008, and a small 6% of firms collaborated on innovation activities in 2004-06. However, an above average 9% of Patent Cooperation Treaty (PCT) patent applications in 2005-07 were with foreign co-inventors. Turkey's indicators measuring human resources in science and technology (HRST) are weak. In 2007, it had only 2,4 researchers per thousand employments, but researcher numbers have grown by more than 12% over the past decade (OECD, 2010).

3.4 Strengths and Weaknesses of Turkey in Attracting FDI

In this section a SWOT analysis of Turkey in attracting FDI is prepared through the points made in previous parts and with reference to Loewendahls' interview with 30 MNC executives (Loewendahl & Ertugal-Loewendahl, 2001).

To start with, Turkey has a huge, young and dynamic population of 78.7 million which constitutes a large market and workforce when compared to CEECs (CIA, 2011). Within CEECs, Poland has the largest population with 38.4 million that is the half of Turkey's.

A second point is that Turkey's geopolitical position on the globe as a form of "bridge between Europe and Asia". This situation not only helps Turkey to be in a strategic position and attract investments that could be oriented from Europe to MENA (Middle East and North Africa) and to Russia and vice versa. For instance Barilla, an Italian pasta producer, considers moving its operations to Turkey to be able to be closer to MENA and China markets according to Karababa who holds responsible of investments to MENA region position (Istenhaber.com, 2011).

Examining Figure 10, one could say that in Turkey, wages are much lower than that of US and that of developed countries in EU. Nevertheless, it can also be said that being the ones in Bulgaria (123€) and Romania lowest, wages in Hungary, Czech Republic, Poland and Slovakia are under the amount that is paid as a minimum to Turkish workers (Eurostat, 2011).
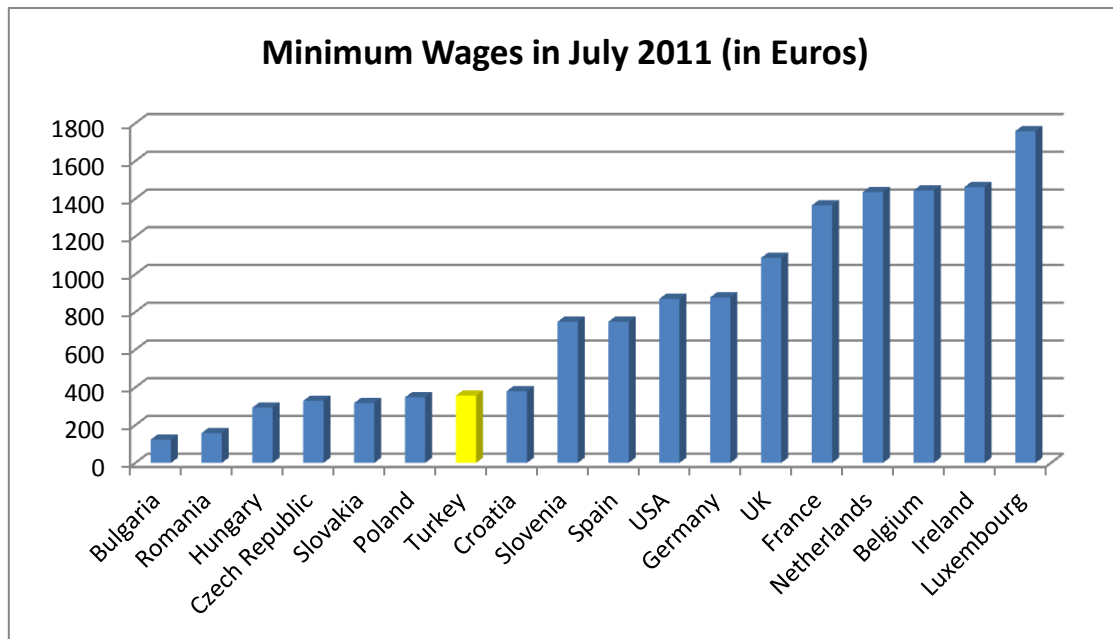
Figure 10 - Minimum Wages in July 2011 (in Euros), Eurostat

According to the findings in IMD World Competitiveness Yearbook 2010, in 2010, Turkey's high unemployment rate (11.9%), low employment rates (50% - for age range of 25-60) and low female labor force (28% - for the same range of age) are among the cons of Turkey in international trade. These numbers for EU in 2010 are as follows: 9.6% of unemployment, 68.6% of employment rate, 62.1% of female labor. While unemployment rate can be considered as a positive sign for investors due to abundance of a production factor, low employment rates and low female labor force can be considered as a loss in productivity of the country (Eurostat, 2011). Among other factors about labor force that might interest the investors, there is number of hours worked per week. Turkish men work for 53.3 hours and women for 48.4 hours whilst in EU the statistics show 41.1 hours for men and 39.3 hours for women.

As discussed in previous sections and deducted from benchmarking with CEECs, Turkey fails to attract FDI flows at an acceptable level with respect to her economic size. One of the main reasons behind Turkey's underperformance is long-running fiscal problems and macroeconomic uncertainty and could Turkey implement and sustain a major fiscal reform, lower inflation and macroeconomic stability can be yielded (Dutz, Us, & Yilmaz, 2005). Another reason of underperformance lies in infrastructure, Yilmaz highlights that in comparison with Czech Republic, Hungary and Poland; Turkey is behind terms of education, technology and internet infrastructure and R&D investments according to IMD World Competitiveness Yearbook 2005 (Yilmaz, 2007). Yet in IMD World Competitiveness Yearbook 2010, Turkey is considered as a nation with high telecom connectivity of people and firms, a possessor of quality air transportation and qualified engineers in terms of infrastructural factors (IMD, 2010). On the contrary, low computers per capita, total public expenditure on education as a percentage of GDP constitute her weak points looking at the Table 16.

	Turkey	Poland	Czech Republic	Hungary
Percentage of high-tech exports	2,06	3,07	13,23	25,63
Illiterates over 15 years of age	13,5	1	1	1
Telecommunication investments (% of GDP)	0,1	0,16	1,66	0,59
Internet users among 1000 people	105,5	270,3	344,7	293,6
R&D investments per capita (USD)	17,6	29,1	112,4	77,4

Table 16 - Some factors affecting Turkey's competitiveness, IMD World Competitiveness Yearbook 2005

Turkey is trying to facilitate FDIs through amendments and works on the improvement of investment environment. As mentioned in this work, Turkey made great changes in FDI law, transforming the economy from a relatively protectionist regime towards a very liberal one. Besides amendments of 1954, 1980 and 2003, works such as promotional activities, incentives and bilateral agreements help to make investment environment more favorable for both domestic and foreign investors.

In their paper in which they study three cases Dutz, Us and Yilmaz highlight that Turkey cannot attract FDI at desired level due to governance and institution-related problems. They argue that the rule of law is not respected and some legal and judicial constraints are present; to say, rule and decision makers behave in a politically convenient manner (Dutz, Us, & Yilmaz, 2005). This situation does not show an encouraging picture to the investors due to unpredictable nature of the investment environment.

Another point is that affects investors decision to invest is the conflict in the south eastern part of Turkey. About 2 million Kurdish people living in this region want to found their own country with the claim that Turkey does not respect and protect their rights, or make investments to increase the welfare in this region. PKK, a terrorist organization, tries to disturb the peace in cities of this region through propagandas and through ambushes to Turkish soldiers that are close to borders. One could say that this does not ensure a comfortable investment environment for that region.

STRENGTHS	WEAKNESSES
-Market size - Geographical location -Skilled & educated workforce -Low costs compared to developed countries -Quality of local business -Proximity to EU and customs union -Proximity to other markets -Good infrastructure -FDI enabling environment -Large, flexible workforce -Prospects of EU membership -Liberal FDI law -Dynamic and developing economy -Economic stability in last years -Qualified manpower -Incentives	-Political instability -Macro-economic instability -Lack of promotion and image -Legislation and bureaucracy -Human rights -Kurdish issue -Unemployment? -Gaps to legally protect intellectual property rights -Unregistered economy -High labor cost with respect to competitors such as Bulgaria and Romania -Economic instability in the past -Slow and unreliable judicial system -High tax rates
OPPORTUNITIES	THREATS
-EU accession -Better promotion -Political stability -Regional stability -Low cost advantage -New legislation and regulations -Energy gateway -Economic growth -High potential of the economy to grow -Young and dynamic population -Privatizations	-Political instability -Macroeconomic instability -Not join EU -Competition from CEECs -Poor image and promotion -Regional instability -No progress on legislation and regulation -Kurdish issue/human rights -Fragile structure of economy and openness to risks -Dependence on other markets -Political risks -Obstacles to EU membership

Figure 11- SWOT analysis for Turkey

3.5 Works on the Improvement of the FDI Environment in Turkey

As discussed in previous sections, Turkey could not reach her potential by attracting quite low FDI flows with respect to her economic size. Amendments dated 1954, 1998 and 2003 were the most important ones since after these changes in FDI laws, level of FDI inflows altered significantly. According Yavan, works on the improvement of FDI environment in Turkey first started in 1999, with the works of an FDI commission formed during the preparation of 8th five years development plan. Yavan argues that formation of such a commission makes sense in showing the importance given by the government to the topic of FDI (Yavan, 2006).

In 2001, with the aim of improvement of the investment environment and reducing red tape, Council of Ministers Leading Decision started a comprehensive reform program. YOIKK (Coordination Council for the Improvement of the Investment Environment) and IAC (Investment Advisory Council of Turkey) were the two platforms to reveal the views and priorities of public and private sectors (YOIKK, 2011). While YOIKK tries to develop policies and generate solutions to administrative barrier stumbled upon domestic and foreign investors, IAC receives recommendations from executives of large MNCs and international institutions concerning investment environment (YOIKK, 2011). YOIKK, via its 12 technical committees, looks forward to solving problems encountered by the investors in the following 12 areas: company transaction, employment, licensing, location of investment, taxes and incentives, foreign trade and customs, intellectual and industrial property rights, investment promotion, foreign direct investment legislation, SMEs, corporate governance, research and development. These committees' reports are assessed to make changes in the law concerning the problematic topics in the current state.

With the contribution of YOIKK, major achievements in investment environment of Turkey can be listed as ((Undersecretariat of Treasury, 2009)):

- FDI law
- Simplification of Business Start-Up
- Investment Support and Promotion Agency of Turkey
- Trade Registry Automation Project
- Employment Package
- Social Security Reform
- Regulations on mining and fuel sectors
- Minimum living allowance system
- Communiqué on Principles to be Followed by Joint Stock Corporations Subject To Capital Market Law
- Increased flexibility in the labor market
- Improved infrastructure in strategic sectors
- Improved protection for intellectual property rights
- New investment incentive system

As discussed in previous sections, thanks to the amendments of 2003, Turkey's FDI law became one of the most liberal laws on the globe. Through the simplification of business-start up procedures and shortening of these, investors have the possibility to invest in a very short period of time, under OECD average.

Besides these two platforms YOIKK and ICA, ISPAT (Investment Support and Promotion Agency of Republic of Turkey Prime Ministry) is another organization to work for a more FDI enabling environment. ISPAT, having local representatives for numerous countries, promotes investment opportunities in Turkey and assists to investors before, during and after their entry in the country (ISPAT, 2011).

According to ISPAT, in order to promote investments in manufacturing and services, energy sector and exports, investment incentive scheme is revised incessantly and now, local and foreign investors have their rights equal in the following (ISPAT, 2011):

- The general investment incentive regime
- Incentives for large-scale investments

- Region and sector-based incentives
- R&D support
- Support for SMEs
- Industrial Thesis (SANTEZ) program
- Loans for technology development projects
- Training support
- State aid for exports

These incentives and supports mainly include reduced taxes (corporate or individual income), tax exemptions such as VAT or customs duties, credit allocations, partnerships with universities, interests with low or no interests, supports for exports and they vary according to location, scale and subject of the investments (Appendix 5).

Even though Turkish tax system is considered to be complicated according to many authors such as Yilmaz who also considers it to be highly affected from political powers, it is being revised and amended continuously (Yilmaz, 2007). There are tax incentives to technology and prioritized development zones, organized industrial zones, free zones, R&D, private educational corporations and cultural investments and enterprises. Some of the transactions are exempted from VAT contain export of goods and services, international transportation, earnings derived by corporations from overseas branches (if certain conditions are met).

To attract investments, Turkey created so called Special Investment Zones which take three different forms: Technology Development Zones (TDZs), Organized Industrial Zones (OIZs) and Free Zones (FZs). The first, TDZs are areas to support R&D activities and attract investments in high technology researches. TDZs benefit from tax exemptions such as corporate tax or taxes on salaries. The second type of investment zones, OIZs, having ready-to-use infrastructure such as roads, water, natural gas, communications etc., allow companies to make use of infrastructure at low costs and to be able to be exempted from municipality taxes. Finally, FZs which are exempted from customs duties and taxes such as VAT, corporate income tax are created with aim of increasing export focused investments. In FZs, companies are free to transfer profits abroad and to Turkey.

Turkey uses fiscally and administratively independent bodies to regulate and monitor business environment. Competition Authority (CA), Energy Market Regulation Authority (EMRA), Banking Regulation and Supervision Agency (BRSA), Capital Markets Board of Turkey (CMB), Telecommunications Authority, Tobacco, Tobacco Products and Alcoholic Beverages Market Regulation Board (TAMRB), Privatization Administration are some of these authorities together with TUBITAK, TTGV and KOSGEB which are institutions that work on R&D activities. Bilateral Investment Treaties (BITs) form a further way of providing a better FDI enabling environment. According to Undersecretariat of Treasury, through BITs, bilateral flows of capital and technology and protection of investments of foreign investors are ensured. BITs allow Turkey to maintain sound relationships with countries that already invested in her and to have new and strong investment relations with countries that possess a potential to invest. Currently, Turkey has signed BITs with 82 countries and is in negotiation with Latin American and African countries as Ministry of Foreign Affairs policy predicts. Uruguay, Colombia, Ghana, Uganda and Zambia are those countries that are planned to have agreements in 2011 in addition to Albania, Azerbaijan, Bangladesh, China and Kosovo (Undersecretariat of Treasury, 2011). As Turkey's accession to EU becomes more questioned,

importance of BITs increases and new investors are looked for through these. In their report, Undersecretariat of Treasury stresses that some of the old-dated bilateral agreements with East European, Balkan, Caucasian, Asian and Middle Eastern countries are renegotiated in order to protect Turkish investors in these countries and foreign investors in Turkey (2011).

Double taxation prevention treaties that Turkey has with 71 countries contribute to the protection of both foreign and domestic investors (ISPAT, 2011). Another type of agreement, social security agreements are signed with 21 countries and increases with respect to increasing FDI sources. This type of agreements eases the relocation of expatriates between countries (ISPAT, 2011).

As a step towards full EU membership, Turkey has a customs union with EU since 1996. This agreement permits the abolishment of customs restrictions between Turkey and EU countries. Besides her customs union with EU, Turkey has free trade agreements (FTAs) with 16 states including Albania, Bosnia and Herzegovina, Chile, Croatia, EFTA member countries (Iceland, Norway, Switzerland and Lichtenstein), Egypt, Georgia, Israel, Jordan, Macedonia, Montenegro, Morocco, Palestine, Serbia, Syria, Tunisia. According to ISPAT, Turkey continues to increase number of FTAs since many MNCs are considering Turkey as a second supply source and manufacturing base not only for EU and Turkey markets but also MENA and Black Sea regions (ISPAT, 2011). It can be said that Turkey plays an important and intermediate role for investors of both sides.

Even though the first years of 2000s witnessed many attempts of improvement of investment environment through amendments, agreements and foundation of organizations, there are still problematic areas which should be according to IAC meeting in 2010 (See Appendix 5). These areas of focus will be assessed by YOIKK Technical Committees and other institutions to provide better FDI enabling environment. However, as in the example provided by YASED, although it became easier for foreigners to obtain a work permit, some difficulties are faced due to red tape (YASED & TUSIAD, 2004). One could say that Turkey fails to turn theory into practices and this situation constitutes one of main problems behind Turkey's failure to attract desired amounts of FDI flows.

4   ECONOMETRIC ANALYSIS OF THE EFFECTS OF FDI ON ECONOMIC GROWTH IN TURKEY

4.1   Literature Review

During the last two decades the number of works questioning the nature of the relationship between FDI and economic growth incremented significantly as many countries started to consider FDI as an important factor mainly as an enhancing factor to economic growth. Whilst a certain number of works on this topic only analyze the causality relationship between FDI and economic growth, some others look for the effects on each other with the help of different variables.

To start with the oldest study in this section, an analyze made by Papanek for 51 less developed countries for a period including 1950s and 60s concluded that the effects of FDI and savings constitute about one third of a change in economic growth (Papanek, 1973).

Fry's econometric studies concerning 16 developing countries for the 1975-1991 period resulted in a negative effect of FDI on economic growth for 11 countries while a positive one for the remaining (1993). According to the author, the reason for the difference in the effects lies on the stability of these five economies (Fry, 1993).

Balasubramanyam, Salisu and Sapsfort used cross sectional data from developing countries to discover that FDI has a more considerable effect on economic growth among the countries that adopted export incentive policies compared to import substitute policy adopters (Balasubramanyam, Salisu, & Sapsfort, Foreign Direct Investment in a Macroeconomic Framework – Finance, Efficiency, Incentives, and Distortions, 1996). Another work prepared by the same authors stresses that positive effects of FDI on economic growth depend on the size of domestic market, competitive environment and presence of human capital (1999).

Borensztein, Gregorio and Lee, using seemingly unrelated regression technique (SUR) and accounting 69 developing countries and panel data for 1979-1989, found out that FDI, as an important way of technology transfer, affects economic growth depending on the level of human capital available on the host economy (1998).

Mello examined OECD and non OECD countries through a time series and panel data analyzes to conclude that as the difference between technological levels increase, effects of FDI on economic growth are on the negative way (Mello, Foreign Direct Investment-Led Growth: Evidence From Time Series and Panel Data, 1999).

Zhang evaluated 11 East Asian and Latin American economies using real FDI stock values and real GDP (2001). The results obtained in this study showed that human capital, liberal trade regimes, education level, large scale export oriented FDIs and political stability influence FDI's relationship with economic growth (Zhang, 2001).

Alfaro, Chanda, Kalemli and Sayek worked on panel data and empirical analyses of two different samples of mixes of OECD and non OECD countries to come to the conclusion that FDI alone is not sufficient to promote economic growth, yet countries with developed financial markets can benefit from FDI flows for economic growth (Alfaro, Chanda, Kalemli-Ozcan, & Sayek, 2002).

Carkovic and Levine using ordinary least squares method for examining the data about 72 countries for a period of 35 years on GDP per capita and FDI inflows as a percentage of GDP discovered that

without taking into account other variables, FDI does not have a significant effect on economic growth (Carkovic & Levine, 2002).

Alici and Ucal constructed a VAR model to investigate causality between export, FDI and growth rate using data for 1987-2002 period from Turkey. They found out that there is no significant causality between FDI and growth (Alici & Ucal, 2003).

Basu, Chakraborty and Reagle utilize data from 23 developing countries to make a cointegration test to discover significant causality relationship between FDI and economic growth. In open economies, in both short and long-terms, a reciprocal causality is found out while in relatively less open economies a long term causality relationship can be seen from FDI towards economic growth (Basu, Chakraborty, & Reagle, 2003).

According to the results of vector autoregression (VAR) model and Granger causality test made by Choe, there is a reciprocal Granger causality relationship between FDI and economic growth and the one that is from FDI to economic growth is stronger than the causality from economic growth to FDI (Choe, 2003).

Mencinger's study on transition economies for 1994-2000 period could not notice a causality between FDI as a percentage of GDP and fixed capital investments as a percentage of GDP to pronounce the low level of greenfield investments, M&As and privatizations made in hurry as the cause of this result (Mencinger, 2003).

Hsiao and Hsiao in their work on Far Eastern countries for which they applied Granger causality test and built a VAR model for 18 years period using GDP, exports and FDI stock data found out that there are causality relationships from FDI towards GDP and exports. Among other results of the work there is the finding that FDI and export contribute positively to economic growth (Hsiao & Hsiao, 2004).

Merlevede and Shoors evaluated 25 transition economies on the basis of the effects of economic reforms and FDI on economic growth through a simultaneous equation system to conclude that while countries that had adopted economic reforms earlier enjoyed higher economic growths than countries that were newly adopting these policies. In the latter, economic growth is negatively affected yet generally speaking, FDI flows influence economic growth in a positive manner (Merlevede & Schoors, 2004).

Darrat, Kherfi and Soliman used GDP per capita, gross domestic investment, labor force, government consumption, inflation, exports and foreign debt data for 6 MENA and 17 CEE countries to form their 2 SLS model. The results of the empirical work revealed that FDI had a generally negative or statistically insignificant effect in MENA and non-EU accession countries. Nonetheless, they discovered a positive and statistically insignificant effect of FDI on economic growth in EU accession countries in CEE region. Another result obtained from the work was that stock of human capital plays an important role to experience a positive of FDI on economic growth (Darrat, Kherfi, & Soliman, 2005).

Hansen and Rand, in their work comprising 31 developing countries and their data for years 1970 to 2000, had done a cointegration test and VAR analysis to find out a strong causality from FDI to GDP in the long term (Hansen & Rand, 2006).

Demirel used a three stage least squares (3 SLS) method to analyze the relationship between FDI and growth in Turkey for 1984-2005 period. He determined causalities from economic growth to FDI and vice versa. Other variables that affect economic growth positively with certain significance level were capital inflows, foreign aids, and savings (Demirel, 2006).

Ornek made use of cointegration and VAR models to analyze data about capital inflows, GDP and savings for years 1996 to 2006 to conclude that short term capital inflows and FDI have positive effects on economic growth in Turkey (Ornek, 2006).

Turkcan's econometric model on the basis of data from 23 OECD countries for the period 1975-2004 was estimated using simultaneous equation system. The results of this study showed that economic growth benefited from incrementing FDI flows and exports (Turkcan, 2008).

Through a VAR analysis of data for the period 1995-2007 for Turkey, Gerceker questioned the relationship between FDI and economic growth. His results showed that there is Granger causality from FDI to economic growth, and that a change in FDI would affect growth positively (Gerceker, 2010).

Yilmazer tried to examine FDI's and foreign trade's influence on economic growth via Granger causality method for 1991-2007 period in Turkey. According to the outcomes of her work, there is a correlation between economic growth and export and import, but there is no strong causality between FDI and growth (Yimazer, 2010).

Aras' empirical analysis with VAR model and using data for years 1998 to 2009 from Turkey demonstrated that there is a causality relationship from economic growth to FDI. Impulse functions and variance decomposition done by the author supported the finding that FDI does not have a significant but negative effect on economic growth (Aras, 2011).

4.2   Selection of Variables

Given the works evaluated in literature review part and indicators of Turkish economy, a model containing economic growth, FDI inflows, human capital, inflation, fixed capital investment and trade openness is built. As the main area of interest of this work is on the relationship between economic growth and FDI, GDP and FDI inflows as a percentage of GDP are the foremost variables to be included to the model.

The reasoning behind the selection of human capital lies on the theoretical nature of this factor. As it is highlighted by many authors, human capital must be present at a certain level for a country to benefit from FDI flows. Therefore this factor is included in the model to understand if Turkey has the necessary level of human capital to absorb FDI flows and to what extent she can benefit from these flows. To say, human capital was thought to be a sign of the potential and capability to internalize technology to be used to enhance domestic production and thus economic growth.

Inflation which was integrated into the models of some authors as well and which is considered as a big problem for Turkish economy with considerable changes during the last two decades is thought to have a relationship with economic growth. Authors argue that inflation can have either positive or negative effect on economic growth. Being a remarkable macroeconomic indicator for Turkish economy and having unclear effects on economies, inflation is considered to be an interesting variable to be included in the model.

A further variable that is integrated to the model is trade openness which includes import and export data. As stressed in Yilmazer's work with reference to two diverse studies by Grossman and Young, foreign trade increments economic growth rate through efficiency improvements, exchange and proliferation of technology (Yimazer, 2010). Trade openness is an appealing variable to be accounted in the model since in Turkey difference between imports and exports has an enlarging trend and the effects of this increasing interaction with the rest of the world is believed to be worth analyzing.

Fixed capital investment which consists of both private and public capital investments are regarded as future growth prospects of the economy. Government's works on the improvement of infrastructure which intend to improve the current situation for short term and to attract more FDI flows to have an influence on GDP indirectly in a relatively longer term. Taking into account that private investment contribute to domestic product, fixed capital investment is integrated to the model as an indication of the value added in the economy.

4.3   Research Methodology

4.3.1   Dataset and Model Description
In order to assess the relationship between economic growth and a set of variables including FDI as the main factor of interest, human capital, a multiplication of FDI and human capital, inflation, fixed capital investment and trade openness, a model that uses quarterly data for 1995-2010 period for Turkey was built. Data about these variables can be found in Appendix 6.

To evaluate economic growth, which is denominated as the change in value of GDP between two periods, quarterly GDP values obtained from Ministry of Development of Turkey are used (Ministry of Development of Turkey). Being all GDP values in USD, missing quarterly data for years 1995 and 1996 were assumed to be the one fourth of the yearly data (Figure 12). As voiced by Aras, in order to decrease variability in the data and to yield linearity of data which is difficult to obtain in normal values, log transformation of this data is made (Figure 13) (2011).
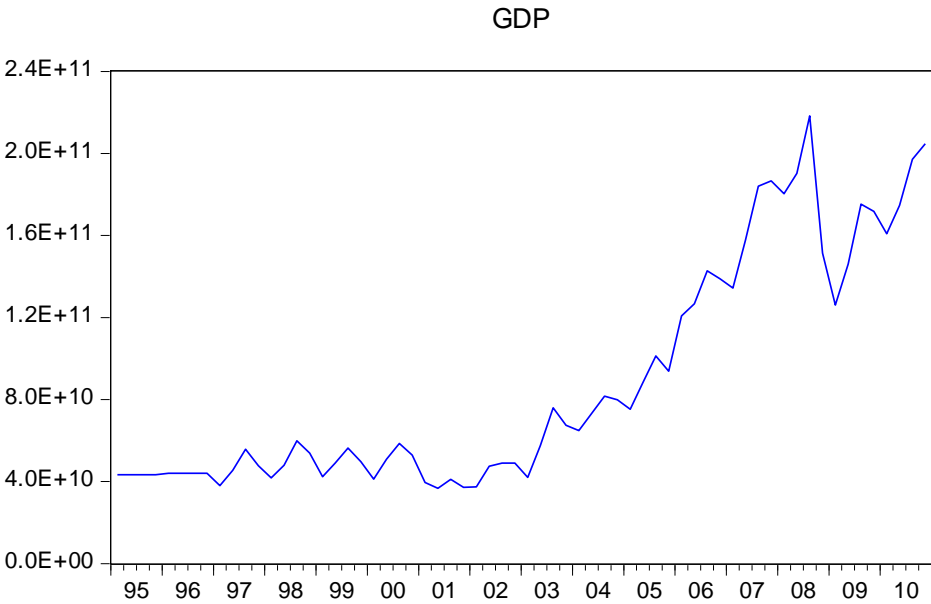
Figure 12 - GDP (USD) vs. Time

LGDP
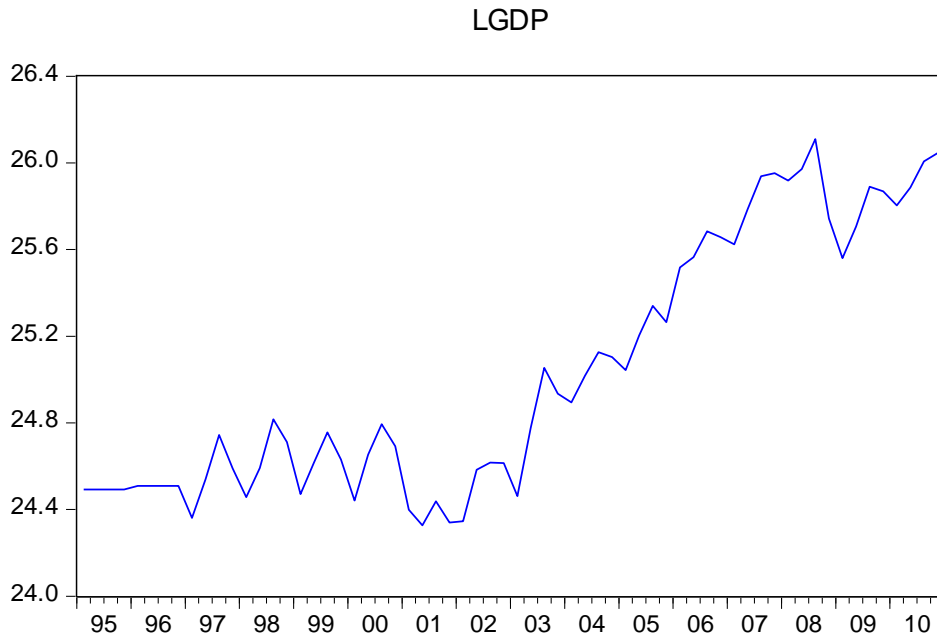
Having the logarithmic values for GDP and a general idea about the yearly deviation of the data from the graphs, a seasonality analysis is to be done with the purpose of be able to use the data in the model (Figure 14). According to the graph below, quarterly means are relatively close and no obvious pattern can be detected; thus it is possible to say that there is no seasonality in the GDP data.

LGDP by Season

Means by Season
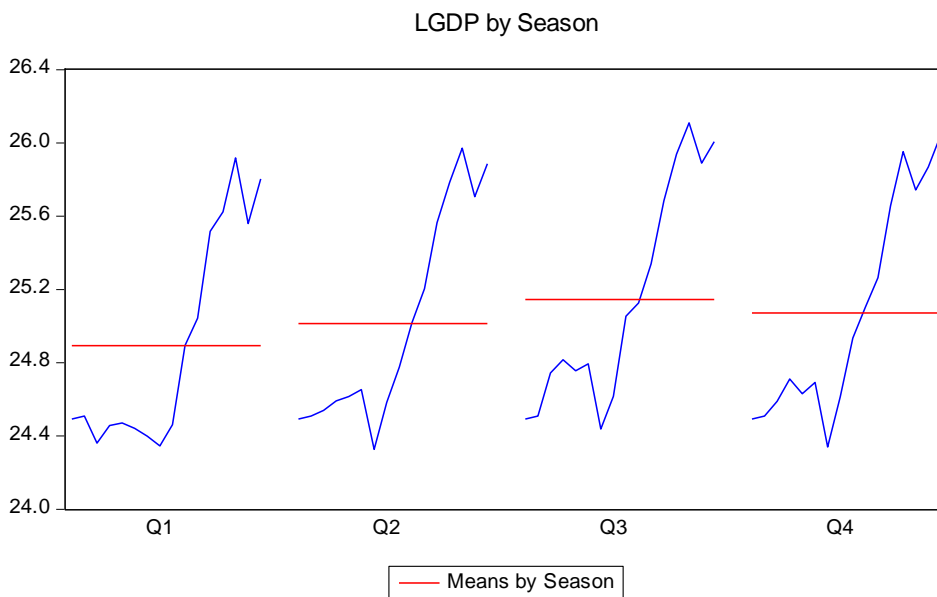
The main factor on the right hand side of the model, FDI, is calculated as a percentage of GDP from data obtained from Ministry of Economy. Missing data concerning quarterly FDI inflows for the period 1995-2002 was arranged by the conversion of yearly data according to the data for approved FDIs. Since FDI variable is used as a ratio, it did not undergo a special treatment (Figure 15).

FDI
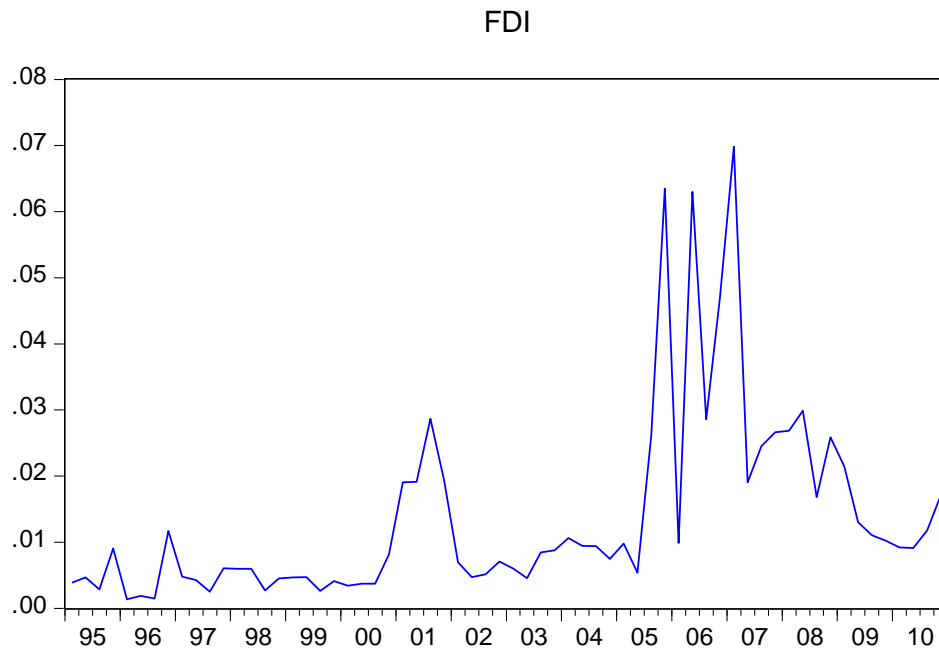
Looking for the seasonality in FDI data, as it is the case for GDP, quarterly means are relatively close and no obvious pattern can be identified; hence it is possible to say that there is no seasonality in the FDI data (Figure 16).

FDI by Season
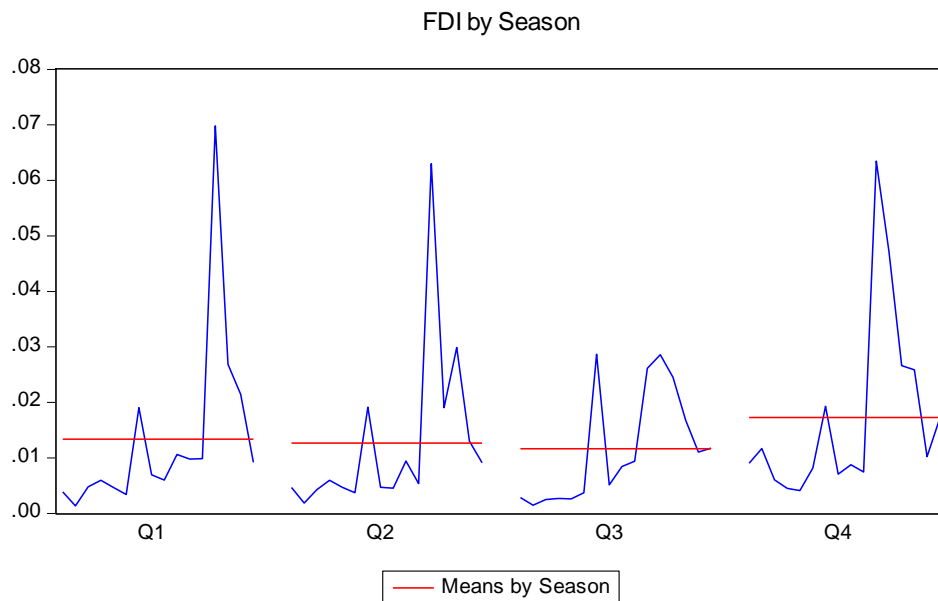
Human capital (H), which is calculated based upon the proportion of total education budget in GDP, is obtained using data from Republic of Turkey Ministry of Education. To attain quarterly values, yearly data was spread equally to the quarters. Being a ratio, this data did not go through logarithmic conversion (Figure 17).

H
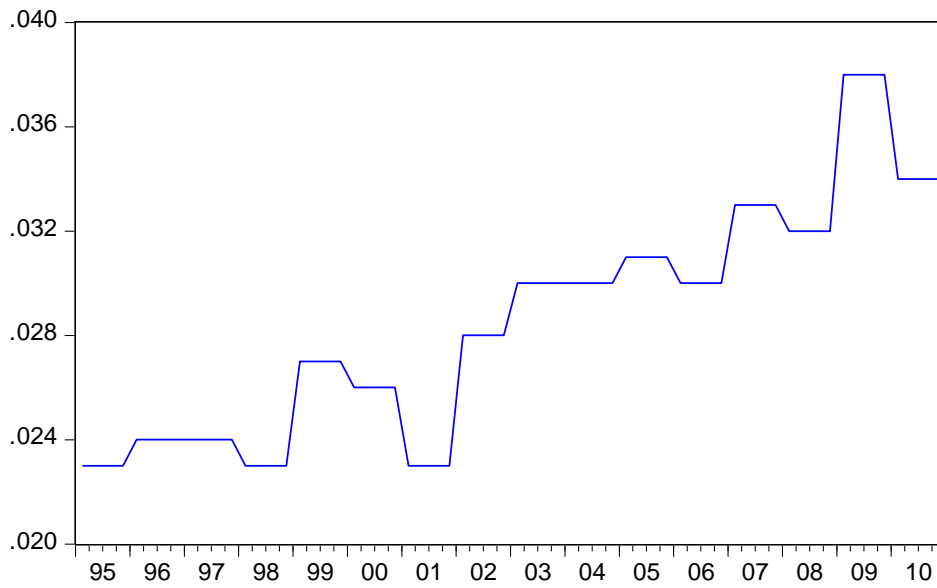
If the seasonality in human capital data is analyzed, quarterly means are equal due to the assumption made in the previous paragraph; therefore it is not possible to mention seasonality in the data (Figure 18).

H by Season

Means by Season
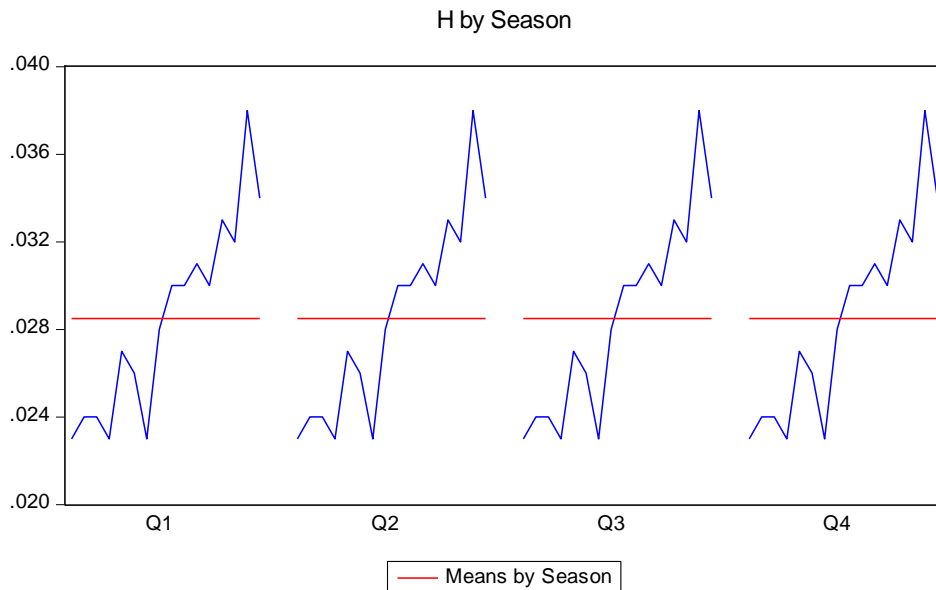
Another variable FDIH is computed through the multiplication of two variables FDI and H. This variable does not undergo any transformations and has the following plot (Figure 19):
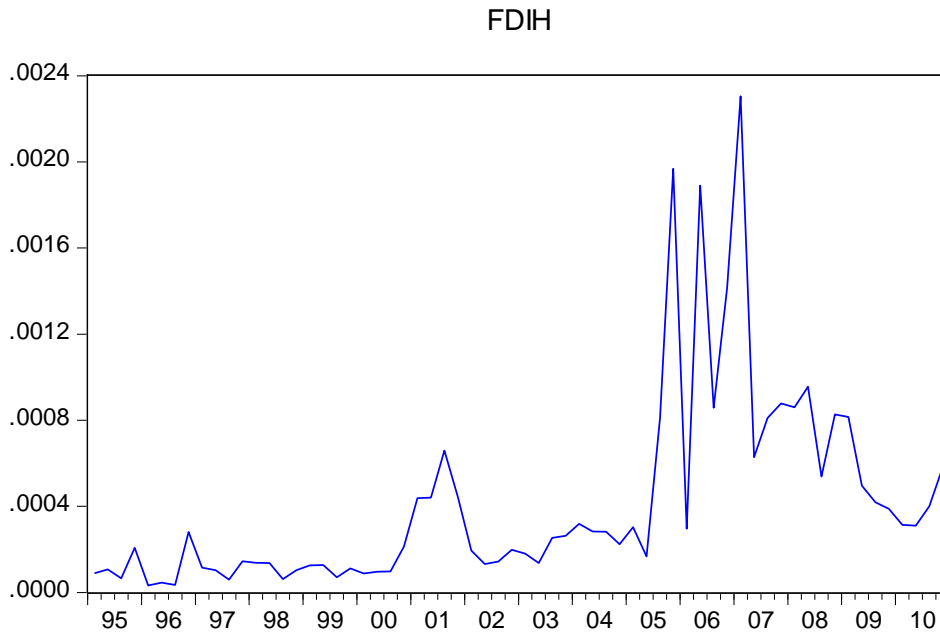
FDIH

The seasonality of this time series can be said to be absent as there is no noticeable difference between means of quarters and there is no evident pattern in FDIH data (Figure 20).

FDIH by Season
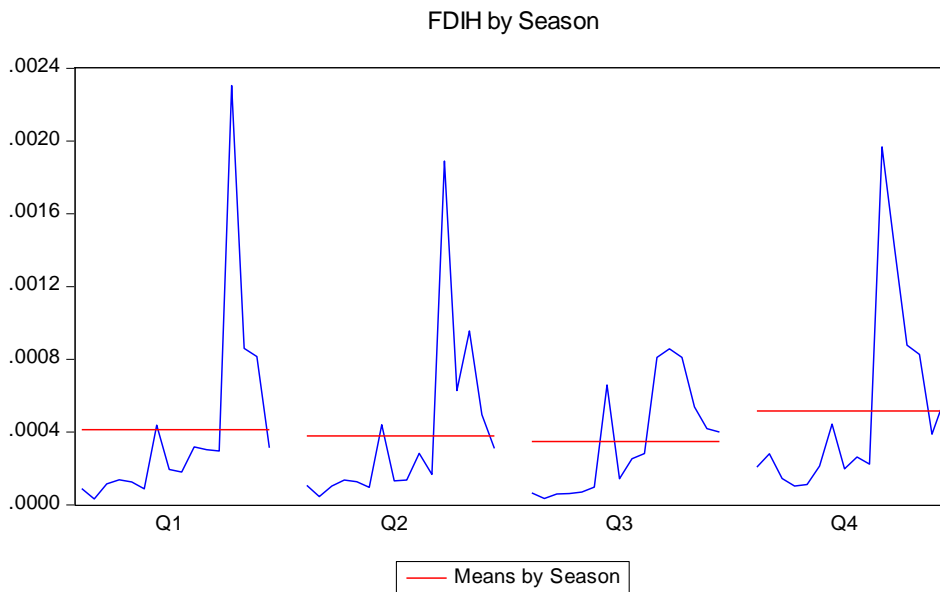
A further variable is inflation (INF) based on consumer price index and is determined using quarterly data from Turkish Statistical Institute. The values are given as the variation in the index with respect to the previous year in the same quarter. Since inflation values are expressed in percentages, no specific treatment was conducted. Moreover, from the graph below, it is possible to notice a declining trend in inflation (Figure 21).

INF
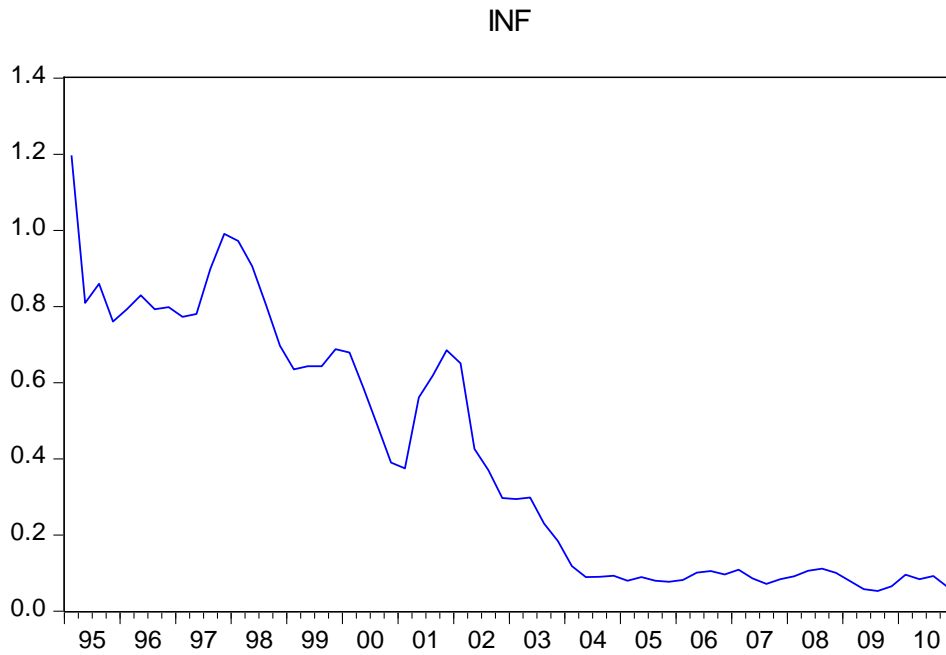
Scrutinizing seasonality, quarterly means are comparatively close and no apparent pattern can be identified; for this reason one can say that there is no seasonality in the data about inflation (Figure 22).

INF by Season
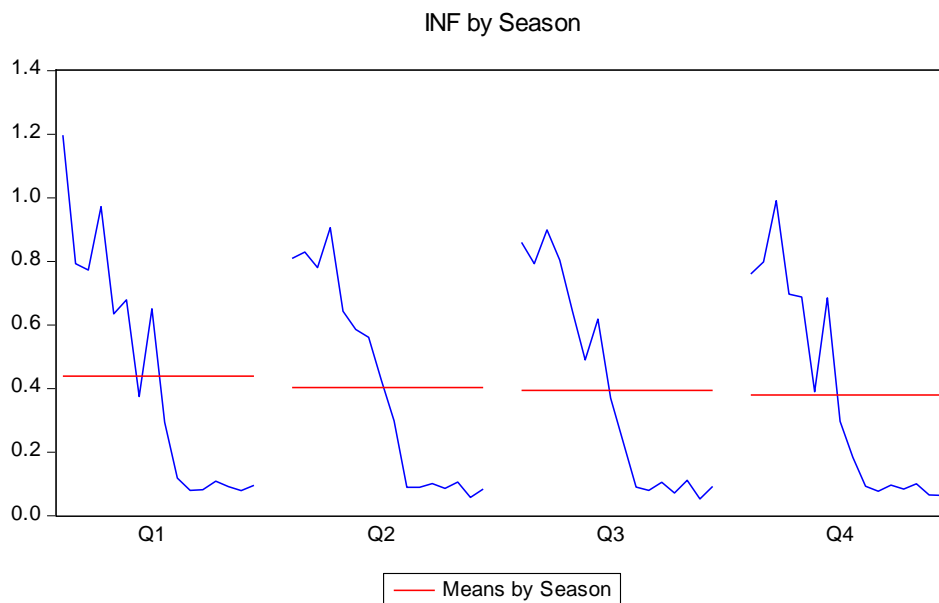
Fixed capital investments (FCI) which take into account both public and private sector investments have their yearly data obtained from Ministry of Development of Turkey. In order to be able to put into the model, first the available data in TL was converted in USD with respect to yearly exchange rates retrieved from Central Bank of Turkey. Secondly, these yearly values were divided in four to attain quarterly data (Figure 23). As a final step, logarithmic transformation to FCI data was made due to the motives explained before (Figure 24).

FCI

LFCI
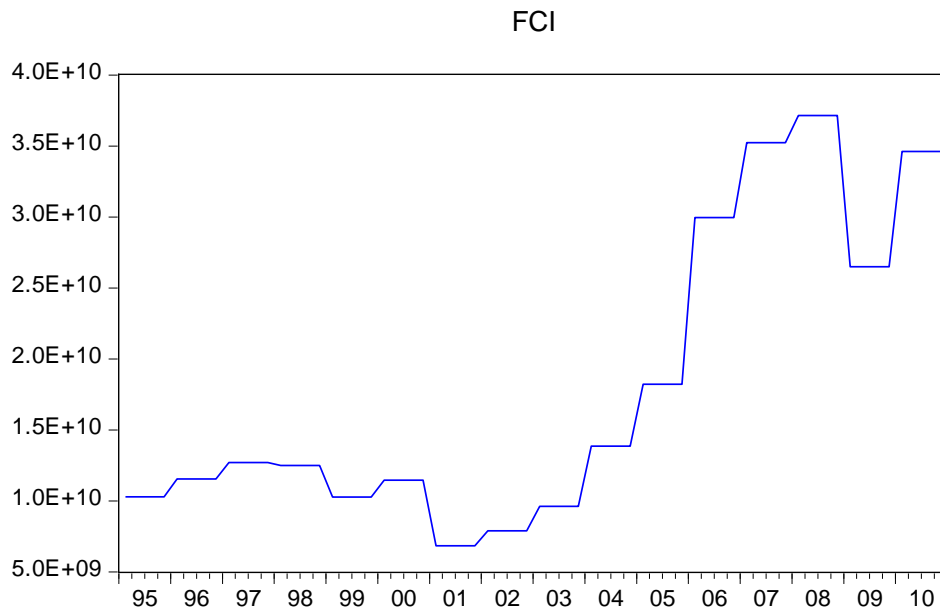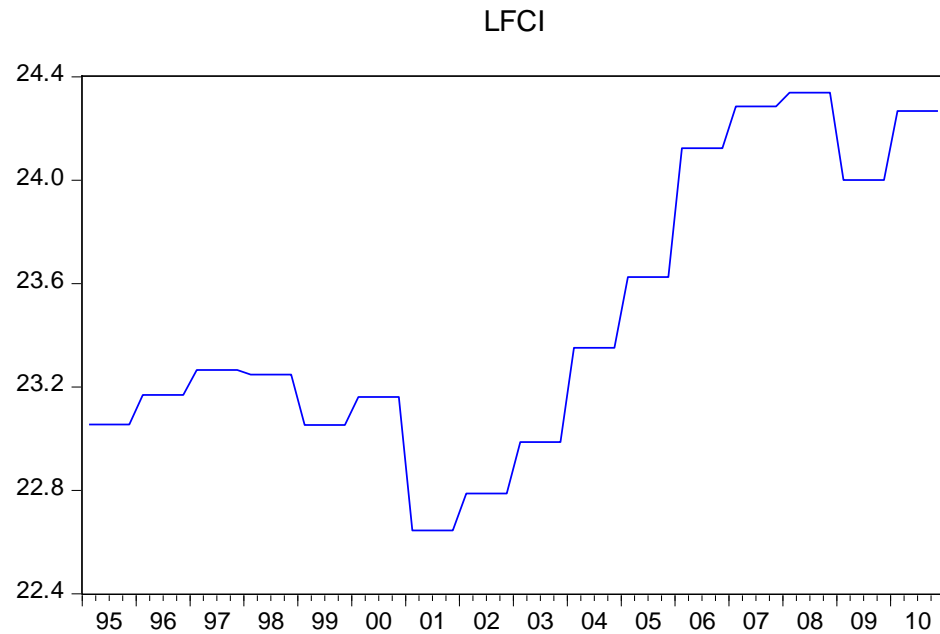
Covering the logarithmic values for FCI and a picture about the yearly deviation of the data from the graphs, seasonality analysis come to the conclusion that as a consequence of the equality of means due to the assumption made in the previous paragraph, it is not possible to talk about seasonality in the data (Figure 25).
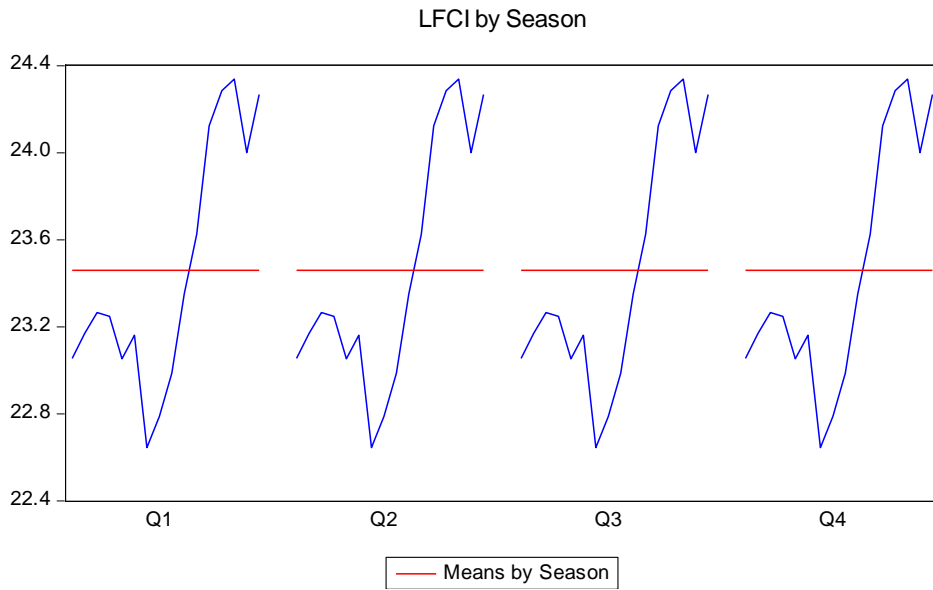
Figure 25 - log (FCI) vs. Quarters

Finally, trade openness (TO) which is calculated as the sum of imports and exports divided by GDP for a given period. Data about quarterly imports and exports were gathered from Turkish Statistical Institute to be divided by GDP data obtained in the way explained before. Being a ratio, no logarithmic conversion was made to this variable. From the Figure 26, the variation of trade openness can be observed:
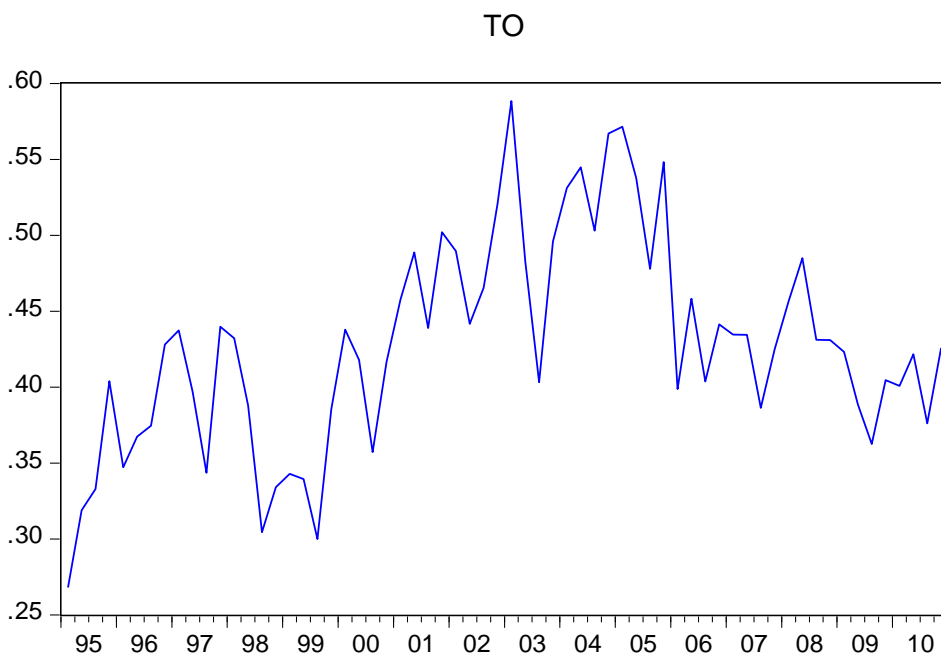
Figure 26 - Trade Openness vs. Time

Through the seasonality assessment it can be said that again quarterly means are comparatively close and no obvious pattern can be identified; therefore it is possible to say that there is no seasonality in the FDI data (Figure 27).
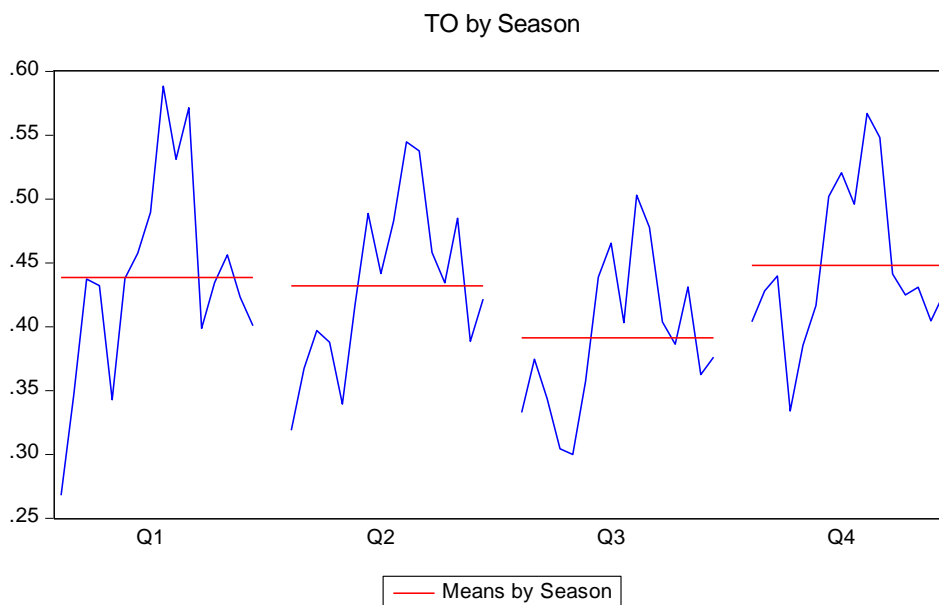
Figure 27 - Trade Openness vs. Quarters

According to the literature researches, the economic growth (GDP) as a dependent variable is assumed to be a function of independent variables consisting of foreign direct investment (FDI), human capital (H), FDI and H relationship (FDIH), consumer price index as an inflation rate (INF), fixed capital investments (FCI) and trade openness (TO). The simple form of the model is written as;

GDP = F(FDI, H, FDIH, INF, FCI, TO)

The open from of the model is as follows;

$$= \quad + \quad + \quad + \quad + \quad + \quad + \quad \tag{1}$$

In equation 1 where;

: Gross Domestic Product (as ln(   ))

: Foreign Direct Investment (as   /   )

: Human Capital (as Total Education Expenditure/   )

: Foreign Direct Investment and Human Capital Relationship (as   x   )

: Inflation

: Fixed Capital Investment (as ln(   ))

: Trade Openness (as (+   )/   ) where   : Exports and   : Imports

: Constant and   : Error term

4.3.2   Method

All the analysis and tests were conducted by econometric analysis software that is Eviews 7.1. First of all, data transformation approach is applied by taking natural logarithms of the some variables in order to reach less variability in the time series such as GDP and FCI. Since all other variables are

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ratios, their original values were kept. After data transformation process, seasonality graphs of all series were examined in order to detect seasonality. For the next step, unit root tests (ADF) were carried out to search for the stationarity conditions of all deseasonalized series. If a non stationary series was detected then this series was differenced and the differenced series were kept for further analysis. In order to explain the bidirectional and unidirectional causality relationships of variables, Granger causality test was formed for different lag lengths. In the next phase, while detecting the existence of long term relations between the variables, it was benefited from cointegration test. Since the existences of cointegrated vectors were proved during cointegration test, VECM model was chosen to explain the relations of all variables deeply in short and long term. Throughout VECM model it was utilized from the impulse-response functions and variance decomposition. When diagnostic and unit root tests of the model were passed, another model which is least squares was conducted just to make brief comparison between this model and others.

In the economic model of this study where GDP is dependent variable, on the basis of literature review the expected sign for the coefficient of FDI is uncertain. Some researches argue that the impact of the FDI on economic growth depends on the development level, macro economic conditions and infrastructure level of the host country. Some are argues that the nature of the FDI such as greenfield or M&A investment is also another factor to discuss favorable effects of the FDI on a host economy. Another argument rises for the negative effect of the FDI if it suppresses the domestic firms and investments. However, governments have tendency to attract more FDI in order to support the economic growth of a country. But still there are many studies specifying that the FDI has a positive impact on economic growth. The expected sign for the coefficient of H is positive since well-educated and qualified human resources can add significant value to countries' development. The expected sign for the coefficient of FDIH is also controversial because researchers argue that if the human capital level of a host economy is not enough to absorb favorable effects of the FDI then FDI may not support the economic development of the country. In addition, the expected sign of INF is negative because some scholars indicate that high and instable inflation rates negatively affect the economic growth of a country in the long term. Moreover, the Turkish government argues that one of the reasons for the recent high economic growth of the country is the gradually decreasing inflation rates. According to the Keynesian economic model, one of the key resources of the economic growth is domestic investment. Since FCI contains both public and private domestic investments, the expected sign for the coefficient of the FCI is positive. Here TO expressed as (X + M)/GDP and the sign of the TO is also depends on the relative growth of the X and Y. Hence, the expected sign of the TO is uncertain.

Expected Signs for the Coefficients of Variables in the Model	
Variable	**Sign**
FDI	Positive or Negative
H	Positive
FDIH	Positive or Negative
INF	Negative
FCI	Positive
TO	Positive or Negative

Table 17 - Expected Signs for the Coefficients of Variables in the Model

4.4 Theoretical Framework of the Econometric Model

In this part; theoretical background of the applied tests, models and analysis will be explained briefly.

4.4.1 Unit Root Test with Augmented Dick-Fuller (ADF) Test

In the time series analysis one of the basic assumptions is the stationarity of the series. If this assumption is violated, the results of the regressions with non stationary series will not be reliable and lead to spurious regression. In such spurious regression case traditional model statistics like t, F and R^2 will not be reliable anymore (Granger & Newbold, 1974). Unit root tests are tools to be utilized in order to test whether the time series data are stationary or not. Furthermore, it is more likely to encounter non stationary data in econometric time series. In this sense, Augmented Dick-Fuller (or ADF) test is a commonly used unit root test in econometric statistical analysis. If a series has a unit root, then this series is not stationary. In this study, the condition of being stationary or not for a series is tested by ADF test.

In the stationary series, even the series fluctuates in the long run, it keeps its constant mean (Equation 1). In addition, it has the finite variance which does not change during the time (Equation 2).Also in stationary time series, covariance of two consecutive values only depends on the time interval between those values, not on a constant point in a time (Rao, 1994).

$$E(\ ) = \qquad\qquad (1)$$

$$Var(\ ) = \qquad\qquad (2)$$

$$Covar(\ ,\quad) = constant \qquad (3)$$

The general model for the ADF unit root test with constant and trend is as follows:

$= α + γt + ρ \quad + \qquad\qquad$; Where Y: Macroeconomic variable, $\quad = \quad - \quad$, t: trend, n: optimal length, e: error (White noise).

In unit root tests, in order to decide whether Y is stationary or not, the hypothesis $\quad = ρ = 0$ is tested.

$= ρ = 0$ means series is not stationary and there is unit root

$= p < 0$ means series is stationary and there is no unit root.

After this forming hypothesis, if the null hypothesis is not rejected then the series is not stationary. Differences of the series which are not stationary are taken and they become stationary after being differenced.

In ADF tests, deciding the lag length before the test is critical because the lag length directly affects the accuracy of the test (Enders, 1995). Therefore, in this work before the ADF unit root test, the lag lengths of the each variable were assigned according to Akaike and Schwarz information criteria under simple regression. Another way to decide lag length is to use automatic lag length function of econometric software.

To do this, starting from the 6 lag every single variable was regressed with a simple regression and lag length was decreased one every time. Meanwhile Akaike and Schwarz information criteria results

of every regression were recorded and the lag of regression with smallest information criteria was selected. Moreover, lag length results of the simple regression were compared with the results from automatic lag length function of the software in order to validate the results.

y = constant + y (-i)   i : lag length

4.4.2   Granger Causality Test

Granger causality is a statistical concept of causality that is based on prediction. According to Granger causality, if a signal   "Granger-causes" a signal , then past values of   should contain information that helps predict   above and beyond the information contained in past values of   alone. Its mathematical formulation is based on linear regression modeling of stochastic processes (Granger, 1969).

Causality investigation between two variables is based on whether   Granger causes   and   Granger causes   or only   Granger causes   or   Granger causes   .

Granger causality test is based on the prediction of the following formulas;

$$\quad = \qquad + \qquad + \qquad\qquad (1)$$

$$\quad = \qquad + \qquad + \qquad\qquad (2)$$

If in equation 1 all α coefficients are insignificant and in equation 2 all γ coefficients are significant, then there is unidirectional causality from X to Y, so X is Granger cause of Y. This definition tells that the lagged values of Y do not provide additional information to explain the changes in X. If the causality relationship is unidirectional like the previous one, this means that X is exogenous variable and Y is endogenous variable (Greene, 1997).

The real problem of Granger causality test arises while assigning the lag lengths of the variables of predicted model. The results of Granger causality test are really sensitive to the lagged variables. Therefore, in this study different lags of the variables with Granger causality test are tested in order to make general comments about the causality relationships between variables.

4.4.3   Cointegration Test

Non stationary series are first differenced or more in order to reach stationarity. However, differencing removes the past behaviors of the series and in addition suppresses the long term relations between the variables. Here, cointegration analysis argues that there may be some linear combination of non stationary econometric time series and this condition can be identified econometrically. Therefore, existence of long term relations between the variables can be detected by cointegration test. If two or more time series are individually integrated but some linear combination of them has a lower order of integration, then the series are said to be cointegrated which lead to reliable regression between the variables. An example is where the individual series are first-order integrated as I(1) but some cointegrating vector of coefficients exists to form a stationary linear combination of them. This condition can lead to long run equilibrium relationship between the series. Thus, a non stationary series without any differencing can form a non spurious regression that is significant.

The most common techniques while testing the cointegration relations between the series are the ones suggested by Engle and Granger (1987) and Johansen (1988). Studies so far show that Johansen's Cointegration test gives more powerful result in case of existence of more than one variable in the model (Gonzalo, 1994). In this study Johansen's Cointegration test is applied to check whether the econometric series are cointegrating or not. During Johansen's Cointegration process numbers of cointegrated vectors are predicted by Trace statistics and Maximum Eigenvalue statistics. The hypothesis of those tests is as follows (Batmaz & Tunca, 2007);

$$(r) = -n \qquad\qquad (1)$$

$$(r, r+1) = -n\ln(1- \quad) \qquad\qquad (2)$$

Trace statistics in equation 1 testing the hypothesis that there are cointegrating vectors against the null hypothesis that there are no cointegrating vectors. The Max. Eigenvalue statistics in equation 2 tests the hypothesis that there is one cointegrating vector against the null hypothesis that there is no cointegrating vector. Moreover, before the Johansen's Cointegration test, the lag of the test should be predicted. This prediction can be determined by constructing an unrestricted VAR (Vector Auto Regressive) model. Defining the lag length is critical because if it is defined less, then the cointegration test will give inadequate results, if it is more, than the degrees of freedom will be lower.

4.4.4 Vector Error Correction Model (VECM)

A Vector Error Correction (VECM) model is a restricted VAR model. The VECM specification restricts the long run behavior of the endogenous variables to converge to their long run equilibrium relationships and allow the short run dynamics. It can also lead to a better understanding of the nature of any non stationarity among the different component series and can also improve longer term forecasting over an unconstrained model.

The VECM(p) form can be written as;

$$\Delta \quad = \gamma + \quad + \quad \Delta \quad + \quad , \text{ Where } \Delta \text{ is differencing operator.}$$

Engle and Granger (1987) point out that a linear combination of two or more non stationary series may be stationary. The stationary combination may be interpreted as the cointegration, or long run equilibrium relationship between the variables. In order to know if a VEC is appropriate, a cointegration test has to be conducted. Therefore, before the VECM model application, the cointegration relationship between the variables should be guaranteed. If it is the case, the VECM model with the original series gives long run relations and short run dynamics between the variables. Moreover, the lag length of the VECM model and the numbers of cointegrated vectors comes from the cointegration test as a parameter for VECM model. From the results of the VECM model, being endogenous and exogenous conditions of the variables can be interpreted which are important parameters for the impulse-response functions and the variance decomposition tests in the later stages of the VECM model. Also stationarity of the VECM model and the diagnostics of the VECM model including normality, independence and homoscedasticity of the errors terms must be checked after model construction.

4.4.5   Least Squares Method

Least squares method is a linear regression model. In the linear regression model, the dependent variable is assumed to be a linear function of one or more independent variables plus an error introduced to account for all other factors. In this study, multiple linear regression model will be conducted with econometric variables. The simple representation of a multiple linear regression model can be written as;

$$Y = \quad t \quad + \dots + \quad + e$$

Where Y is a dependent variable,   is a independent variable,   is a constant parameter,   is the coefficient parameter of the independent variables, and e is the error term which is assumed to be normally distributed, and has a zero mean and constant variance. The parameters are unknown in the equation so they should be estimated (Ross, 2000)**.** The significance of the coefficient parameter, constant parameters, the assumptions of the random errors and the statistics like   should be tested after the estimation.

4.5   Econometric Model and Empirical Findings

4.5.1   Unit Root Test with Augmented Dick-Fuller (ADF) Test

In order to be able to check whether the time series that are going to be used in the model are stationary or not, ADF test was applied. The test is first performed for level data and in case the data is not stationary, it is performed for its first difference. To assess the stationarity of the time series, t-statistics is compared to the test critical values. Having the lags automatically defined by the software, ADF tests using Akaike Information Criterion (AIC), Schwarz Information Criterion (SIC) and Hannan-Quinn Criterion (HQ) are conducted (Appendix 7). Results of ADF tests using AIC are as follows:

AIC - t-statistics		LGDP	FDI	FDIH	H	INF	LFCI	TO
Level		0,22	-2,10	-1,68	-0,36	-1,31	-0,49	-1,95
Critical Values	1% level	-3,56	-3,54	-3,54	-3,55	-4,12	-3,54	-3,55
	5% level	-2,92	-2,91	-2,91	-2,91	-3,49	-2,91	-2,91
	10% level	-2,60	-2,59	-2,59	-2,59	-3,17	-2,59	-2,59
First difference		-1,74	-5,17	-5,43	-5,83	-3,88	-7,81	-4,21
Critical Values	1% level	-2,61	-2,60	-2,60	-2,60	-2,61	-2,60	-2,60
	5% level	-1,95	-1,95	-1,95	-1,95	-1,95	-1,95	-1,95
	10% level	-1,61	-1,61	-1,61	-1,61	-1,61	-1,61	-1,61

Table 18 - ADF test according to AIC

Looking up into the table and comparing level t-statistics to critical values, it can be said that all time series are non stationary. Therefore stationarity is checked for their first difference to come to the conclusion that all time series except LGDP become stationary with 1% significance level. LGDP, being stationary for 10% significance level, is stationary for all significance levels according to SIC and HQ. It can be concluded that all time series become stationary at their first difference, in other words they are integrated at first level, I(1); hence a cointegration test can be carried out.

4.5.2 Granger Causality Test

In this section Granger causality test was conducted with the stationary series, which were calculated during the ADF test, in order to detect the direction of relationship between dependent variable GDP and the independent variables FDI, H, FDIH, INF, FCI and TO. Before the test, deciding the lag length of the model is critical, hence various lag length values were used in the test to explain direction of relationships. First of all, different lag lengths from 1 to 4 were tried out for the Granger causality test since all the series are in the quarterly form. Then another lag length that is 8 was placed in the model to see the direction of the relationships in the medium term.

The following analyses were deduced from the Table 19 with 90% confidence level.

For all predefined lag lengths, since the all probabilities of F-statistics for the relationship between GDP and FDI are larger than p value 0.1, there is no directional relationship between those variables.

The same result like the previous one was observed in the table for the directional relationship between GDP and FDIH, which shows that there is no directional relationship between GDP and FDIH for all lag lengths.

Considering the directional relationship between GDP and H, for lag 1 GDP is Granger cause H and H is Granger cause GDP since the relationships are significant under 10% significance level. Therefore past and current values of H can predict the future values of GDP or vice versa. For lag length 3, GDP is Granger cause H but H is not Granger cause GDP. For lag lengths 2, 4 and 8 there is no directional relationship between those variables.

Also for the directional relationship between GDP and INF, the null hypothesis in the table is not rejected and therefore it can be conclude that there is no directional relationship between those variables.

For the lag lengths 1 and 4, there is no directional relationship between GDP and FCI. However, for the lag lengths 2, 3 and 8 FCI is Granger cause GDP but GDP is not Granger cause FCI for the same periods.

Considering the relationship between GDP and TO, for the lag lengths 2, 3, and 4 TO is Granger cause GDP but not vice versa. Moreover, there is no directional relationship between those variables for the lag lengths 1 and 8.

Lag	Null Hypothesis:	Prob,	Null Hypothesis:	Prob,	Null Hypothesis:	Prob,	Null Hypothesis:	Prob,	Null Hypothesis:	Prob,	Null Hypothesis:	Prob,
1	DLGDP ⇏ DFDI	0,295	DLGDP ⇏ DFDIH	0,378	DLGDP ⇏ DH	0,078	DLGDP ⇏ DINF	0,539	DLGDP ⇏ DLFCI	0,733	DTO ⇏ DLGDP	0,898
	DFDI ⇏ DLGDP	0,980	DFDIH ⇏ DLGDP	0,867	DH ⇏ DLGDP	0,045	DINF ⇏ DLGDP	0,752	DLFCI ⇏ DLGDP	0,136	DLGDP ⇏ DTO	0,873
2	DLGDP ⇏ DFDI	0,625	DLGDP ⇏ DFDIH	0,680	DLGDP ⇏ DH	0,186	DLGDP ⇏ DINF	0,929	DLGDP ⇏ DLFCI	0,653	DTO ⇏ DLGDP	0,355
	DFDI ⇏ DLGDP	0,298	DFDIH ⇏ DLGDP	0,215	DH ⇏ DLGDP	0,475	DINF ⇏ DLGDP	0,985	DLFCI ⇏ DLGDP	0,008	DLGDP ⇏ DTO	0,000
3	DLGDP ⇏ DFDI	0,466	DLGDP ⇏ DFDIH	0,560	DLGDP ⇏ DH	0,067	DLGDP ⇏ DINF	0,855	DLGDP ⇏ DLFCI	0,171	DTO ⇏ DLGDP	0,559
	DFDI ⇏ DLGDP	0,351	DFDIH ⇏ DLGDP	0,225	DH ⇏ DLGDP	0,472	DINF ⇏ DLGDP	0,569	DLFCI ⇏ DLGDP	0,009	DLGDP ⇏ DTO	0,002
4	DLGDP ⇏ DFDI	0,508	DLGDP ⇏ DFDIH	0,571	DLGDP ⇏ DH	0,184	DLGDP ⇏ DINF	0,800	DLGDP ⇏ DLFCI	0,374	DTO ⇏ DLGDP	0,770
	DFDI ⇏ DLGDP	0,644	DFDIH ⇏ DLGDP	0,493	DH ⇏ DLGDP	0,282	DINF ⇏ DLGDP	0,385	DLFCI ⇏ DLGDP	0,100	DLGDP ⇏ DTO	0,032
8	DLGDP ⇏ DFDI	0,456	DLGDP ⇏ DFDIH	0,480	DLGDP ⇏ DH	0,127	DLGDP ⇏ DINF	0,843	DLGDP ⇏ DLFCI	0,674	DTO ⇏ DLGDP	0,864
	DFDI ⇏ DLGDP	0,913	DFDIH ⇏ DLGDP	0,853	DH ⇏ DLGDP	0,387	DINF ⇏ DLGDP	0,668	DLFCI ⇏ DLGDP	0,028	DLGDP ⇏ DTO	0,226

⇏ : does not Granger cause

Table 19 - Granger Causality Test

4.5.3   Cointegration Test

4.5.3.1   Lag Order Selection

With the purpose of assessing long run relationship between variables, cointegration test can be performed. As a prerequisite to the test, all non stationary data that is used in the model must become stationary at the same degree. Referencing to the results of ADF test, all non stationary level time series become stationary at their first differences, to say I(1), satisfying this requirement.

Next step to conduct cointegration test is the selection of the appropriate lag order that will be used in Johansen's Cointegration Test. A VAR model using level data is constructed to be able to apply VAR lag order selection criteria. According to the results shown in Table 20 AIC, SC and HQ criterion suggest the lag order to be selected as 7.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	1043,718	NA	3,76e-25	-36,38	-36,13	-36,28
1	1297,366	436,0961	2,90e-28	-43,56	-41,55	-42,78
2	1357,795	89,05268	2,09e-28	-43,96	-40,19	-42,50
3	1400,544	52,49991	3,20e-28	-43,74	-38,22	-41,59
4	1460,356	58,76248	3,39e-28	-44,12	-36,84	-41,29
5	1566,600	78,28507*	1,06e-28	-46,13	-37,09	-42,62
6	1694,558	62,85633	3,37e-29	-48,90	-38,11	-44,70
7	1907,897	52,39908	3,88e-30*	-54,66*	-42,12*	-49,79*

* indicates lag order selected by the criterion

Table 20 - VAR Lag Order Selection Criteria

4.5.3.2   Johansen's Cointegration Test

Using the lag order selected in the previous section, Johansen's cointegration test is carried out to control whether there are cointegrating equations or not and in case they exist, their number. Due to the nature of the test, the program makes computations according to first differences lag interval, therefore the lag that is inserted as input to it is 6 (=7-1). To interpret Johansen's cointegration test results, outcomes of two different tests, trace and maximum eigenvalue tests, are to be assessed. Both of the tests assert that there are 6 cointegrating equations at 5% significance level as it can be seen from the table below:

Sample (adjusted): 1996Q4 2010Q4
Included observations: 57 after adjustments
Trend assumption: No deterministic trend
Series: LGDP FDI FDIH H INF LFCI TO
Lags interval (in first differences): 1 to 6

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No, of CE(s)	Eigenvalue	Trace Statistic	0,05 Critical Value	Prob,**
None *	0,974598	454,4374	111,7805	0,0001
At most 1 *	0,762696	245,0796	83,93712	0,0000
At most 2 *	0,642213	163,0900	60,06141	0,0000
At most 3 *	0,590992	104,5044	40,17493	0,0000
At most 4 *	0,402810	53,54526	24,27596	0,0000
At most 5 *	0,309408	24,16065	12,32090	0,0004
At most 6	0,052250	3,058893	4,129906	0,0950

Trace test indicates 6 cointegrating eqn(s) at the 0,05 level

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No, of CE(s)	Eigenvalue	Max-Eigen Statistic	0,05 Critical Value	Prob,**
None *	0,974598	209,3578	42,77219	0,0001
At most 1 *	0,762696	81,98957	36,63019	0,0000
At most 2 *	0,642213	58,58558	30,43961	0,0000
At most 3 *	0,590992	50,95917	24,15921	0,0000
At most 4 *	0,402810	29,38461	17,79730	0,0006
At most 5 *	0,309408	21,10175	11,22480	0,0007
At most 6	0,052250	3,058893	4,129906	0,0950

Max-eigenvalue test indicates 6 cointegrating eqn(s) at the 0,05 level
* denotes rejection of the hypothesis at the 0,05 level
**MacKinnon-Haug-Michelis (1999) p-values

Table 21 - Johansen's Cointegration Test

Existence of cointegrating vectors containing the variables that are used for the model indicates a long-run relationship between these variables. The following long-run normalized cointegrating equation is derived from Johansen procedure. Other equations that EViews displayed as a result of Johansen's cointegration test can be found in Appendix 8.

According to the equation, the dependent variable LGDP is affected positively by FDI, H and LFCI while is affected negatively by FDIH, INF and TO. Comparing the signs of the variables with the expectations made in the previous sections, it can be uttered that predictions for H, INF and FCI are in line with the results. After obtaining the model, variables for which both signs were thought to be

probable, FDI has a plus, FDIH and TO have minus before them. The plus sign of FDI is in line with the findings of Akinci who found out that during the period 1980-2008, FDI supported economic growth in Turkey (Akinci, 2009). This may be due to the sum of indirect effects of other variables in the model and other factors such as political stability that are not numerically and completely included in it. As articulated by Kokcu, the minus sign before FDIH is likely to be due to insufficient level of human capital in Turkey which prevents the country from sustaining positive growth effects of FDI and from absorbing new technologies (Kokcu, 2007). In other words, as a consequence of lack of human capital, Turkey fails to benefit from FDI flows as much s she could. Speaking for the TO, similarly, foreign trade in Turkey does not enhance economic growth but affects it negatively possibly because of scarce efficiency improvements, exchange and because of unsatisfactory levels of proliferation of technology and knowledge as the opposite case of Yilmazer's which was mentioned in previous parts (2010). Another reason for this result may be Turkey's trade policies which are freeing trade at a level which decreases the incomes of the treasury from customs.

4.5.4 Vector Error Correction Model (VECM)

According to cointegration test in the previous section, the existence of cointegration relationship between the variables was proved. Therefore, a vector error correction model is applicable with the level data. VECM model can be performed to explain the long run relationships and short term dynamics between variables. The length of the model was derived from the cointegration test which is 7 as calculated with the VAR model before, however, the econometric analysis software Eviews 7.1 did not show the results with lag length seven, even six and it was failed. Because of that in the VECM model lag length was assigned as five. For the parameter of numbers of cointegrated vectors the value was selected as six which was the result of cointegration test.

After deciding the parameters of VECM model, the model was predicted as shown in the Appendix 9. Now it is possible to explain long term and short term relationships between the variables. In the model while the results of cointegrating coefficients ($\qquad$ = 1-6) explain the long term relationships, result of the variable coefficients explain the short term relationships. In order to interpret the t-statistics results of the model critical t* value (2,007584) was calculated with 95% confidence level and 51 degrees of freedom. In the following paragraphs of this section all the analyses will be done with regard to Appendix 9.

When the t-statistics of cointegrating coefficients and variables, where D(LGDP) is the dependent variable, are compared with t* value; the variables have long term effects on the D(LGDP) since two cointegrating coefficient are significant. However, only D(H(-1)) and all D(INF(-i))s have short term effects on GDP according to the vector error correction estimate where the coefficients of D(H(-1)) and D(INF(-i))s variables are significant.

In the equation of dependent variable D(FDI), the variables have long term effect on the D(FDI) since one of the cointegrating coefficient is significant. On the other hand, D(INF(-1)) with significant coefficient is the only variable which has a short term effect on D(FDI).

Considering the D(FDIH) equation, one significant cointegrating coefficient exits so the variables have long term effects on the D(FDIH). Moreover, D(INF(-2) is the only variable which has a short term effect on the D(FDIH).

For the equation of D(H), there is no significant cointegrating coefficients, thus the variables do not have long term effects on the D(H) variable. But, D(GDP(-1)), D(GDP(-3), D(TO(-3)) and D(T0(-4)) have significant coefficients so only those variables have short term effects on the D(H).

Variables have long term effects on the D(INF) since there exits two significant cointegrating coefficient in the equation. In addition D(H(-5)), D(INF(-5)) and D(LFCI(-5)) have short term effects on the D(INF) due to their significant coefficients.

In the equation of the dependent variable D(LFCI), no significant cointegrating coefficient was observed. This is why, the variables do not have long term effects on the D(LFCI). Two variables which are D(H(-4)) and D(TO(-3)) have significant coefficients so they have short term effects on the D(LCFI).

Three cointegrating coefficients in the equation of D(TO) are significant, hence variables have long term effects on the D(TO). Differenced values of GDP, H, INF and LFCI with various lags have significant coefficients, for this reason those variables have short term effect on the D(TO).

4.5.4.1   VECM diagnostics
In order to assess the reliability of the VECM some assumptions of the model related to residuals must be satisfied such as the homoskedasticity, normality and independence of residuals.

Firstly, residuals' homoscedasticity assumption was evaluated by examining the residual plots of the each variable. As observed from the residual plots of the variables in the Figure 28, the points in the plots seem to be fluctuating around zero mean in an unpatterned fashion. Thus, the residuals do not violate the assumption of homoscedasticity. In other words, residuals of the each variable have constant variance (   ).
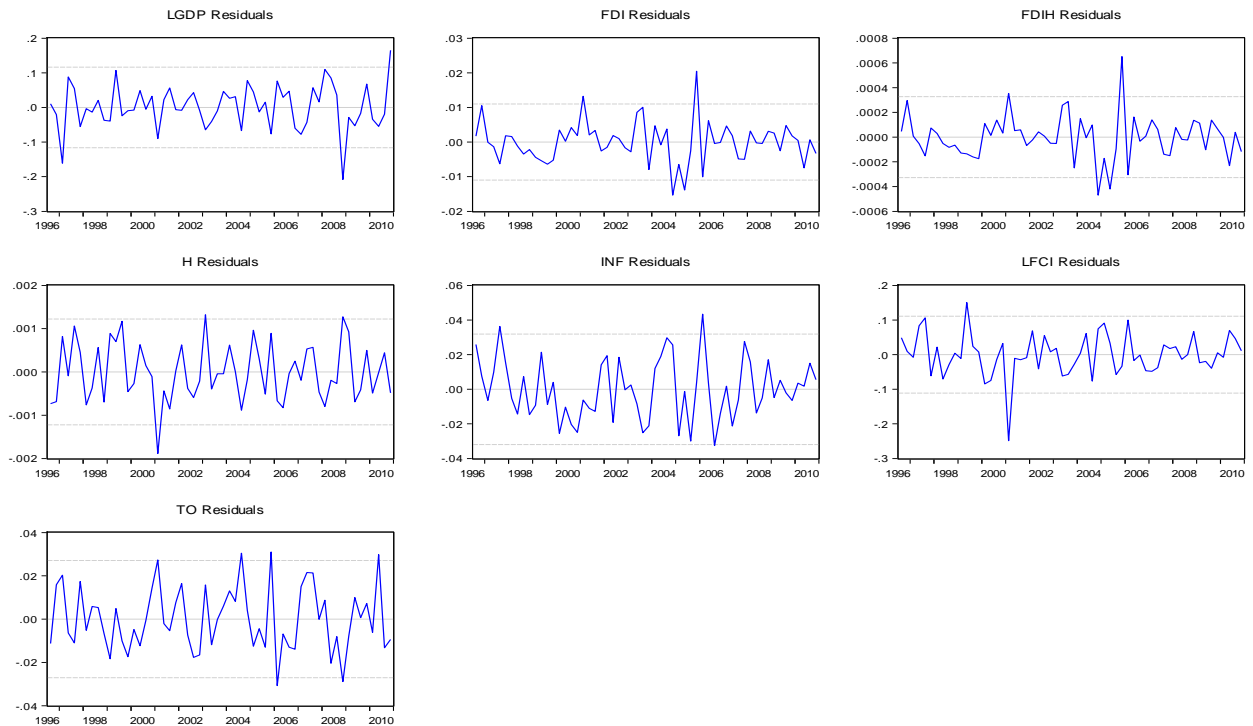
Figure 28 - Residual Plots of the Each Variable

For the next diagnostic check, normality assumption of residuals was evaluated with the normality test. The null hypothesis in Table 22 indicates that residuals are multivariate normal with 5% significance level. According to the Jarque-Bera statistic value 16.2 with the probability of 0.3 that is larger than 5% significance level, the null hypothesis is not rejected and it can be concluded that residuals are normally distributed. Moreover, skewness values of residuals are close to zero which is a good indicator for the normality test. Also, kurtosis values of residuals are closer to three, which is again a good indicator for the normality test. Nevertheless, measure of skewness and kurtosis are found to be no informative in such small samples (Bai, 2001).

VEC Residual Normality Tests
Orthogonalization: Cholesky (Lutkepohl)
Null Hypothesis: residuals are multivariate
normal
Sample: 1995Q1 2010Q4
Included observations: 58

Component	Skewness	Chi-sq	df	Prob.
1	-0.458059	2.028237	1	0.1544
2	0.243987	0.575451	1	0.4481
3	0.264901	0.678333	1	0.4102
4	-0.065119	0.040991	1	0.8396
5	-0.423234	1.731564	1	0.1882
6	-0.442418	1.892095	1	0.1690
7	-0.065217	0.041115	1	0.8393
Joint		6.987786	7	0.4302

Component	Kurtosis	Chi-sq	df	Prob.
1	4.479263	5.288196	1	0.0215
2	4.125436	3.060962	1	0.0802
3	2.635482	0.321111	1	0.5709
4	2.924027	0.013949	1	0.9060
5	2.684981	0.239823	1	0.6243
6	3.350532	0.296942	1	0.5858
7	3.052807	0.006739	1	0.9346
Joint		9.227722	7	0.2367

Component	Jarque-Bera	df	Prob.
1	7.316432	2	0.0258
2	3.636414	2	0.1623
3	0.999444	2	0.6067
4	0.054939	2	0.9729
5	1.971386	2	0.3732
6	2.189037	2	0.3347
7	0.047854	2	0.9764
Joint	16.21551	14	0.3004

Table 22 - Residual Normality Tests

In order to be sure about whether the independence assumption of the residuals is satisfied or not, in other words errors are autocorrelated or not, autocorrelation plot of residuals and LM test were considered. As seen in the Figure 29 no spike is observed in any lag. In addition, the residuals are not following a specific pattern like increasing and decreasing fashion. The second test which is LM test with 24 lags shows no significant autocorrelation (Appendix 10).

```
Date: 09/13/11   Time: 01:12
Sample: 1995Q1 2010Q4
Included observations: 58
```

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
		1	-0.031	-0.031	0.0601	0.806
		2	-0.196	-0.197	2.4517	0.294
		3	-0.209	-0.232	5.2283	0.156
		4	-0.046	-0.122	5.3640	0.252
		5	-0.011	-0.130	5.3723	0.372
		6	-0.007	-0.123	5.3753	0.497
		7	0.044	-0.049	5.5061	0.598
		8	-0.034	-0.118	5.5871	0.693
		9	-0.014	-0.083	5.6020	0.779
		10	0.018	-0.048	5.6246	0.846
		11	-0.019	-0.096	5.6521	0.896
		12	0.018	-0.042	5.6757	0.932
		13	0.076	0.037	6.1279	0.941
		14	0.058	0.046	6.3966	0.955
		15	-0.146	-0.125	8.1163	0.919
		16	-0.023	-0.004	8.1605	0.944
		17	0.097	0.079	8.9553	0.942
		18	-0.053	-0.091	9.1955	0.955
		19	0.068	0.093	9.6080	0.962
		20	-0.115	-0.119	10.817	0.951
		21	-0.094	-0.143	11.642	0.949
		22	-0.040	-0.104	11.798	0.961
		23	0.150	0.012	14.039	0.926
		24	0.120	0.017	15.505	0.905

Figure 29 - Autocorrelation Plot of Residuals

The diagnostic tests were completed and results of the tests showed that the model is reliable for further analyses and interpretations. The model has passed all three assumptions which were homoscedasticity, normality and independence of residuals respectively.

Now the final step for the VECM is to check its stability condition. The positions of all inverse roots of AR characteristic polynomial were tested to detect whether they are inside the unit circle or not. Figure 30 shows all positions of the inverse roots of the characteristic polynomial. It was observed that there is only one unit root which is not inside the unit circle but positioned on the unit circle. This condition seems to be the violation of the stability assumption, however, with the other combinations of the variable VECM model was applied several times and in all those applications there were at least two unit roots outside the unit circle. Even, the econometric analysis package Eviews 7.1 screened particular warnings for the instability of the trial models but not for the current model. Furthermore, the positions of the unit roots can be seen as a tabular form in Appendix 10.

Inverse Roots of AR Characteristic Polynomial
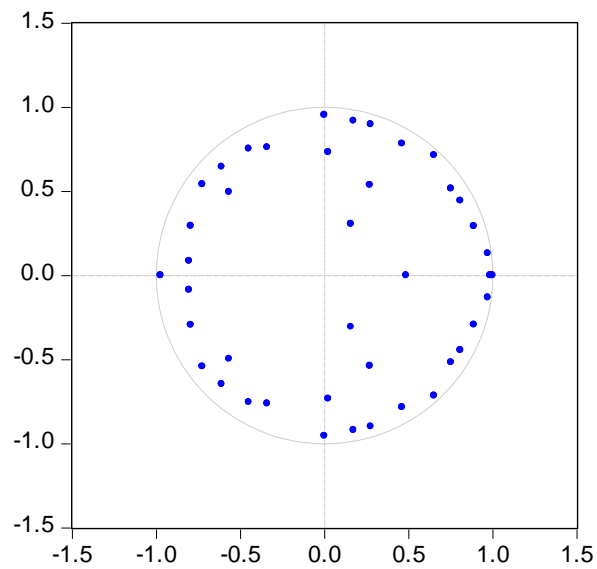
Figure 30 - Positions of the Unit Roots

4.5.4.2 Block Exogeneity Wald Tests

As the order of insertion of variables into the impulse response and variance decomposition calculation modules affects the outcomes, referring to Sims' work (1980), Yildirim (2010) suggests arranging the variables starting from the exogeneous to endogeneous. The same author also pronounces that the ordering within exogeneous and endogeneous variables themselves does not matter. VEC Granger Causality/Block Exogeneity Wald Test is conducted with the intention of identifying exogeneous and endogeneous variables and then putting them in order. The output of this function from the software is as follows:

VEC Granger Causality/Block Exogeneity Wald Tests
Sample: 1995Q1 2010Q4
Included observations: 58

Dependent variable: D(LGDP)

Excluded	Chi-sq	df	Prob.
D(FDI)	3.654112	5	0.6002
D(FDIH)	3.514229	5	0.6212
D(H)	5.351003	5	0.3746
D(INF)	10.21914	5	0.0693
D(LFCI)	4.089627	5	0.5366
D(TO)	5.459317	5	0.3624
All	18.09861	30	0.9569

Dependent variable: D(FDI)

Excluded	Chi-sq	df	Prob.
D(LGDP)	1.727389	5	0.8854
D(FDIH)	2.687269	5	0.7481
D(H)	2.137059	5	0.8299
D(INF)	6.825397	5	0.2340
D(LFCI)	4.393594	5	0.4942
D(TO)	1.278766	5	0.9371
All	23.30665	30	0.8024

Dependent variable: D(FDIH)

Excluded	Chi-sq	df	Prob.
D(LGDP)	1.505329	5	0.9125
D(FDI)	3.399065	5	0.6387
D(H)	2.234695	5	0.8158
D(INF)	7.364031	5	0.1949
D(LFCI)	4.812824	5	0.4391
D(TO)	1.771018	5	0.8798
All	26.42227	30	0.6534

Dependent variable: D(H)

Excluded	Chi-sq	df	Prob.
D(LGDP)	20.61319	5	0.0010
D(FDI)	1.896421	5	0.8633
D(FDIH)	1.884761	5	0.8648
D(INF)	3.665718	5	0.5985
D(LFCI)	6.289740	5	0.2790
D(TO)	19.84364	5	0.0013

All	43.50272	30	0.0529

Excluded	Chi-sq	df	Prob.
D(LGDP)	1.468854	5	0.9166
D(FDI)	8.900310	5	0.1131
D(FDIH)	9.160281	5	0.1028
D(H)	11.67793	5	0.0395
D(LFCI)	22.29471	5	0.0005
D(TO)	2.515081	5	0.7742
All	58.63000	30	0.0013

Dependent variable: D(LFCI)

Excluded	Chi-sq	df	Prob.
D(LGDP)	7.140247	5	0.2104
D(FDI)	2.593146	5	0.7624
D(FDIH)	2.500409	5	0.7764
D(H)	9.844264	5	0.0798
D(INF)	8.567136	5	0.1276
D(TO)	6.163329	5	0.2906
All	43.65585	30	0.0512

Dependent variable: D(TO)

Excluded	Chi-sq	df	Prob.
D(LGDP)	11.40904	5	0.0438
D(FDI)	6.822973	5	0.2341
D(FDIH)	6.479705	5	0.2623
D(H)	16.97513	5	0.0045
D(INF)	31.09774	5	0.0000
D(LFCI)	21.15508	5	0.0008
All	70.24580	30	0.0000

Table 23 - VEC Granger Causality/Block Exogeneity Wald Tests

Comparing the probabilities for each variable's difference, the highest probability is for LGDP and the lowest for TO, thus LGDP is the most exogeneous variable to be inputted first, and TO is the most endogeneous and to be inputted last. Taking into account all the variables and the method stated in the previous paragraph the input order for the variables is decided as: LGDP, FDI, FDIH, H, INF, LFCI, TO.

4.5.4.3   *Impulse Response*

Impulse response functions allow understanding how a shock in a variable influences other variables. In the following graphs, the responses of all variables to one standard deviation innovation (change) in LGDP are presented (See Appendix 11 for tables):

Looking at the Figure 31, a 1 standard deviation innovation in LGDP causes both positive and negative impact on LGDP itself in the first 8 periods while afterwards it becomes a big permanent positive effect. Looking at the response of LGDP to FDI, it can be said that FDI does not have a clear positive or negative effect until period 16 after which an augmenting positive effect can be observed. Graph for the response of LGDP to FDIH shows a positive pattern until the end of period 8, to become an amplifying permanent negative effect on LGDP. Coming to the response of LGDP to H, a both positive and negative figure transforms into a weak positive effect after period 11. As the response of LGDP to INF is scrutinized, it can be seen that in general the amplitude of the response is quite small. During the first three periods a change in INF has a negative effect on LGDP which is then substituted with a positive effect until period 10. After this period, the response continues to be small negatives to be zero at the end of selected time interval. The graph concerning the response of LGDP to LFCI demonstrates positive effects of a shock of LFCI until period 15 with an exception at period 11. After period 15, the response of LGDP becomes greater with a negative effect on LGDP. Finally, the response of LGDP to a deviation in TO is positive for all periods, except period 4 and the response become a greater and lasting one as advanced in time.

Response to Cholesky One S.D. Innovations
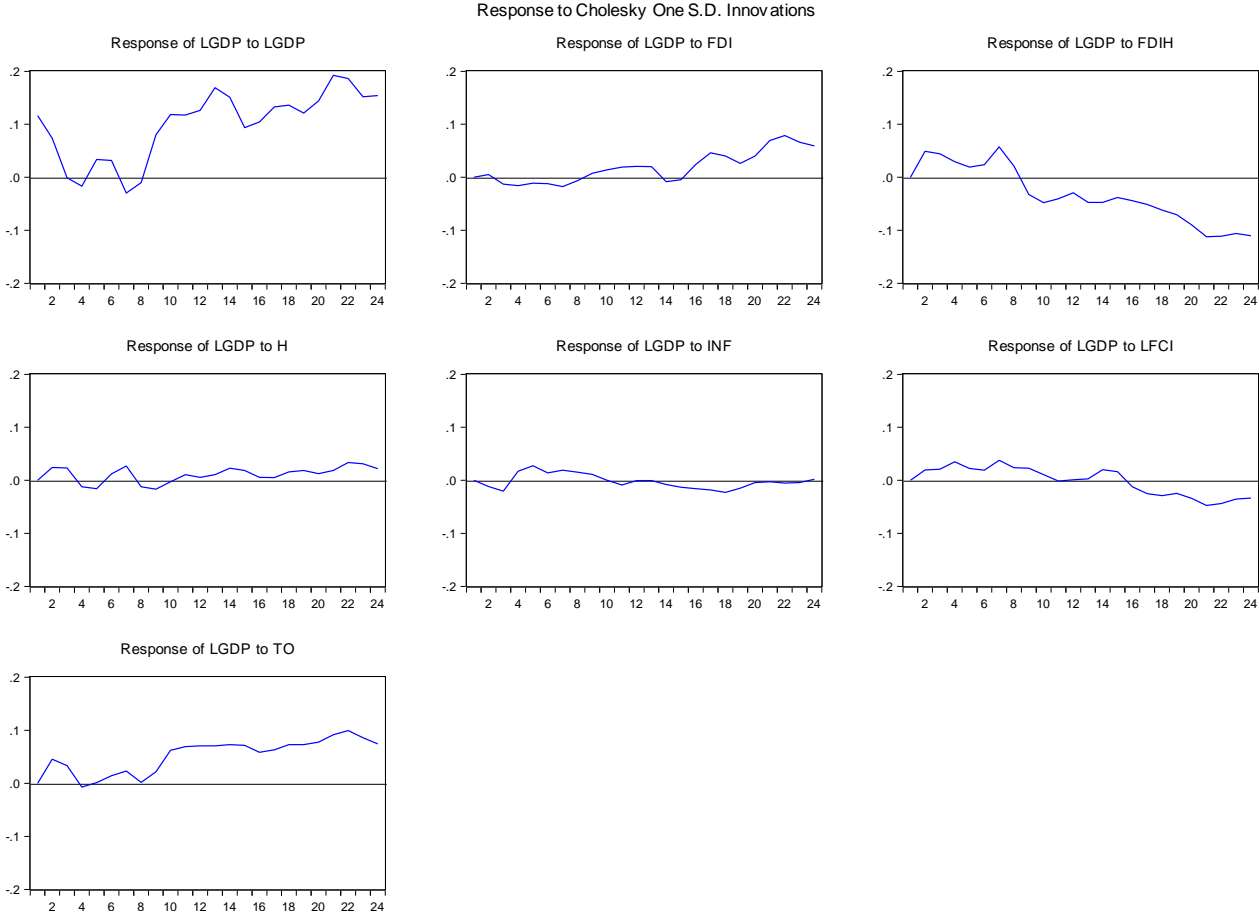
Figure 31 - Impulse Responses of LGDP to Each Variable

4.5.4.4   *Variance Decomposition*

Before performing the variance decomposition, the orders of the variables were decided by the Block Exogeneity Wald Test which was conducted in the previous sections. The generated order is the GDP, GDI, FDIH, H, INF, FCI and TO respectively. The variables were ordered in the variance decomposition with respect to given order. Then the variance decomposition graphs were created for the dependent variable GDP. A variance decomposition graph shows you how the sources of variation underlying variables movements grow and decline through time. In other words, at a particular time period variance decomposition screens to what extent of a relative change of a variable in the system is caused by its own shocks and shocks from other variables. The number of periods for the variance decomposition is the maximum number of steps ahead to be considered. The idea is to choose it to be long enough so that the variance decomposition percentages settle down to their final values. Therefore, numbers of periods for the variance decomposition was chosen quite long as 25 in the graphs and 36 in the tabular form of the decomposition. In the following paragraphs, analysis of the variance decomposition was performed according to the Figure 32 and table in the Appendix 12 which were formed as a result of the variance decomposition.

The largest percentage among all the graphs is showing that most of the forecast error variance is due to the GDP's own shock, which is 100% in the first period and 77% in the second period. However, in the coming years, this percentage is decreasing until eighth period and becomes 47%. Then it starts increasing again but it only fluctuates around 60% and becomes 54% at the end of the thirty sixth period. Nearly more than half of the variations of GDP are due to its own shocks in all periods.

Considering the effects of FDI on the variations of GDP, it starts as 1% and fluctuates around 2% along the first eight periods. FDI's effect on GDP starts growing during the last periods and becomes 5% eventually. This results shows that FDI has no significant effect on the variations of GDP. This outcome can be related to many reasons like the nature of the inward FDI's to Turkey. Most of the FDIs in Turkey were observed as privatization and M&A so that the favorable impact of the FDI has not been experienced expectedly.

FDIH has negligible impact on the variations of GDP in all periods which has a percentage about %1 on the average. As mentioned in the previous sections, many researchers declare that Turkey has not enough amount of qualified human capital. Therefore Turkey has problems to absorb new technologies and other positive impacts of FDI, where FDI with qualified human capital is standing as a fact that can potentially add value to the development of a country. On the other hand, H which is the human capital variable seems to have an impact on the variations of GDP which has a final percentage of about 9%. Turkish government has been allocating significant amount of budget for the education expenditures over the last years. It can be concluded that in the next decades Turkey may experience the positive effects of FDI more than it experienced in previous years and today.

INF has a significant impact on the variations of GDP in the first eight periods with a percentage of 8% in average and then it starts decreasing gradually and becomes 1% in the final period. Until the beginning of 2000s, Turkey struggled with the really high inflation rates. However, the inflation has been decreased dramatically for the last 8 years. Therefore, the impact of INF on the variations of GDP over the periods may decline due to its dramatic decrease.

FCI growth shocks play a significant role in the variations of GDP which would be expected from economic considerations. When the public and private domestic investment raise then it is expected that economic growth will also positively affected from the investments boost as experienced in Turkey. In the periods between four and ten, the percentage of the FDI shocks on the variations of GDP moves between 10% and 28 %. At the final stages, the percentage keeps its values around 11%.

The graph and the table shows that over 10% of the variations in GDP is due to the TO shocks. Even in the last 21 periods, the percentage is over 15% and keeps around 19% in the final 14 periods. Turkey has enacted many laws, initiated institutions and offer incentives to make foreign trade more attractive for the last ten years. Therefore, this considerable impact of the TO on the variations of GDP seems to be significant.
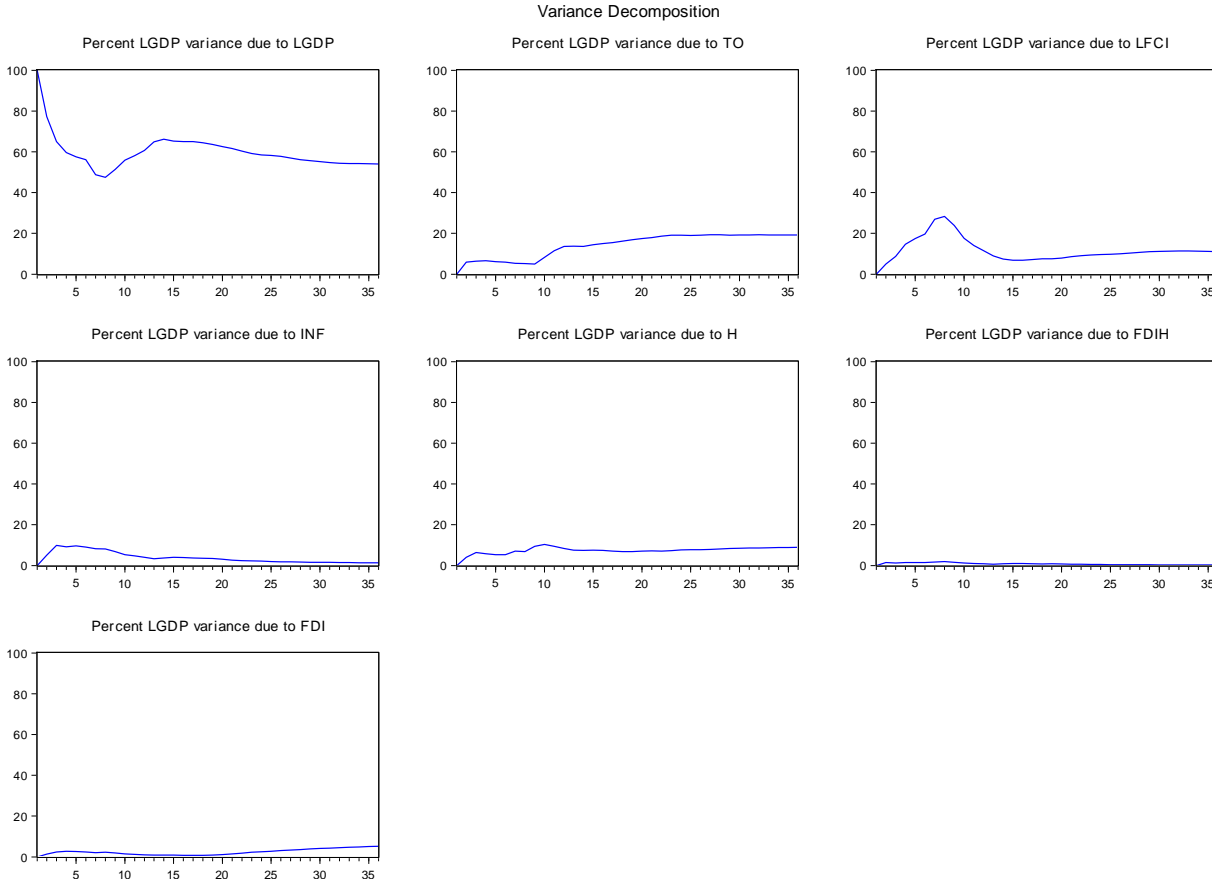
Figure 32 - Variance Decomposition of GDP

4.5.5 Least Squares Method

With the intention of comparing the results obtained from the model presented in previous parts, an ordinary least squares (OLS) model is built. Using the same variables and putting GDP as the dependent variable, OLS is conducted with stationary data, in other words with the first differences of the variables. The output equation is as follows:

This model has an adjusted R^2 equal to 0,480 meaning that the variables are not explaining the dependent variable well enough. Investigating the effects of the variables, similarly to the findings from cointegration model, DFDI, DH and DLFCI affect the dependent variable DLGDP positively while DFDIH, DINF and DTO affects it negatively. However as it can be seen from the table looking into the probabilities, the only variable to be statistically significant is DTO. To say, OLS does provide the expected effects of variables but not significantly.

Dependent Variable: DLGDP
Method: Least Squares
Sample (adjusted): 1995Q2 2010Q4
Included observations: 63 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DFDI	19.87845	13.11343	1.515884	0.1352
DFDIH	-623.4823	417.8974	-1.491951	0.1413
DH	1.174936	13.66321	0.085993	0.9318
DINF	-0.171577	0.175684	-0.976620	0.3330
DLFCI	0.150321	0.111013	1.354090	0.1811
DTO	-1.974196	0.278443	-7.090132	0.0000
C	0.024110	0.013797	1.747503	0.0860

R-squared	0.530939	Mean dependent var	0.024646
Adjusted R-squared	0.480682	S.D. dependent var	0.143427
S.E. of regression	0.103359	Akaike info criterion	-1.596775
Sum squared resid	0.598254	Schwarz criterion	-1.358649
Log likelihood	57.29843	Hannan-Quinn criter.	-1.503119
F-statistic	10.56456	Durbin-Watson stat	2.089761
Prob(F-statistic)	0.000000		

Table 24 - OLS Output

4.5.5.1 OLS diagnostics

Carrying out the diagnostic tests for the residuals, it can be said that autocorrelation exists as the deviation of the residuals does not stay within the acceptable limits and there are many outliers as it can be seen from the graph below. As autocorrelation violates OLS assumption which presumes that error terms are uncorrelated, therefore standard errors tend to be underestimated. According to Figure 33 and 34 which shows the outcome of the normality test, it can be said that GDP residual does not have a normal distribution, therefore the dependent variable or at least one explanatory variable may have the wrong functional form. Another explanation could be that some important variables are missing. To conclude, it is not possible to say that this model is reliable.
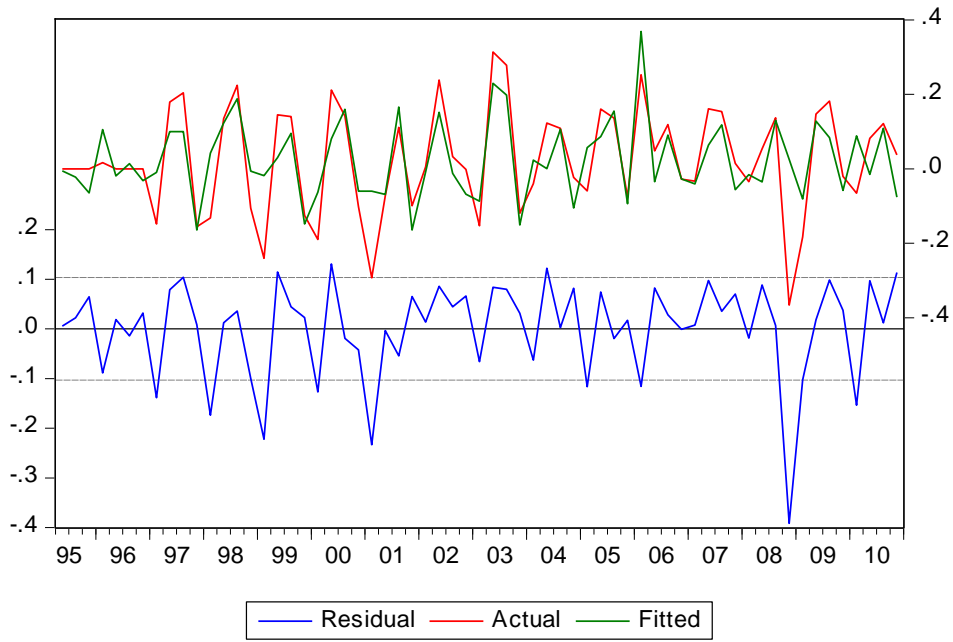
Figure 33 - Residual, Actual and Fitted Values Plot

Series: Residuals	
Sample 1995Q2 2010Q4	
Observations 63	
Mean	4.41e-18
Median	0.018501
Maximum	0.130833
Minimum	-0.391496
Std. Dev.	0.098231
Skewness	-1.488485
Kurtosis	5.870243
Jarque-Bera	44.88919
Probability	0.000000
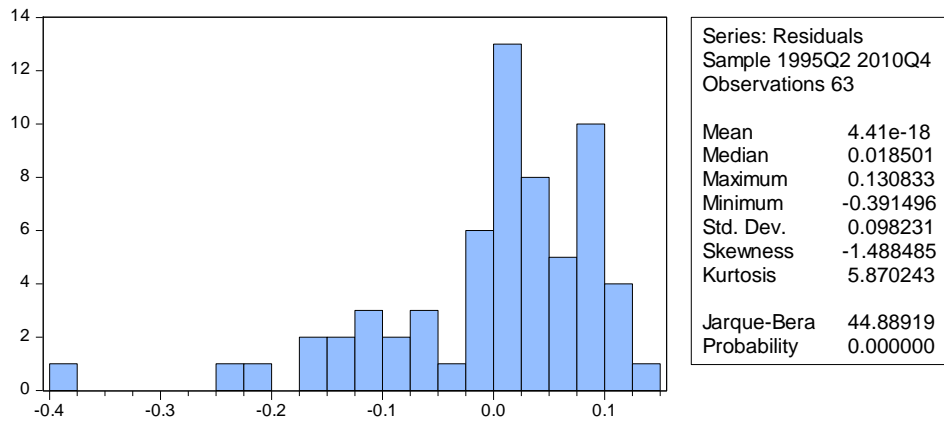
Figure 34 - Residual Histogram

5 CONCLUSION

Since 1970s an intense competition in the world economy where the main actors are nation states and transnational corporations, has been lasting with the ongoing global economic trends free from the physical borders. In such a competitive environment, one of the foremost obstacle limiting the desired amount of economic growth and high level of wealth in a nation state is the insufficient capital. Capital is also the core prerequisite for the production that leads to the economic development of a country. In this sense, in spite of not being a preferable solution for insufficient capital issue, especially underdeveloped and developing countries have to supply the required amount of capital from the developed nations and international economic institutions. In addition, capital in cash only may not be able to trigger development for the developing countries to reach welfare level of developed countries. Accordingly, another factor beside capital to promote development for a developing country is to ability to generate and use the technological innovations in production. Therefore, transnational corporations have critical significance for the developing countries in need of a production because of their capability to transfer both capital and new technologies by FDI to those countries where they invest in. Hence, all nation states, excluding the ones having strict protectionist economic policies, are in a competition to attract MNCs owing considerable capital, technology and various favorable impacts on host economies to support their economic development. However, researchers emphasize that if a country desires to experience such positive effects of FDIs, it should have threshold level of endowments such as human capital, technology, infrastructure and financial development. Moreover, the possible unexpected negative effects of FDIs can be minimized by particular regulations, laws, and authorities in the host economies.

As many other developing nations have done, Turkey has been seeking to attract more FDI to sustain its economic development since 1980 after shifting to more liberal economic regime from relatively protectionist one. To achieve this, the country has been working on the improvement of investment environment for the foreigners by creating investment zones, offering tax incentives and initiating governmental bodies and authorities.

With the implementation of more liberal trade policies, it is possible to say that FDI flows to Turkey incremented gradually until 1990 and then in the 1990s this increase was higher than the previous decade even though there are some sharp falls in 1994 and 1997 due to global economic crises and devaluations in the country. However, in the same period of time, global FDI flows grew rapidly yet inward FDI in Turkey remained stationary as compared to global FDI movements. Considering the 2000s, Turkey managed to be much more attractive to foreign investments than before except early 2000s after the biggest economic crisis of Turkey's history in 2001. The period between2002 and mid 2003 was the time for Turkey to recover the damaging effects of the last crisis. After this recovery period, thanks to the change in FDI law in 2003, the following years witnessed a dramatic rise in the FDI flows. Recently, Turkey has attracted highest amount of FDI from EU member states, Asian and Middle Eastern countries respectively. Over the last decade, service sectors such as banking, finance, retailing and telecommunications have attracted the largest share of foreign investment in the country. According to the number of foreign company invested in Turkey, the majority of the companies with international capital are in the wholesale and retail trade sectors while this is followed by manufacturing, real estate, renting and other business activities. Since most of the inward FDIs to Turkey has not inclined to manufacturing industry, effects of FDI has not experienced as the expectations of such developing country in need of a production.

Turkey has the lowest FDI inflow as a percentage of GDP in comparison with newest EU member states which are Bulgaria and Romania, as well as candidate countries like Croatia, Iceland, Montenegro, and Macedonia. One can say that Turkey could not attract lots of investments and stood behind the benchmark countries even though 2005-2007 periods was relatively promising for this country thanks to negotiations with EU. Considering the indexes such as inward FDI performance index and inward FDI potential index, Turkey failed to catch none of the selected countries which she has been competing with. It is obvious that taking into account its size, Turkish economy fails to attract FDI flows as much as its competitors do.

Since 2000s, most of the inward FDI to Turkey took form of M&A and privatization rather than greenfield investments. Therefore, some researchers indicate that the observed forms of FDIs to Turkey limit the favorable macroeconomic impacts of foreign investments. Although Turkey has a great potential in terms of the market size, liberal FDI law, proximity to other markets and low labor costs to host more FDI, she was not able to attract considerable amount of FDI until 2004 because of some problems like the macro-economic and political instabilities, uncertainties about the EU accession, lack of promotion and image, problematic legislation and bureaucracy, high amount of unregistered economy and some political problems like Kurdish issue.

When the GDP growth of Turkey is taken into account, she has been one of the best performers among the OECD members for the recent years. Turkey's growth trend has not deviated from its upward direction between 2002 and 2007. Since 2002 Turkish economy has been constantly growing in terms of GDP in current and constant prices. But, impact of the inward FDIs to Turkey on the last decade's good economic growth performance is debatable in the country which is the main focus of this study. In addition, due to the severe economic recessions, a sharp decline in growth in 2008 and even a negative growth in terms of real GDP in 2009 were observed in Turkish economy. Turkey has been struggling with the chronicle high inflation rates which could be related to the low economic growth rates of the country in 1990s and early 2000s. The most recent stand-by program continued with IMF mainly focused on reduction of inflation, reducing government debt financial need while providing continuous economic growth. Looking at the recent ratios, inflation in Turkey has continued its downward trend over the last decade. Due to structural reforms of the country, the annual inflation rate (CPI) declined from the level of around 70% at the beginning of 2002 to a single digit, 6,4% by the end of 2010. Nevertheless, while some macroeconomic indicators of the country have showed significant performances, some are still suffering from high amounts like current budget deficit. Turkey's recent critical problem has been arousing from the import and export issues. In the country imports are growing faster than the exports do. Therefore, proportion of imports covered by exports ratio has been decreasing where the eventual result of this condition is imbalanced and high current account deficits.

As mentioned before, impact of the inward FDI to Turkey on the last decade's remarkable economic growth performance is questionable in the country. Therefore, given the works evaluated in literature review part and indicators of Turkish economy, in order to evaluate the relationship between economic growth and a set of variables including FDI as the main factor of interest, human capital, a multiplication of FDI and human capital, inflation, fixed capital investment and trade openness, a model that uses quarterly data for 1995-2010 period for Turkey was built. As the main area of interest of this work is on the relationship between economic growth and FDI, GDP and FDI inflows as a percentage of GDP are the foremost variables to be included to the model.

In order to explain the directional causality relationships of variables, Granger causality test was formed for different lag lengths. The test showed that there is no directional relationship between GDP and FDI. In other words, FDI has no impact on the economic growth of the Turkey as Yilmazer found out in his empirical work on the relationship of FDI and economic growth in Turkey (2010). Three variables which are human capital, fixed domestic investment and trade openness were detected to be significant for the explanation of the economic growth.

With the purpose of assessing long run relationship between variables, cointegration test was performed. As a result of the cointegration test, FDI has a weak positive impact on the economic growth in the long run as Akinci indicates in this study that FDI has positive effects on economic growth of Turkey (2009). However, variable assessing the impact of FDI and human capital simultaneously has negative effect on economic growth in line with the many empirical studies point out that the Turkey does not have sufficient human capital to benefit from the favorable effects of FDI inflows. VECM model also supported the results of the cointegrating test that FDI has weak long run impact on the economic growth of Turkey. Similarly, considering the outcomes of the impulse-response function, FDI does not have clear negative or positive effect on the economic growth of Turkey in the short term. However, the shocks directed from FDI to GDP have positive impact on the economic growth in the long term. Furthermore, variance decomposition test again proved that FDI could explain the negligible part of the variations of GDP. The results again highlighted that fact that Turkey needs to invest on human capital in order to experience the positive effects of FDI inflows. As final remark, it can be concluded that recent economic growth of Turkey is not depend on the FDI inflows. Main factor which boosts the economic growth of Turkey seems to be the fixed capital investments, particularly the public and private domestic investments.

As a prerequisite condition for absorbing positive impacts of FDI inflows, Turkey should shift from an economic structure based on a cheap labor to a structure which sustains higher value added with high skilled and qualified human capital that is able to gain knowledge of using advanced technologies. Due the characteristics of FDI inflows to Turkey such as their concentration on service sectors, and having forms of privatization and M&A rather than greenfield investments, the favorable impacts of such FDIs on the growth and other macroeconomic indicators has been limited. Moreover, Turkey should enhance its basic and technological infrastructure in order to attract more FDI. Accordingly, liberalizing the infrastructure sectors properly will help to solve the problems restraining the foreign investments and stimulate FDI in the following years. In this sense, Turkey should continue the recent reforms programs about the trade policies, regulations and investment environment in accordance with the EU accession process. If Turkey is able to access EU and succeed to improve political and economical stability and also solve corruption and judiciary problems, most likely she will attract more FDI than before. While Turkey is considering the potential opportunities like EU accession which seems not to occur in immediate future, and being an energy gateway, having young and dynamic population; she should also take account into the potential threats limiting the economic growth and FDI attractiveness which would be regional instability, Kurdish issue, chronicle political problems and fragile structure of the economy.

6   BIBLIOGRAPHY

Akinci. (2009). Turkiye'de Dogrudan Yabanci Yatirimlar ve Ekonomik Buyumeye Etkisi (1980-2008).

Aksoy. (2008). Tecnological Spillovers Through Foreign Direct Investment in Turkish Manufacturing Industry.

Alfaro, Chanda, Kalemli-Ozcan, & Sayek. (2002). FDI and Economic Growth: The Role of Local Financial Markets.

Alici, & Ucal. (2003). Foreign Direct Investment, Exports and Output Growth of Turkey: Causality Analysis.

Aras. (2011). Dogrudan Yabanci Sermayeye Dayalı Buyume Hipotezi: Turkiye Ornegi.

Association of Treasury Controllers. (2011). *Output & Growth*. Retrieved 09 15, 2011, from http://www.hazine.org.tr/en/economy/ogrowth.php

Ayanwale. (2007). FDI and Economic Growth : Evidence from Nigeria.

Bai. (2001).

Balasubramanyam, Salisu, & Sapsfort. (1999). Foreign Direct Investment as an Engine of Growth.

Balasubramanyam, Salisu, & Sapsfort. (1996). Foreign Direct Investment in a Macroeconomic Framework – Finance, Efficiency, Incentives, and Distortions.

Basu, Chakraborty, & Reagle. (2003). Liberalization, FDI, and Growth in Developing Countries: A Panel Cointegration Approach.

Batmaz, & Tunca. (2007). Turkiye'de Dogrudan Yabanci Sermaye Yatirimlarinin Bolgesel Belirleyicileri Uzerine Bir Es Butunlesme Analizi (1992 – 2003).

Bengos, & Sanchez-Robles. (2003). Foreign Direct Investment, Economic Freedom and Growth: New Evidence from Latin America.

Blomstrom, Lipsey, & Zegan. (1994). What Explains Developing Country Growth?

Bolgar. (2011). *Wall Street Journal* .

Borensztein, Gregorio, & Lee. (1998). How does Foreign Direct Investment Affect Economic Growth?

Calderon, C., Loazya, N., & L, S. (2004). Greenfield Foreign Direct Investment and Mergers and Acquisitions: Feedback and Macroeconomic Effects.

Carkovic, & Levine. (2002). Does Foreign Direct Investment Accelerate Economic Growth?

Carkovic, & Levine. (2002). University of Minnesota Working Paper.

Central Bank. (n.d.). Retrieved from http://www.tcmb.gov.tr/yeni/eng/

Cestepe, & Tuyluoglu. (2006). Technology Transfer through Foreign Direct Investments: Lessons for Turkey from the Irish Case.

Choe. (2003). Do Foreign Direct Investment and Gross Domestic Investment Promote Economic Growth?

CIA. (2011). World Factbook.

Darrat, Kherfi, & Soliman. (2005). FDI and Economic Growth in CEE and MENA Countries: A Tale of Two Regions.

Demirel. (2006). Dogrudan Yabanci Yatirimlar, Ekonomik Buyumeye Etkileri ve Turkiye Uygulamasi.

Dervis, Gros, Oztrak, Bayar, & Isik. (2004). Relative Income Growth and Convergence.

Driffield, N., & Love, J. (2003). Foreign Direct Investment, Technology Sourcing and Reverse Spillovers.

Dunning. (2000). The Eclectic Paradigm as an Envelope for Economic and Business Theories of MNE Activity .

Dutz, Us, & Yilmaz. (2005). Turkey's Foreign Direct Investment Challenges: Competition, the Rule of Law, and EU Accession.

Enders. (1995). Applied Econometric Time Series.

Erdilek. (1982). Direct Foreign Investment in Turkish Manufacturing.

Erdilek. (2005). The New Favorite Destination for Foreign Direct Investments: Turkey Where The Opportunities Abound.

Eurostat. (2011).

Fry. (1993). Foreign Direct Investment in a Macroeconomic Framework – Finance, Efficiency, Incentives, and Distortions.

Gerceker. (2010). Vektor Otoregresif Model Yardimiyla Turkiye Ekonomisinde Dogrudan Yabanci Sermaye Yatirimlarinin Ekonomik Buyume Uzerindeki Etkilerinin Incelenmesi.

Goff. (2003). Development Economics Web Guide.

Gonzalo. (1994). Five Alternative Methods of Estimating Long-run Equilibrium.

Granger. (1969). Investigating Causal Relations by Econometric Models and Cross-Spectral Methods.

Granger, & Newbold. (1974). Spurious Regressions in Econometrics.

Greene. (1997). Econometric Analysis.

Guven. (2008). Turkiye'de 1980 Sonrasi Donemde Dogrudan Yabanci Sermaye Yatirimlarinin Sektorel Analizi ve Ekonomik Kalkinmaya Etkisi.

Hansen, & Rand. (2006). On the Causal Links Between FDI and Growth in Developing Countries.

Hermes, & Lensink. (2003). Foreign Direct Investment, Financial Development and Economic Growth.

Hill, J. (2008). International Business.

Hisarciklilar, Karakas, & Asici. (2009). Can Fdi be a Panacea for Unemployment? The Turkish Case.

Hsiao, & Hsiao. (2004). FDI, Exports and GDP in East and Southeast Asia – Panel Data Versus Time-Series Causality Analysis.

Hughes. (2004). Turkey and the European Union: Just Another Enlargement.

IMD. (2010). World Competitiveness Yearbook.

IMD. (2011). World Competitiveness Yearbook.

IMF. (1997). *Balance of Payments Manual.*

IMF. (2011). World Economic Outlook.

ISPAT. (2011). Investors Guide.

Istanbul Chamber of Commerce. (2007). Foreign Direct Investment Law , 4875 - June 2003.

Istenhaber.com. (2011). *Makarna Devi Barilla, Italya'daki Fabrikasini Turkiye'ye Tasiyacak*. Retrieved 08 15, 2011, from http://istenhaber.com/2011/05/06/makarna-devi-barilla-italyadaki-fabrikasini-turkiyeye-tasiyacak/

Kepenek, & Yenturk. (2003). Turkish Economy.

Kokcu. (2007). Foreıgn Dırect Investment Affects Economic Growth And Evıdence In Turkey (1987–2006).

Lipsey. (2002). Home and Host Counry Effects of FDI.

Loewendahl, & Ertugal-Loewendahl. (2001). Turkey's Performance in Attracting Foreign Direct Investment.

Mello. (1997). Foreign Direct Investment in Developing Countries and Growth: a Selective Survey, Journal of Development Studies.

Mello. (1999). Foreign Direct Investment-Led Growth: Evidence From Time Series and Panel Data.

Mencinger. (2003). Does Foreign Direct Investment Always Enhance Economic Growth?

Merlevede, & Schoors. (2004). Determinants of Foreign Direct Investment in Transition Economies.

Ministry of Development of Turkey . (n.d.). Retrieved from http://www.dpt.gov.tr/ing/

Ministry of Economy. (2011). Retrieved 2011, from http://www.ekonomi.gov.tr/

Ministry of Energy and Natural Resources. (2010). Report.

Ministry of Transport and Communication. (2011). Retrieved 2011

Narula, R., & Dunning, J. (1996). *The Investment Development Path Revisited: Some Emerging Issues.*

OECD. (2002). Foreign Direct Investment for Development: Maximising Benefits, Minimising Costs.

OECD. (2002). Foreign Direct Investment for Development; Maximizing Benefits, Minimizing Costs.

OECD. (2008). *OECD Benchmark Definition of Foreign Direct Investment.*

OECD. (2010). Science, Technology and Industry Outlook.

Onis. (2004). Liberalization, Transnational Corporations and Foreign Direct Investment in Turkey: The Experience of the 1980s.

Ornek. (2006). Yabanci Sermaye Akimlarinin Yurtici Tasarruf ve Ekonomik Buyume Uzerine Etkisi: Turkiye Ornegi.

Osmanov. (2008). Dogrudan Yabanci Sermaye Yatirimlarinin Makroekonomik Etkileri-Turkiye Ornegi.

Papanek. (1973). Aid, Foreign Private Investment, Savings and Growth in Less Developed Countries.

Pei, & Esch. (2004). The Impact of FDI on Developing Countries.

Pirler. (2007). Yabanci Sermaye Girisi Surmeli.

PMR Consulting. (2011). Turkey Report.

Potterie, & Lichtenberg. (2001). Does Foreign Direct Investment Transfer Technology Across Borders?

Ram, & Zang. (2002). Foreign Direct Investment and Economic Growth: Economic Development and Cultural Change.

Rao. (1994). Cointegration for Applied Economist.

Ross. (2000). Introduction to Probability and Statistics for Engineers and Scientists.

Saray. (2007). Turkiye'de Dogrudan Yabanci Sermaye Yatirimlarinin Gelismekte Olan Ulkeler Cercevesinde Degerlendirilmesi: Ampirik Bir Analiz.

Sayek. (2007). FDI in Turkey: The Investment Climate and EU Effects.

Terzioglu. (2007). Ulkelerde Dogrudan Yabanci Yatirimlar: Turkiye Ornegi.

Turkcan. (2008). Dogrudan Yabanci Yatirimlarin Ekonomik Buyume ve Kalkinmaya Etkileri: Panel Data Analizi.

Turkish Statistical Institute. (n.d.). Retrieved from http://www.turkstat.gov.tr/

Turkish Statistical Institute. (2010). Retrieved from http://www.turkstat.gov.tr/

UNCTAD. (2011). Retrieved July 15, 2011, from http://www.unctad.org/templates/Page.asp?intItemID=3148&lang=1

UNCTAD. (2004). Transnational Corporations.

UNCTAD. (2000). *World Investment Report.*

UNCTAD. (2006). World Investment Report.

UNCTAD. (2011). World Investment Report.

Undersecretariat of Treasury. (2011). Retrieved 2011, from http://www.treasury.gov.tr/

Undersecretariat of Treasury. (2010). FDI report.

Undersecretariat of Treasury. (2011). Foreign Direct Investments in Turkey 2010.

Undersecretariat of Treasury. (2009). Turkish Economy - Presentation.

Undersecretariat of Treasury. (2011). Turkish Economy - Presentation.

UTIKAD. (2010).

Vahter, P., & Masso, J. (2006). Home versus Host Country Effects of FDI: Searching for New Evidence of Productivity Spillovers.

Vergil, & Ayas. (2009). Effects of FDI on Employment: Turkey Case, Economis, Management and Finance.

Wade. (1996). Globalisation and its Limits: Reports of the Death of the National Economy are Greatly Exaggerated.

World Bank. (2011). Retrieved July 15, 2011, from http://www.worldbank.org/depweb/english/beyond/global/glossary.html

World Bank. (2007). Turkey Investment Climate Assessment Volume II.

World Economic Forum. (2011). Network Readiness Index.

YASED & TUSIAD. (2004). FDI Attractiveness of Turkey: A Comparative Analysis.

YASED. (2011). FDI 2010 Year-End Report.

YASED. (2010). Investment Environment in Turkey Report.

Yavan. (2006). Turkiye'de Yatirim Iklimi ve Dogrudan Yabanci Yatirimlar.

Yilmaz. (2007). Turkiye icin Dogrudan Yabanci Yatirim Stratejisi'ne Dogru.

Yimazer. (2010). Dogrudan Yabanci Yatirimlar, Dis Ticaret ve Ekonomik Buyume Iliskisi: Turkiye Uzerine Bir Deneme.

YOIKK. (2011). History of YOIKK.

Zhang. (2001). Does Foreign Direct Investment Promote Economic Growth? Evidence From East Asia and Latin America.

7   APPENDICES

Appendix 1

Reforms in the FDI law

The Turkish government has introduced reforms to its Foreign Direct Investment Law. The new law removes various restrictions and simplifies the investment procedure. Below are some of the changes introduced to the FDI Law:

-The FDI screening and approval procedures required in cases of setting up of a new business and share transfers have been removed.

-As per the new law, the foreign investor will not be required to obtain approval from the business set-up and share transfer except in case of some specific sector.

The conditions for the establishment of a business and share transfers have been made uniform for local and international investors.

Earlier, prior approval was required for certain transactions of foreign investment companies; this requirement has been waived.

The earlier requirement regarding minimum capital investment of EUR 33,430 (USD 50,000) by each foreign shareholder has also been removed.

Previously, foreign investors could only set up a joint stock company or a limited company. Now, any form of company existing as per the Turkish Commercial Code, including partnerships, can be established by foreign investors.

The valuations done by the international credit agencies and courts or competent authorities of the investor's country will also be accepted while determining the share value for marketable securities contributed as capital in kind.

The new foreign investment legislation is based on the principle of equal treatment for both domestic and foreign investors.

Both foreign capital companies located in Turkey and domestic investors now have similar rights with respect to the acquisition of real estate.

The legal entities of a foreign country can hire foreign personnel in Turkey if the personnel have work permits granted by the Ministry of Labor and Social Security.

Turkish FDI Law Based on Equal Treatment Principle

The Turkish law is based on equal treatment of national and foreign business investors. Some principles of the Foreign Direct Investment Law 4875 of Turkey are outlined below:

Unless there is an international agreement or a special law, foreign investors in Turkey have an equal right to make investments and participate in all types of companies and sectors which are open for investment to the domestic investors.

There will be no expropriation or nationalization of FDI, except in the following cases:

-If it is required for the interest of the general public

-If payment has to be made for compensation as per the law

Investors are free to transfer their net profits, dividends, license fee, fees received for management or other similar arrangement, etc. to other countries.

Foreign investors can approach the authorized local courts, national or international arbitration, or any other means for settlement of disputes arising from investment agreements, public concession contracts and other conditions concluded with the foreign investors. However, the related regulations must be fulfilled and parties to the arbitration should have mutually agreed to the settlement procedure (Istanbul Chamber of Commerce, 2007).

Labor Cost Per Hour (USD ($)) in 2010*

Country	Labor Cost Per Hour
Germany	39
Australia	37,9
USA	26,9
Japan	25,3
Poland	11,2
Hungary	9,2
Brazil	6,4
Malaysia	5
Turkey	3,37
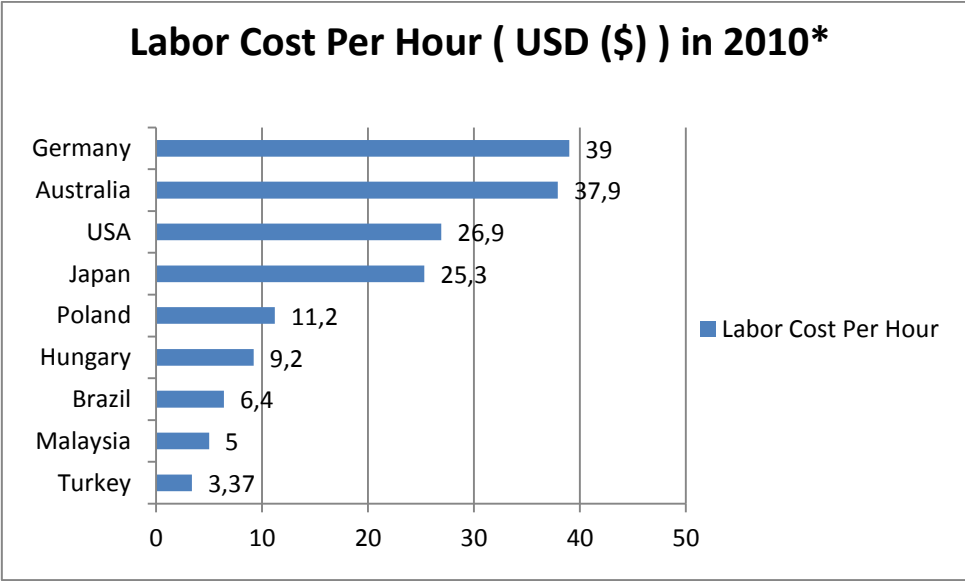
Figure: Labor Cost Per Hour (USD $) in 2010*, Economist Intelligence Unit (EIU)
*Average cost of labor per hour (pay and non-pay costs)

Labor Force (In Millions) 2010

Country	Labor Force
Turkey	25,9
Italy	25,3
Spain	22,7
Poland	17,4
Romania	9,4
Czech Republic	5,2
Hungary	4,3
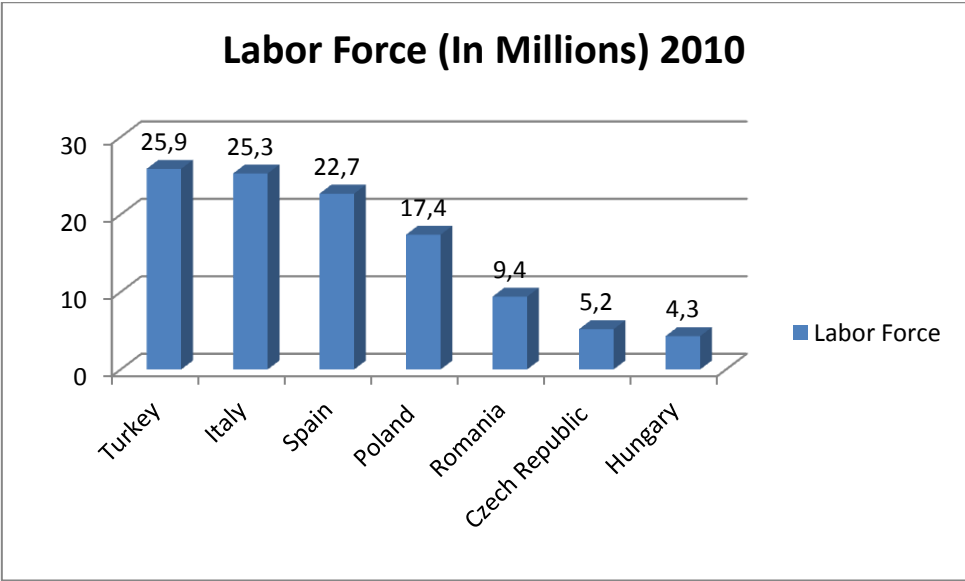
Figure: Labor Force in Turkey Compared to Some EU Member States in 2010,
International Labor Organization

	Availability of Qualified Labor Force Scores* 2010					
	Skilled Labor	Qualified Engineers	Competent Senior Managers	Language Skills	IT Skills	Average Score
Turkey	5,94	7,75	6,22	5,17	7,48	6,51
Czech Republic	6,42	6,55	4,85	5,64	7,82	6,26
Poland	5,87	6,55	5,28	6,16	7,23	6,22
Hungary	4,65	6,16	4,42	3,19	7,08	5,1
Bulgaria	3,97	5,66	2,97	5	7,21	4,96
Romania	4,97	5,12	3,94	5,15	5,35	4,91

Table: Availability of Qualified Labor Force Scores* 2010 between Turkey and some EU member states, IMD World Competitiveness Yearbook 2010
*Scores (0: Not-Available, 10: Available)

Appendix 3

Electricity Prices for Industrial Consumers (Euro Cent/kWh)*			
Country	**2008**	**2009**	**2010**
European Union (27 Countries)	8,75	9,55	9,19
Belgium	9,88	10,26	9,43
Bulgaria	5,57	6,39	6,39
Czech Republic	10,95	10,57	10,22
Germany	9,29	9,75	9,21
Ireland	13,02	12,06	11,18
Greece	8,61	9,48	8,55
Spain	9,15	10,98	11,1
Cyprus	14,05	11,64	14,83
Latvia	6,6	8,96	8,9
Lithuania	8,29	9,24	9,91
Luxembourg	9,27	10,96	9,56
Hungary	11,19	12,21	10,37
Netherlands	8,6	9,4	8,53
Poland	8,14	8,57	9,29
Portugal	7,82	9,19	8,96
Romania	8,86	8,11	8,5
Slovenia	9,04	9,87	9,17
Slovakia	11,51	14,16	11,61
United Kingdom	9,37	10,77	9,47
Norway	6,52	6,69	8,93
Croatia	7,43	8,53	9,32
Turkey	6,61	7,54	8,63

Table: Electricity Prices for Industrial Consumers (Euro Cent/kWh), EuroStat

*This indicator presents electricity prices charged to final consumers. Electricity prices for industrial consumers are defined as follows: Average national price in Euro per kWh without taxes applicable for the first semester of each year for medium size industrial consumers (Consumption Band Ic with annual consumption between 500 and 2000 MWh). Until 2007 the prices are referring to the status on 1st January of each year for medium size consumers (Standard Consumer Ie with annual consumption of 2 000 MWh).

Electricity Generation and Consumption in Turkey

Having been realized as 198,1 billion kWh in 2008, Turkey's gross electricity consumption decreased by 2,42%, regressing to 193,3 billion kWh in 2009. Compared to the previous year (198,4 billion kWh), our country's electricity generation also decreased this year by 2,02%, regressing to 194,1 billion kWh. Our electricity generation is expected by 2020 to reach 499 TWh with an annual increase of around 8% according to the higher demand scenario, or 406 TWh with an annual increase of 6,1% according to the lower demand scenario. As of 21 July 2010, our installed power has now reached 46.126 MW after the deployment of a new power plant of 1.479 MW.

In 2009, our electricity generation came from three main sources: natural gas by 48,6%, coal by 28,3%, hydroelectric by 18,5%, liquid fuels by 3,4%, and renewable resources by 1,1%.

As of the end of 2009, out of Turkey's total installed power 54,2% is in EÜAŞ, 16,4% in production companies, 13,7% in build-operate power plants, 8,1% in autoproducers, 5,5% in build-operate-transfer power plants, 1,5% in transferred power plants, and 0,6% in mobile power plants. In line with the target of liberating the electricity market, Law No. 4628 provided for new production investments by private sector. From 2002 to 2009, our country's installed power capacity went up from 31.750 MW to 44.600 MW. An additional capacity of 12.850 MW was deployed during that period, around 7000 MW of which is generated by the privately invested power plants. In 2009, a new power plant of 3.002 MW was introduced to the system. 2.810 MW of the additional capacity deployed is generated by the privately invested power plants. These initiatives aim at creating a transparent and competition-driven market in the electricity sector, and thus to help improve the investment environment. In 2010 (as of July 21, 2010), 64 privately owned power plants, which have a total installed power of 1479 MW, were temporarily accepted and licensed by our Ministry for operation. Of all the power plants deployed,

-2% is geothermal (17 MW)

-13% is wind power (330 MW)

-29% is hydraulic (486 MW)

-2% is landfill gas and bio-gas (7 MW)

-18% is thermal (639)

60 MW of the thermal power comes from cogeneration power plants. By the end of this year, privately owned installed power, which is introduced in 2010, is expected to exceed 2400 MW (Ministry of Energy and Natural Resources, 2010).

Appendix 4

Research and Development Expenditure (% of GDP)							
Country	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
EU27	1,76	1,73	1,74	1,77	1,77	1,84	1,92 (p)
OECD Total*****	2,21	2,18	2,21	2,24	2,28	2,34	
Austria	2,26 (c)	2,26	2,45 (c)	2,46	2,52	2,67 (c,p)	2,75 (c,p)
Belgium	1,88	1,86	1,83	1,86	1,90	1,96 (p)	1,96 (p)
Canada	2,04	2,07	2,05	1,97	1,91	1,84 (p)	1,95 (p)
Czech Republic	1,25	1,25	1,41	1,55	1,54	1,47	1,53
Denmark	2,58	2,48	2,46	2,48	2,58	2,87	3,02 (c)
France	2,17	2,15	2,10	2,10	2,07	2,11	2,21 (c)
Germany	2,52	2,49	2,49	2,53	2,53	2,68	2,82 (c)
Hungary	0,93	0,87	0,95	1,00	0,97	1,00	1,15
Italy	1,11	1,10	1,09	1,13	1,18	1,23	1,27 (p)
Poland	0,54	0,56	0,57	0,56	0,57	0,60	0,68
Portugal	0,71	0,75 (c)	0,78	0,99 (c)	1,17	1,50	1,66 (p)
Turkey	0,48	0,52	0,59	0,58	0,72	0,73	0,85
United Kingdom	1,75	1,68	1,73	1,75	1,78	1,77	1,87 (p)
Table: Research and development expenditure (% of GDP) 2003-2009, OECD Science, Technology and R&D Statistics 2011 **c:** National Estimate or Projection Adjusted **p:** provisional *****Excluding Chile							

Research and Development Expenditure (USD ($) Million)									
Country	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**Rank***	**Rank****	**Variation (%)**
Austria	5.696	6.005	6.737	7.201	7.756	8.461	15	12	49
Belgium	5.890	6.028	6.171	6.552	6.988	7.259	17	30	23
Canada	20.135	21.766	23.175	23.724	24.126	23.961	7	31	19
Czech Republic	2.296	2.455	2.948	3.470	3.803	3.768	23	6	64
Denmark	4.223	4.336	4.419	4.739	5.066	5.498	20	21	30
France	36.840	37.979	39.236	40.988	42.307	42.893	5	32	16
Germany	59.409	61.319	64.299	68.515	72.242	76.797	3	22	29
Hungary	1.458	1.437	1.616	1.808	1.825	1.988	26	16	36
Italy	17.287	17.479	17.999	19.714	21.714	22.128	8	23	28
Poland	2.474	2.770	2.982	3.119	3.526	3.991	22	8	61
Portugal	1.443	1.551	1.755	2.341	2.906	3.735	24	2	159
Turkey	2.839	3.568	4.617	5.406	6.942	7.541	16	1	166
United Kingdom	31.032	32.018	34.081	36.142	38.088	38.707	6	27	25
USA	289.736	300.293	323.047	347.809	373.185	398.194	1	15	37
Table: R&D Expenditure (USD ($) Million), TurkStat, OECD Science, Technology and R&D Statistics 2010/1 ***** Ranking According to R&D Expenditures in 2008 ****** Ranking According to R&D Expenditures Variations Between 2003 and 2008									

Growth of Business Researchers 1997-2007

Country	Average Annual Growth Rate
Portugal	~21.5
Turkey	~16.5
China (2000-07)	~15
Estonia (1998-2007)	~14
Greece	~12.5
Finland (2004-07)	~11
Spain (2002-07)	~11
Czech Republic (2005-07)	~9.5
Hungary	~8.5
Slovenia	~6.5
Austria (1998-2007)	~6
Canada (1997-2005)	~5.5
Ireland (1997-2006)	~5
France (2001-06)	~5
Netherlands	~4
EU27	~3.5
OECD (1997-2006)	~3
Italy	~3
Denmark (2002-07)	~3
Germany	~2.5
Belgium	~2.5
United States (1997-2006)	~2.5
Switzerland (1996-2004)	~0
United Kingdom (2001-07)	~0
Poland	~-1

Figure: Average Annual Growth Rate of Business Researchers, OECD Science, Technology and Industry Scoreboard 2009

R&D Personnel in Turkey by Sector of Employment (1990-2009)					
			Sector of Employment		
Year		Total	Business Enterprise	Government	Higher Education
1990	A	36.376	3.227	4.935	28.214
	B	13.951	2.166	3.365	8.420
1991	A	38.323	3.795	5.361	29.167
	B	14.969	2.509	3.692	8.768
1992	A	39.817	4.182	5.463	30.172
	B	15.701	2.824	3.788	9.089
1993	A	44.349	4.331	5.830	34.188
	B	16.087	2.807	3.062	10.218
1994	A	46.643	4.479	6.151	36.013
	B	16.899	3.232	2.955	10.712
1995	A	51.193	5.023	6.270	39.900
	B	18.498	3.634	3.080	11.784
1996	A	58.315	6.153	7.223	44.939
	B	21.983	4.281	4.415	13.287
1997	A	63.601	9.163	7.280	47.158
	B	23.432	5.632	4.369	13.431
1998	A	62.181	9.003	6.090	47.088
	B	22.892	5.223	3.879	13.790
1999	A	66.330	9.576	6.116	50.638
	B	24.267	5.614	4.032	14.621
2000	A	76.074	10.441	6.339	59.294
	B	27.003	6.032	4.069	16.902
2001	A	75.960	8.753	8.544	58.663
	B	27.698	5.607	5.293	16.798
2002	A	79.958	9.107	8.644	62.207
	B	28.964	5.918	5.502	17.544
2003	A	83.281	10.848	8.572	63.861
	B	38.308	7.837	6.245	24.225
2004	A	86.680	12.398	8.747	65.535
	B	39.960	8.836	6.383	24.742
2005	A	97.355	18.479	11.372	67.504
	B	49.252	14.993	8.825	25.434
2006	A	105.032	22.413	11.600	71.019
	B	54.444	18.029	9.702	26.713
2007	A	119.738	28.820	11.798	79.120
	B	63.377	24.261	9.572	29.543
2008	A	125.142	33.066	11.893	80.183
	B	67.244	27.462	9.871	29.912
2009	A	135.043	38.657	13.105	83.281
	B	73.521	31.476	11.007	31.037

Table: R&D Personnel in Turkey by Sector of Employment (1990-2009), Eurostat
A: Headcount
B: Full Time Equivalent

Human Resources in Science and Technology as a Share of Labour Force- Total (%)				
Country	**2006**	**2007**	**2008**	**2009**
EU27	38,6	39,2	39,6	40,1
Belgium	46,6	46,7	47	48,2
Bulgaria	30,5*	30,8	31	32,2
Czech Republic	34,8*	36	37,1	37,9
Denmark	50,4*	48,8*	52,3	51,8
Germany (including former GDR from 1991)	43,2*	43,6	44	44,8
Ireland	39,5*	41,2	42,2	44,7
Spain	39,8*	39,7	39,7	39
France	41,2*	41,7	42,7	43,2
Italy	34,6*	35,6	35,3	34,3
Hungary	31,9*	31,7	33,2	33,2
Austria	38,3*	37,6	37,8	39
Poland	31,4*	32,5	33,4	34,9
Portugal	22*	22,1	23,1	23,5
Romania	22,8*	23	23,8	24,1
Sweden	48*	48,7	49,3	49,6
United Kingdom	42,5*	43,3	42,7	44,4
Switzerland	50,8*	51,6	53,4	54,5
Croatia	29,2*	28,8*	29,9	31,6
Turkey	18,4*	18,8	20,5	20,7

Table: HR in Science and Technology as a Share of Total Labor Force (%), Eurostat

* Break in Series

This indicator gives the percentage of the total labor force in the age group 25-64, that is classified as HRST, i.e. having either successfully completed an education at the third level in an S&T field of study or is employed in an occupation where such an education is normally required.

Appendix 5

6th Meeting of the Investment Advisory Council (IAC) for Turkey: Recommendations

• Sustain macroeconomic stability

• Within the context of improvement of business and investment environment;

> ➢ Continue to fight against the informal economy
> ➢ Formulate to the legal framework which will keep pace with the needs of modern business; in this regard, key legislation should especially be enacted such as replacement of the current commercial code with the draft legislation in the Parliament.
> ➢ Taking measures to improve the speed, efficiency, consistency and predictability of the judicial system.
> ➢ Further liberalization of the energy sector, especially renewable resources, the transportation sector, and the telecommunication sector, in this regard constitute legal infrastructure.
> ➢ Policies that support to provide SMEs better access to finance, strengthen linkages between production and supply networks and improve management capacity.
> ➢ Continue efforts to increase transparency and speed of customs procedures.
> ➢ Strengthen the education system (in particular vocational education).
> ➢ Improving the efficiency, predictability and consistency of the tax system.
> ➢ Reducing the number of regulatory permit procedures affecting business.
> ➢ Strengthen sustainable agriculture through more efficient irrigation systems.

• Continue the reforms which will enhance the efficiency of labor market; in this regard taking measures that will strengthen the linkages between employment and education, reduce the cost of registered employment and enhance the flexibility of labor market by considering the fiscal constrains and enact National Employment Strategy.

• To commercialize innovative activities, enhance the collaboration among universities and business sector, enhance private sector R&D expenditures, protecting intellectual property rights through effective enforcement and ensuring high international standards.

• Istanbul Finance Center project should be implemented in accordance with global standards and best-practices.

Appendix 6

Raw Dataset

GDP	FDI	FDIH	H	INF	FCI	TO
43.322.907.034	0,0039	0,0001	0,0230	1,1970	10.291.867.075	0,2680
43.322.907.034	0,0047	0,0001	0,0230	0,8090	10.291.867.075	0,3189
43.322.907.034	0,0029	0,0001	0,0230	0,8600	10.291.867.075	0,3329
43.322.907.034	0,0090	0,0002	0,0230	0,7600	10.291.867.075	0,4039
44.063.805.855	0,0014	0,0000	0,0240	0,7930	11.543.187.124	0,3472
44.063.805.855	0,0019	0,0000	0,0240	0,8290	11.543.187.124	0,3673
44.063.805.855	0,0015	0,0000	0,0240	0,7930	11.543.187.124	0,3746
44.063.805.855	0,0117	0,0003	0,0240	0,7980	11.543.187.124	0,4280
38.003.234.675	0,0048	0,0001	0,0240	0,7730	12.706.319.458	0,4374
45.455.537.598	0,0043	0,0001	0,0240	0,7800	12.706.319.458	0,3970
55.769.664.212	0,0025	0,0001	0,0240	0,8990	12.706.319.458	0,3436
47.728.133.968	0,0060	0,0001	0,0240	0,9910	12.706.319.458	0,4398
41.841.500.304	0,0060	0,0001	0,0230	0,9720	12.487.067.479	0,4321
47.887.951.720	0,0060	0,0001	0,0230	0,9060	12.487.067.479	0,3878
59.921.106.576	0,0027	0,0001	0,0230	0,8040	12.487.067.479	0,3043
53.908.215.275	0,0045	0,0001	0,0230	0,6970	12.487.067.479	0,3340
42.409.297.314	0,0047	0,0001	0,0270	0,6350	10.271.820.627	0,3428
49.013.022.764	0,0047	0,0001	0,0270	0,6430	10.271.820.627	0,3393
56.385.131.770	0,0026	0,0001	0,0270	0,6430	10.271.820.627	0,2999
49.766.702.684	0,0041	0,0001	0,0270	0,6880	10.271.820.627	0,3854
41.175.517.223	0,0034	0,0001	0,0260	0,6790	11.453.423.120	0,4378
50.880.662.472	0,0037	0,0001	0,0260	0,5860	11.453.423.120	0,4178
58.606.383.574	0,0037	0,0001	0,0260	0,4900	11.453.423.120	0,3572
52.932.403.061	0,0082	0,0002	0,0260	0,3900	11.453.423.120	0,4167
39.501.059.752	0,0191	0,0004	0,0230	0,3750	6.828.326.846	0,4575
36.741.436.330	0,0191	0,0004	0,0230	0,5610	6.828.326.846	0,4888
41.071.895.809	0,0287	0,0007	0,0230	0,6180	6.828.326.846	0,4388
37.208.734.026	0,0193	0,0004	0,0230	0,6850	6.828.326.846	0,5020
37.416.028.024	0,0069	0,0002	0,0280	0,6510	7.883.024.231	0,4896
47.479.936.557	0,0047	0,0001	0,0280	0,4260	7.883.024.231	0,4416
49.047.660.678	0,0051	0,0001	0,0280	0,3700	7.883.024.231	0,4654
48.975.013.357	0,0071	0,0002	0,0280	0,2970	7.883.024.231	0,5207
42.032.171.165	0,0060	0,0002	0,0300	0,2940	9.614.951.730	0,5884
57.530.721.663	0,0045	0,0001	0,0300	0,2980	9.614.951.730	0,4830
75.965.478.479	0,0084	0,0003	0,0300	0,2300	9.614.951.730	0,4032
67.427.810.352	0,0088	0,0003	0,0300	0,1840	9.614.951.730	0,4960
64.815.605.872	0,0106	0,0003	0,0300	0,1180	13.847.251.712	0,5311
73.274.888.542	0,0094	0,0003	0,0300	0,0890	13.847.251.712	0,5448
81.693.346.603	0,0094	0,0003	0,0300	0,0900	13.847.251.712	0,5030
79.837.118.368	0,0075	0,0002	0,0300	0,0930	13.847.251.712	0,5671

Raw Dataset Continued

GDP	FDI	FDIH	H	INF	FCI	TO
75.222.280.463	0,0098	0,0003	0,0310	0,0794	18.207.176.366	0,5714
88.327.484.471	0,0054	0,0002	0,0310	0,0895	18.207.176.366	0,5378
101.215.322.950	0,0261	0,0008	0,0310	0,0799	18.207.176.366	0,4778
93.770.242.911	0,0635	0,0020	0,0310	0,0772	18.207.176.366	0,5482
120.747.519.910	0,0099	0,0003	0,0300	0,0816	29.962.756.182	0,3988
126.702.948.217	0,0630	0,0019	0,0300	0,1012	29.962.756.182	0,4582
142.717.373.167	0,0286	0,0009	0,0300	0,1055	29.962.756.182	0,4038
138.837.083.959	0,0471	0,0014	0,0300	0,0965	29.962.756.182	0,4414
134.363.490.253	0,0698	0,0023	0,0330	0,1086	35.231.385.083	0,4346
157.812.233.404	0,0190	0,0006	0,0330	0,0860	35.231.385.083	0,4345
184.015.287.656	0,0245	0,0008	0,0330	0,0712	35.231.385.083	0,3862
186.668.435.789	0,0266	0,0009	0,0330	0,0839	35.231.385.083	0,4249
180.385.431.977	0,0269	0,0009	0,0320	0,0915	37.143.536.673	0,4563
190.303.514.804	0,0299	0,0010	0,0320	0,1061	37.143.536.673	0,4849
218.310.929.178	0,0168	0,0005	0,0320	0,1113	37.143.536.673	0,4312
151.413.027.397	0,0259	0,0008	0,0320	0,1006	37.143.536.673	0,4310
126.055.478.644	0,0215	0,0008	0,0380	0,0789	26.492.669.968	0,4232
146.028.070.904	0,0130	0,0005	0,0380	0,0573	26.492.669.968	0,3885
175.234.148.806	0,0110	0,0004	0,0380	0,0527	26.492.669.968	0,3625
171.721.357.802	0,0102	0,0004	0,0380	0,0653	26.492.669.968	0,4045
160.900.771.560	0,0092	0,0003	0,0340	0,0956	34.604.361.620	0,4007
174.677.650.305	0,0091	0,0003	0,0340	0,0837	34.604.361.620	0,4216
197.192.353.766	0,0118	0,0004	0,0340	0,0924	34.604.361.620	0,3760
204.671.394.983	0,0171	0,0006	0,0340	0,0640	34.604.361.620	0,4258

Appendix 7

Unit Root Tests

SIC- t-statistics		LGDP	FDI	FDIH	H	INF	LFCI	TO
Level		0,42	-2,41	-1,68	-1,25	-1,31	-0,49	-1,95
Critical Values	1% level	-3,54	-3,54	-3,54	-3,54	-4,12	-3,54	-3,55
	5% level	-2,91	-2,91	-2,91	-2,91	-3,49	-2,91	-2,91
	10% level	-2,59	-2,59	-2,59	-2,59	-3,17	-2,59	-2,59
First difference		-2,93	-9,30	-9,96	-7,81	-3,88	-7,81	-4,21
Critical Values	1% level	-2,60	-2,60	-2,60	-2,60	-2,61	-2,60	-2,60
	5% level	-1,95	-1,95	-1,95	-1,95	-1,95	-1,95	-1,95
	10% level	-1,61	-1,61	-1,61	-1,61	-1,61	-1,61	-1,61

HQ- t-statistics		LGDP	FDI	FDIH	H	INF	LFCI	TO
Level		0,42	-2,41	-1,68	-1,25	-1,31	-0,49	-1,95
Critical Values	1% level	-3,54	-3,54	-3,54	-3,54	-4,12	-3,54	-3,55
	5% level	-2,91	-2,91	-2,91	-2,91	-3,49	-2,91	-2,91
	10% level	-2,59	-2,59	-2,59	-2,59	-3,17	-2,59	-2,59
First difference		-2,93	-9,30	-9,96	-7,81	-3,88	-7,81	-4,21
Critical Values	1% level	-2,60	-2,60	-2,60	-2,60	-2,61	-2,60	-2,60
	5% level	-1,95	-1,95	-1,95	-1,95	-1,95	-1,95	-1,95
	10% level	-1,61	-1,61	-1,61	-1,61	-1,61	-1,61	-1,61

Appendix 8

Cointegration Test Outputs:

1 Cointegrating Equation(s): Log likelihood   1720.945

Normalized cointegrating coefficients (standard error in parentheses)

LGDP	FDI	FDIH	H	INF	LFCI	TO
1.000000	-127.8488	4773.538	-9.317954	1.104531	-1.096887	0.866768
	(7.33264)	(257.197)	(4.86337)	(0.07836)	(0.00876)	(0.19682)

Adjustment coefficients (standard error in parentheses)

D(LGDP)	-0.243299
	(0.49294)
D(FDI)	-0.087087
	(0.03830)
D(FDIH)	-0.002749
	(0.00120)
D(H)	0.005912
	(0.00525)
D(INF)	-0.068074
	(0.11839)
D(LFCI)	-0.184006
	(0.45794)
D(TO)	0.025620
	(0.12530)

6 Cointegrating Equation(s):   Log likelihood   1841.955

Normalized cointegrating coefficients (standard error in parentheses)

LGDP	FDI	FDIH	H	INF	LFCI	TO
1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	-82.46124
						(7.02821)
0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.069741
						(0.02613)
0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.002416
						(0.00087)
0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	-0.050535
						(0.00497)
0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	-5.967771
						(1.35702)
0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	-79.16285
						(7.07820)

Adjustment coefficients (standard error in parentheses)

D(LGDP)	-1.156915	37.27127	-1167.844	85.03980	0.605194	1.063880
	(1.05252)	(90.2783)	(3066.63)	(71.7539)	(0.76441)	(1.02620)
D(FDI)	0.008959	13.98042	-546.1708	-9.854291	-0.242926	0.017076
	(0.05833)	(5.00310)	(169.948)	(3.97650)	(0.04236)	(0.05687)
D(FDIH)	0.000216	0.444624	-17.23403	-0.305643	-0.007469	0.000583
	(0.00182)	(0.15595)	(5.29745)	(0.12395)	(0.00132)	(0.00177)
D(H)	0.009711	-0.855128	32.95367	-0.797970	0.002794	-0.009775
	(0.00920)	(0.78902)	(26.8021)	(0.62712)	(0.00668)	(0.00897)
D(INF)	-0.497861	32.51918	-1046.260	27.59735	0.087511	0.485469
	(0.24842)	(21.3078)	(723.796)	(16.9356)	(0.18042)	(0.24221)
D(LFCI)	-0.684477	-100.5524	3541.298	-17.39186	0.438653	0.643809
	(0.80929)	(69.4154)	(2357.94)	(55.1719)	(0.58776)	(0.78905)
D(TO)	0.532670	-7.623531	191.0517	-33.22705	-0.265900	-0.499314
	(0.25218)	(21.6300)	(734.740)	(17.1917)	(0.18315)	(0.24587)

Appendix 9

Vector Error Correction Estimates
Sample (adjusted): 1996Q3 2010Q4
Included observations: 58 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1	CointEq2	CointEq3	CointEq4	CointEq5	CointEq6	
LGDP(-1)	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000	
FDI(-1)	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	
FDIH(-1)	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	
H(-1)	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	
INF(-1)	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	
LFCI(-1)	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	
TO(-1)	-51.48253	-0.047602	-0.001578	-0.079726	0.910370	-47.55921	
	(7.06285)	(0.02463)	(0.00085)	(0.00738)	(1.50892)	(7.16425)	
	[-7.28920]	[-1.93295]	[-1.85743]	[-10.8000]	[0.60333]	[-6.63841]	

Error Correction:	D(LGDP)	D(FDI)	D(FDIH)	D(H)	D(INF)	D(LFCI)	D(TO)
CointEq1	-1.339902	-0.042827	-0.001252	0.008209	-0.190497	-0.072454	0.552619
	(0.64309)	(0.06068)	(0.00181)	(0.00675)	(0.17637)	(0.61344)	(0.14984)
	[-2.08355]	[-0.70574]	[-0.69096]	[1.21638]	[-1.08011]	[-0.11811]	[3.68798]
CointEq2	66.42194	5.748743	0.188548	-0.664581	36.76621	-30.40074	-6.835968
	(65.1579)	(6.14852)	(0.18361)	(0.68375)	(17.8697)	(62.1537)	(15.1822)
	[1.01940]	[0.93498]	[1.02692]	[-0.97196]	[2.05747]	[-0.48912]	[-0.45026]
CointEq3	-1959.584	-239.9455	-7.695391	25.36919	-1237.335	1025.095	150.4063
	(2202.35)	(207.821)	(6.20590)	(23.1109)	(603.997)	(2100.80)	(513.161)
	[-0.88977]	[-1.15458]	[-1.24001]	[1.09772]	[-2.04858]	[0.48795]	[0.29310]
CointEq4	98.63287	-5.759304	-0.174104	-0.462629	12.82964	-16.83097	-36.66596
	(43.5872)	(4.11304)	(0.12282)	(0.45739)	(11.9539)	(41.5776)	(10.1561)
	[2.26288]	[-1.40025]	[-1.41752]	[-1.01144]	[1.07326]	[-0.40481]	[-3.61024]
CointEq5	0.769206	-0.134557	-0.004061	0.002889	-0.093136	-0.033192	-0.318982
	(0.48145)	(0.04543)	(0.00136)	(0.00505)	(0.13204)	(0.45925)	(0.11218)
	[1.59769]	[-2.96177]	[-2.99375]	[0.57192]	[-0.70537]	[-0.07228]	[-2.84347]
CointEq6	1.236299	0.057816	0.001701	-0.008438	0.196364	0.071475	-0.512980
	(0.65214)	(0.06154)	(0.00184)	(0.00684)	(0.17885)	(0.62207)	(0.15195)
	[1.89576]	[0.93951]	[0.92563]	[-1.23308]	[1.09792]	[0.11490]	[-3.37592]
D(LGDP(-1))	1.109613	0.041323	0.000962	-0.019581	0.143879	0.545663	-0.450416
	(0.63789)	(0.06019)	(0.00180)	(0.00669)	(0.17494)	(0.60848)	(0.14863)
	[1.73951]	[0.68650]	[0.53504]	[-2.92526]	[0.82244]	[0.89677]	[-3.03042]
D(LGDP(-2))	0.415158	0.016158	0.000483	-0.010407	0.147194	0.114953	-0.343576
	(0.70568)	(0.06659)	(0.00199)	(0.00741)	(0.19353)	(0.67315)	(0.16443)
	[0.58831]	[0.24265]	[0.24298]	[-1.40533]	[0.76055]	[0.17077]	[-2.08952]
D(LGDP(-3))	0.190550	0.022103	0.000410	-0.016683	0.101016	-0.573935	-0.293913
	(0.56877)	(0.05367)	(0.00160)	(0.00597)	(0.15599)	(0.54255)	(0.13253)

VECM cont'd	[0.33502]	[0.41182]	[0.25605]	[-2.79511]	[0.64760]	[-1.05785]	[-2.21775]
Error Correction:	D(LGDP)	D(FDI)	D(FDIH)	D(H)	D(INF)	D(LFCI)	D(TO)
D(LGDP(-4))	0.740759	-0.013048	-0.000557	-0.009937	0.105156	-0.024773	-0.257237
	(0.53067)	(0.05008)	(0.00150)	(0.00557)	(0.14554)	(0.50621)	(0.12365)
	[1.39588]	[-0.26055]	[-0.37222]	[-1.78444]	[0.72253]	[-0.04894]	[-2.08036]
D(LGDP(-5))	0.349180	-0.012357	-0.000302	0.001695	-0.000846	-0.245166	-0.208257
	(0.45968)	(0.04338)	(0.00130)	(0.00482)	(0.12607)	(0.43849)	(0.10711)
	[0.75961]	[-0.28488]	[-0.23338]	[0.35130]	[-0.00671]	[-0.55912]	[-1.94435]
D(FDI(-1))	-103.2601	-6.854942	-0.228917	-0.487732	-5.346235	-59.06453	24.48782
	(66.4902)	(6.27424)	(0.18736)	(0.69773)	(18.2351)	(63.4246)	(15.4926)
	[-1.55301]	[-1.09255]	[-1.22180]	[-0.69902]	[-0.29318]	[-0.93126]	[1.58061]
D(FDI(-2))	-23.64257	-5.055871	-0.149286	0.066742	-6.336359	7.653912	-2.122006
	(46.8889)	(4.42459)	(0.13213)	(0.49204)	(12.8594)	(44.7270)	(10.9254)
	[-0.50423]	[-1.14268]	[-1.12988]	[0.13564]	[-0.49274]	[0.17113]	[-0.19423]
D(FDI(-3))	-21.74803	-3.639813	-0.107614	-0.146162	15.89287	-22.94650	7.091083
	(40.3049)	(3.80331)	(0.11357)	(0.42295)	(11.0537)	(38.4466)	(9.39130)
	[-0.53959]	[-0.95701]	[-0.94753]	[-0.34558]	[1.43779]	[-0.59684]	[0.75507]
D(FDI(-4))	5.305415	-4.397948	-0.138775	-0.177200	16.27273	-5.950639	-3.388172
	(32.3105)	(3.04893)	(0.09105)	(0.33906)	(8.86120)	(30.8207)	(7.52854)
	[0.16420]	[-1.44246]	[-1.52422]	[-0.52262]	[1.83640]	[-0.19307]	[-0.45004]
D(FDI(-5))	34.76669	-0.351177	-0.004195	-0.005084	0.153237	15.16059	-11.05419
	(27.7872)	(2.62209)	(0.07830)	(0.29159)	(7.62069)	(26.5060)	(6.47459)
	[1.25118]	[-0.13393]	[-0.05358]	[-0.01743]	[0.02011]	[0.57197]	[-1.70732]
D(FDIH(-1))	3237.744	236.3357	7.786592	11.97943	194.6791	1916.689	-768.0264
	(2227.30)	(210.175)	(6.27621)	(23.3727)	(610.840)	(2124.61)	(518.975)
	[1.45366]	[1.12447]	[1.24065]	[0.51254]	[0.31871]	[0.90214]	[-1.47989]
D(FDIH(-2))	673.7043	174.3357	5.077427	-5.899659	224.2592	-160.3715	72.25587
	(1557.68)	(146.988)	(4.38931)	(16.3459)	(427.196)	(1485.86)	(362.949)
	[0.43251]	[1.18606]	[1.15677]	[-0.36093]	[0.52496]	[-0.10793]	[0.19908]
D(FDIH(-3))	690.1972	125.4131	3.667158	1.620251	-497.6815	862.5043	-252.5787
	(1322.92)	(124.835)	(3.72780)	(13.8824)	(362.813)	(1261.93)	(308.249)
	[0.52172]	[1.00463]	[0.98373]	[0.11671]	[-1.37173]	[0.68348]	[-0.81940]
D(FDIH(-4))	-199.1803	134.8669	4.182819	2.904162	-500.0540	192.1544	83.16858
	(1037.42)	(97.8948)	(2.92331)	(10.8865)	(284.515)	(989.591)	(241.726)
	[-0.19200]	[1.37767]	[1.43085]	[0.26677]	[-1.75757]	[0.19418]	[0.34406]
D(FDIH(-5))	-1037.252	8.864959	0.055867	-0.431808	-34.82763	-414.6080	293.1380
	(855.322)	(80.7111)	(2.41018)	(8.97555)	(234.574)	(815.886)	(199.295)
	[-1.21270]	[0.10984]	[0.02318]	[-0.04811]	[-0.14847]	[-0.50817]	[1.47087]
D(H(-1))	-100.2866	2.858199	0.075628	-0.692001	-0.742660	-37.82569	38.59565
	(44.5132)	(4.20041)	(0.12543)	(0.46711)	(12.2078)	(42.4608)	(10.3718)
	[-2.25296]	[0.68046]	[0.60294]	[-1.48145]	[-0.06083]	[-0.89084]	[3.72119]
D(H(-2))	-52.01310	0.424790	0.017254	-0.290286	8.685482	-14.47318	20.88977
	(35.8969)	(3.38736)	(0.10115)	(0.37669)	(9.84480)	(34.2419)	(8.36422)
	[-1.44896]	[0.12540]	[0.17058]	[-0.77061]	[0.88224]	[-0.42268]	[2.49752]
D(H(-3))	-38.08136	1.245161	0.034143	-0.394418	24.74819	-35.57235	25.08800
	(34.3056)	(3.23719)	(0.09667)	(0.35999)	(9.40836)	(32.7239)	(7.99341)

VECM cont'd	[-1.11006]	[0.38464]	[0.35320]	[-1.09562]	[2.63045]	[-1.08705]	[3.13858]
Error Correction:	D(LGDP)	D(FDI)	D(FDIH)	D(H)	D(INF)	D(LFCI)	D(TO)
D(H(-4))	11.24051	1.229528	0.041792	-0.179883	16.71884	67.33245	5.954452
	(28.4431)	(2.68399)	(0.08015)	(0.29848)	(7.80058)	(27.1317)	(6.62743)
	[0.39519]	[0.45810]	[0.52143]	[-0.60267]	[2.14328]	[2.48169]	[0.89846]
D(H(-5))	7.307440	3.885315	0.126101	-0.197125	4.804382	26.25794	10.91555
	(32.3998)	(3.05735)	(0.09130)	(0.34000)	(8.88569)	(30.9059)	(7.54935)
	[0.22554]	[1.27081]	[1.38120]	[-0.57979]	[0.54069]	[0.84961]	[1.44589]
D(INF(-1))	-2.105719	0.080802	0.002367	-0.002474	0.697134	-0.320953	0.933240
	(0.86425)	(0.08155)	(0.00244)	(0.00907)	(0.23702)	(0.82440)	(0.20138)
	[-2.43647]	[0.99079]	[0.97200]	[-0.27284]	[2.94122]	[-0.38932]	[4.63432]
D(INF(-2))	-1.289709	0.115825	0.003515	-0.003814	-0.089056	-0.399138	0.458570
	(0.59266)	(0.05593)	(0.00167)	(0.00622)	(0.16254)	(0.56533)	(0.13809)
	[-2.17615]	[2.07107]	[2.10457]	[-0.61332]	[-0.54791]	[-0.70603]	[3.32074]
D(INF(-3))	-0.237349	0.068402	0.002227	-0.001618	-0.177564	0.985812	0.152544
	(0.55885)	(0.05273)	(0.00157)	(0.00586)	(0.15326)	(0.53308)	(0.13021)
	[-0.42471]	[1.29710]	[1.41399]	[-0.27588]	[-1.15854]	[1.84927]	[1.17148]
D(INF(-4))	-1.344764	0.020308	0.000497	-0.010547	-0.103951	-0.474840	0.524678
	(0.63566)	(0.05998)	(0.00179)	(0.00667)	(0.17433)	(0.60635)	(0.14811)
	[-2.11553]	[0.33857]	[0.27722]	[-1.58110]	[-0.59629]	[-0.78311]	[3.54242]
D(INF(-5))	-1.079968	-0.002925	-0.000211	-0.003095	0.327768	-0.904755	0.342587
	(0.48399)	(0.04567)	(0.00136)	(0.00508)	(0.13273)	(0.46167)	(0.11277)
	[-2.23139]	[-0.06404]	[-0.15441]	[-0.60933]	[2.46935]	[-1.95973]	[3.03786]
D(LFCI(-1))	-0.821935	-0.063567	-0.001887	0.010233	-0.280065	-0.537570	0.394406
	(0.65918)	(0.06220)	(0.00186)	(0.00692)	(0.18078)	(0.62879)	(0.15359)
	[-1.24690]	[-1.02193]	[-1.01569]	[1.47935]	[-1.54918]	[-0.85492]	[2.56784]
D(LFCI(-2))	-0.828318	-0.041675	-0.001056	0.011568	-0.008722	-0.143885	0.474333
	(0.63979)	(0.06037)	(0.00180)	(0.00671)	(0.17546)	(0.61029)	(0.14908)
	[-1.29467]	[-0.69029]	[-0.58569]	[1.72297]	[-0.04971]	[-0.23576]	[3.18184]
D(LFCI(-3))	-0.734758	-0.001835	5.21E-05	0.006140	0.001762	-0.267722	0.436276
	(0.52678)	(0.04971)	(0.00148)	(0.00553)	(0.14447)	(0.50250)	(0.12274)
	[-1.39480]	[-0.03692]	[0.03509]	[1.11078]	[0.01220]	[-0.53278]	[3.55435]
D(LFCI(-4))	-0.492150	0.002377	0.000180	0.003410	0.045637	0.231314	0.293025
	(0.37941)	(0.03580)	(0.00107)	(0.00398)	(0.10405)	(0.36191)	(0.08840)
	[-1.29715]	[0.06640]	[0.16857]	[0.85651]	[0.43859]	[0.63914]	[3.31460]
D(LFCI(-5))	-0.544339	0.006232	0.000219	-0.000505	0.215466	-0.157012	0.300424
	(0.28151)	(0.02656)	(0.00079)	(0.00295)	(0.07720)	(0.26853)	(0.06559)
	[-1.93366]	[0.23459]	[0.27547]	[-0.17095]	[2.79088]	[-0.58472]	[4.58014]
D(TO(-1))	-1.101863	-0.062895	-0.002578	-0.034040	0.189594	0.002471	0.365693
	(1.02559)	(0.09678)	(0.00289)	(0.01076)	(0.28127)	(0.97830)	(0.23897)
	[-1.07437]	[-0.64988]	[-0.89211]	[-3.16287]	[0.67406]	[0.00253]	[1.53029]
D(TO(-2))	-1.096095	-0.076218	-0.002386	-0.017338	0.462825	-0.850584	0.303534
	(1.16728)	(0.11015)	(0.00329)	(0.01225)	(0.32013)	(1.11346)	(0.27198)
	[-0.93902]	[-0.69195]	[-0.72539]	[-1.41544]	[1.44575]	[-0.76391]	[1.11600]
D(TO(-3))	-1.667510	-0.064166	-0.002346	-0.024932	0.363937	-2.210165	0.050209
	(1.09375)	(0.10321)	(0.00308)	(0.01148)	(0.29996)	(1.04332)	(0.25485)

| VECM cont'd | [-1.52458] | [-0.62170] | [-0.76131] | [-2.17225] | [1.21327] | [-2.11839] | [0.19701] |

Error Correction:	D(LGDP)	D(FDI)	D(FDIH)	D(H)	D(INF)	D(LFCI)	D(TO)
D(TO(-4))	0.303908	-0.113554	-0.004034	-0.025853	0.353393	-0.992272	0.031872
	(1.11081)	(0.10482)	(0.00313)	(0.01166)	(0.30464)	(1.05959)	(0.25882)
	[0.27359]	[-1.08333]	[-1.28879]	[-2.21788]	[1.16003]	[-0.93647]	[0.12314]
D(TO(-5))	-0.055523	-0.087305	-0.002399	0.013595	0.402912	-0.585755	-0.103040
	(1.13495)	(0.10710)	(0.00320)	(0.01191)	(0.31126)	(1.08262)	(0.26445)
	[-0.04892]	[-0.81519]	[-0.75005]	[1.14151]	[1.29445]	[-0.54105]	[-0.38964]

Appendix 10

VEC Residual Serial Correlation LM Tests
Null Hypothesis: no serial correlation at lag order h
Sample: 1995Q1 2010Q4
Included observations: 58

Lags	LM-Stat	**Prob**
1	35.91944	0.9181
2	60.47411	0.1260
3	72.12969	0.0174
4	61.13939	0.1144
5	74.95094	0.0099
6	62.19146	0.0977
7	62.47041	0.0936
8	63.72750	0.0769
9	55.09365	0.2551
10	58.63402	0.1630
11	57.32306	0.1938
12	57.26234	0.1953
13	97.84755	0.0000
14	49.51653	0.4525
15	51.39839	0.3800
16	77.91031	0.0054
17	49.47151	0.4543
18	66.99205	0.0447
19	60.59490	0.1238
20	79.77252	0.0036
21	48.52936	0.4921
22	58.82141	0.1589
23	56.65783	0.2109
24	46.28424	0.5839

Probs from chi-square with 49 df.

Roots of Characteristic Polynomial
Endogenous variables: LGDP FDI FDIH H INF LFCI TO
Exogenous variables:
Lag specification: 1 5
Date: 09/13/11   Time: 01:34

Root	Modulus
1.000000	1.000000
0.984154	0.984154
0.971181 - 0.131207i	0.980004
0.971181 + 0.131207i	0.980004
-0.974963	0.974963
0.650609 - 0.713747i	0.965778
0.650609 + 0.713747i	0.965778
-0.001340 + 0.953389i	0.953390
-0.001340 - 0.953389i	0.953390
0.275798 + 0.898299i	0.939683
0.275798 - 0.898299i	0.939683
0.888594 + 0.292680i	0.935554
0.888594 - 0.292680i	0.935554
0.173430 + 0.918780i	0.935005
0.173430 - 0.918780i	0.935005
0.808389 - 0.443324i	0.921970
0.808389 + 0.443324i	0.921970
0.752401 - 0.516698i	0.912735
0.752401 + 0.516698i	0.912735
0.461575 - 0.782780i	0.908733
0.461575 + 0.782780i	0.908733
-0.725799 - 0.542064i	0.905880
-0.725799 + 0.542064i	0.905880
-0.610754 - 0.645703i	0.888794
-0.610754 + 0.645703i	0.888794
-0.450253 + 0.753169i	0.877492
-0.450253 - 0.753169i	0.877492
-0.793967 - 0.294871i	0.846954
-0.793967 + 0.294871i	0.846954
-0.339845 - 0.761287i	0.833698
-0.339845 + 0.761287i	0.833698
-0.804371 - 0.084899i	0.808839
-0.804371 + 0.084899i	0.808839
-0.565984 - 0.496593i	0.752956
-0.565984 + 0.496593i	0.752956
0.022593 + 0.733694i	0.734042
0.022593 - 0.733694i	0.734042
0.269339 + 0.537314i	0.601040
0.269339 - 0.537314i	0.601040
0.485803	0.485803
0.156549 + 0.306997i	0.344608
0.156549 - 0.306997i	0.344608

VEC specification imposes 1 unit root(s).

Appendix 11

Impulse Response:

Period	LGDP	FDI	FDIH	H	INF	LFCI	TO
1	0.116341	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.073662	0.004964	0.048756	0.024209	-0.011772	0.019597	0.045317
3	-0.001159	-0.012902	0.044433	0.023164	-0.020461	0.021150	0.033134
4	-0.016646	-0.015911	0.029380	-0.012099	0.017306	0.034902	-0.007297
5	0.033423	-0.011191	0.019092	-0.015714	0.027689	0.022473	0.000995
6	0.031692	-0.011968	0.023709	0.012135	0.013835	0.019052	0.014352
7	-0.029656	-0.017792	0.057451	0.026935	0.019255	0.037783	0.022911
8	-0.010051	-0.006634	0.020857	-0.012092	0.015427	0.023584	0.001531
9	0.080077	0.007447	-0.032816	-0.016567	0.011351	0.022662	0.021537
10	0.118200	0.013817	-0.047900	-0.002865	-0.000119	0.010766	0.061952
11	0.117242	0.019098	-0.040407	0.010698	-0.008812	-0.001608	0.069020
12	0.126321	0.020273	-0.029235	0.005798	-0.000519	0.000941	0.070362
13	0.168946	0.020115	-0.047571	0.010531	-0.000563	0.002647	0.070522
14	0.150854	-0.008388	-0.047625	0.022745	-0.007709	0.019880	0.072733
15	0.093606	-0.004643	-0.038019	0.018853	-0.013009	0.016143	0.071545
16	0.104119	0.024166	-0.044256	0.005451	-0.016058	-0.012296	0.058512
17	0.132803	0.046067	-0.050996	0.005162	-0.018376	-0.025349	0.063140
18	0.136197	0.039957	-0.061822	0.015606	-0.022882	-0.028798	0.072795
19	0.120887	0.026247	-0.070724	0.018645	-0.014850	-0.024841	0.072826
20	0.143744	0.039855	-0.089872	0.012799	-0.003996	-0.033927	0.077408
21	0.192412	0.069542	-0.112449	0.018726	-0.002695	-0.047494	0.091622
22	0.186208	0.078832	-0.111417	0.033621	-0.005133	-0.043555	0.099288
23	0.151859	0.065896	-0.106167	0.031205	-0.004225	-0.035505	0.085683
24	0.154048	0.059334	-0.110368	0.021838	0.001685	-0.033433	0.074201

Cholsky Ordering: LGDP FDI FDIH H INF LFCI TO

Appendix 12

Variance Decomposition

Period	S.E.	LGDP	TO	LFCI	INF	H	FDIH	FDI
1	0.116341	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.156606	77.31300	5.868926	4.943816	5.119306	4.053492	1.412946	1.288513
3	0.170786	65.01220	6.411227	8.655585	9.866041	6.409715	1.223745	2.421484
4	0.179663	59.60541	6.638745	14.61179	9.144724	5.810572	1.468238	2.720517
5	0.188163	57.49711	6.084710	17.41831	9.589822	5.306346	1.484903	2.618797
6	0.194994	56.18077	5.898211	19.68381	9.014082	5.358214	1.416742	2.448172
7	0.213466	48.80810	5.314354	26.91270	8.189557	7.039807	1.689318	2.046169
8	0.217004	47.44426	5.175059	28.31709	8.128206	6.812155	1.873606	2.249616
9	0.236677	51.33191	4.960863	23.88646	6.885536	9.440453	1.593096	1.901683
10	0.276468	55.89782	8.290544	17.55617	5.283048	10.30055	1.231921	1.439949
11	0.311667	58.13589	11.48826	14.05817	4.746677	9.360552	1.014869	1.195585
12	0.345463	60.68815	13.59157	11.47712	4.076841	8.356463	0.826422	0.983434
13	0.394521	64.87185	13.73100	8.894959	3.375913	7.585837	0.653465	0.886976
14	0.432440	66.16313	13.58775	7.458615	3.625455	7.402368	0.867719	0.894961
15	0.450707	65.22188	14.43700	6.891323	4.081328	7.506512	1.004967	0.856994
16	0.469449	65.03705	15.02181	6.801966	3.955710	7.436197	0.947689	0.799573
17	0.497731	64.97533	15.52859	7.170557	3.648414	7.097256	0.850195	0.729667
18	0.527825	64.43539	16.21863	7.498207	3.524014	6.823973	0.774793	0.724987
19	0.552624	63.56741	16.88569	7.568411	3.432575	6.873017	0.827487	0.845412
20	0.585699	62.61384	17.44811	7.848261	3.099494	7.108047	0.811264	1.070988
21	0.639183	61.63553	17.89641	8.540041	2.637370	7.173896	0.684924	1.431830
22	0.689035	60.34277	18.65837	9.022965	2.395792	7.125414	0.594148	1.860539
23	0.723213	59.18312	19.12089	9.362455	2.277985	7.294943	0.539321	2.221286
24	0.754701	58.51410	19.13056	9.608245	2.120402	7.605668	0.497825	2.523197
25	0.792318	58.24156	19.01233	9.782936	1.945498	7.788474	0.455070	2.774128
26	0.826876	57.77792	19.10261	9.992915	1.849008	7.818930	0.418530	3.040090
27	0.851362	56.95510	19.33750	10.28994	1.803266	7.892857	0.397877	3.323461
28	0.873818	56.18118	19.31104	10.69703	1.724435	8.102138	0.382734	3.601436
29	0.899944	55.64690	19.15303	10.99994	1.634029	8.337894	0.361522	3.866688
30	0.924701	55.16771	19.16435	11.16788	1.572034	8.476119	0.342496	4.109417
31	0.943917	54.70711	19.26575	11.29879	1.526644	8.557485	0.328771	4.315448
32	0.960799	54.38318	19.29279	11.38898	1.475008	8.643775	0.318011	4.498260
33	0.978823	54.26744	19.21808	11.36826	1.421223	8.742798	0.306447	4.675757
34	0.994553	54.21308	19.18462	11.23145	1.377071	8.820786	0.298360	4.874636
35	1.005639	54.09884	19.21584	11.09960	1.346877	8.875861	0.292532	5.070448
36	1.014786	54.02248	19.20203	10.99684	1.326071	8.917367	0.288230	5.246976

Cholsky Ordering: LGDP TO LFCI H INF H FDIH FDI

Appendix 13

List of Abbreviations

ADF   Augmented Dick-Fuller

BIT   Bilateral Investment Treaties

BRSA   Banking Regulation and Supervision Agency

CA   Competition Authority

CEEC   Central and Eastern European Countries

CMB   Capital Markets Board of Turkey

CPI   Consumer Price Index

EFTA   European Free Trade Association

EMRA   Energy Market Regulation Authority

ESI   European Stability Initiative

EU   European Union

FDI   Foreign Direct Investment

FTA   Free Trade Agreement

FZ   Free Zones

GDP   Gross Domestic Product

GERD   Government Expenditure on Research and Development

GNP   Gross National Product

IAC   Investment Advisory Council of Turkey

IFF   Institute of International Finance

IMF   International Monetary Fund

ISPAT   Investment Support and Promotion Agency of Republic of Turkey Prime Ministry

KOSGEB   Small & Medium Enterprises Development Organization

M&A   Merge and Acquisitions

MENA   Middle East and North Africa

MNC   Multinational Corporations

MNE	Multinational Enterprises
OECD	Organization for Economic Co-operation and Development
OIZ	Organized Industrial Zone
PCT	Patent Cooperation Treaty
PPI	Producer Price Index
R&D	Research and Development
SUR	Seemingly Unrelated Regression
TAMRB	Tobacco Products and Alcoholic Beverages Market Regulation Board
TDZ	Technology Development Zone
TNC	Transnational Corporations
TTGV	Technology Development Foundation of Turkey
TUBITAK	The Scientific and Technological Research Council of Turkey
TurkStat	Turkish Statistical Institute
TUSIAD	Turkish Industrialist's and Businessmen's Association
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
USD	United States Dollar
UTIKAD	Freight Forwarders & Logistics Service Providers Association in Turkey
VAR	Vector Autoregressive Model
VECM	Vector Error Correction Model
VAT	Value Added Tax
WIR	World Investment Report
YASED	International Investors Association of Turkey
YOIKK	Coordination Council for the Improvement of the Investment Environment