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THE IMPACTS OF FOREIGN DIRECT INVESTMENT INFLOWS IN BRIC
COUNTRIES
A Comparison with Turkey
1990-2010

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2009. 09. 16. 001

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“Ben, Ayşegül ABAYLI, bu Yüksek Lisans Tezinde sunulan çalışmanın şahsıma ait olduğunu ve başka çalışmalardan yaptığım alıntıların kaynaklarını kurallara uygun biçimde tez içerisinde belirttiğimi onaylıyorum.”

Ayşegül ABAYLI



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Abstract

Over the 1990s, most developing countries considered a series of market reforms, including the opening of their capital accounts. The role of Foreign Direct Investment (FDI) in the growth process has been recognized by policy makers. Capital Flows could affect domestic investment in several ways. Firstly, FDI contributes directly to new plant and equipment, the so-called “*greenfield*” FDI. Secondly, due to linkages between firms, FDI may deliver spillover investment, beyond any direct increase in their capital stock. For instance, multinational corporations (MNCs) may utilize inputs from domestic suppliers, creating an investment opportunity for local firms.

While most studies in the literature claim that Foreign Direct Investment inflows have a significantly positive effect on economic growth via technology diffusion or the formation of human capital, opponent emphasize the lack of empirical evidence.

It can be argued that higher FDI Inflows have provided the recent, relatively stable, growth rates seen in BRIC countries, but will it be possible to observe any macroeconomic stabilization in the long-run as a result of FDI Inflows? The main purpose of this study to explain the FDI Inflows’ linkages and direction, and the associated macroeconomic factors.

DOĞRUDAN YABANCI SERMAYE YATIRIMLARININ BRIC
ÜLKELERİ VE TÜRKİYE EKONOMİSİ ÜZERİNE ETKİSİ
1990-2010

Özet

Bu çalışmada doğrudan yabancı sermaye yatırımlarının, BRIC ülkeleri ve Türkiye ekonomisinde büyüme, ithalat, ihracat ve enflasyon üzerine etkisi, 1990-2010 yılları arasında Brezilya, Rusya, Hindistan, Çin ve Türkiye'yi kapsayan panel veri kullanılarak, Üç Aşamalı En Küçük Kareler yöntemiyle araştırılması amaçlanmıştır. Teorik olarak, doğrudan yabancı sermaye yatırımlarının gittiği ülkelerde tasarruf yetersizliği sorununun çözümü ya da sermaye birikimine katkıda bulunarak ekonomik büyümeye neden olacağı beklenir. Diğer bir bakış açısıyla, doğrudan yabancı sermaye akımlarının yönü ekonomik ve siyasi istikrara sahip, yüksek büyüme performansında olan ülkelere doğru olacaktır. Üç Aşamalı En Küçük Kareler yöntemiyle çözülen ekonometrik model sonucunda, Doğrudan Yabancı Sermaye yatırımlarının, ihracat ve büyüme üzerinde anlamlı etkisi olduğu gözlemlenirken, işsizlik ve ithalat üzerinde herhangi anlamlı bir etkisi gözlemlenememiştir.

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List of Abbreviations

- FDI : Foreign Direct Investment
BRIC : Brazil, Russia, India and China - Powerful Economic Bloc
GDP : Gross Domestic Product
GFCF : Gross Fixed Capital Formation
3SLS : Three Stage Least Squares
OLS : Ordinary Least Squares
MNCs : Multinational Corporations
-

Introduction

This study seeks to examine how FDI Inflows affect the economies of BRIC countries' and of Turkey. It achieves this by questioning whether, for these countries' macroeconomic environments, FDI inflows are real, or not.

The term BRIC refers to the four largest and fastest growing developing countries: Brazil, Russia, India, and China. By 2050, the BRIC is expected to bypass most of the world's current major economic powers. Here, it is important to note that the BRIC is not a political entity – such as the European Union - neither is it a trading association. It has been widely argued that the BRIC countries have the potential to become a powerful economic bloc due to their low labor and production costs. Therefore, many sources argue that the BRIC countries could have a significant influence on the world's economy over the coming decades.

The BRIC countries share many common features such as vast geographic areas, large populations and economic indicators demonstrating fast growth. However, they also have important differences due to their different economic development models and resources endowments.

“Building Better Global Economic BRICs” was the title of a 2001 Goldman Sachs Report that looked at the growth prospects of the four largest developing economies, economies that are culturally and geographically different. This report's main finding was that the BRICs would, in the near future, play a significant role in the global economy. Looking at the BRIC countries individually; Brazil is a domestic, service-oriented economy; the main resources providing economic development in Russia are energy and raw materials, with its economic development fundamentally depending on that energy and those raw materials; the Indian economy is service-led and supported by exports; China's economic development is encouraged through manufacturing exports and investment.

The structure of this thesis is as follows. After the introduction section, the second chapter will examine the relationship between

macroeconomic variables and FDI inflows. The macroeconomic variables considered, the drivers of FDI inflows, are the Gross Domestic Product (GDP), Exchange Rates, Inflation, Imports, Exports, the unemployment rate and Gross Fixed Capital Formation (GFCF). This research aims to provide a better understanding of FDI inflows' role on the BRIC countries and on Turkey, so that its role in relation to countries' growth pathways, imports, exports and their unemployment rates can be analyzed.

The third part of this thesis will focus on historical background, in the context of the major determinants of economic development for each BRIC country. First an evaluation of the economic impacts of FDI inflows on the growth, imports, exports and unemployment rates in BRIC countries and in Turkey will be undertaken. Next, an econometric model will be used to determine the significance, or insignificance, of the parameters; this model is named the Panel Simultaneously Equation Method. Generally, in the literature, a Panel Simultaneously Equation system is applied to resolve issues with endogenous parameters. In econometric models, the Three Stage Least Squares (3SLS) Method, a Pooled Method, is used to resolve the endogeneity issue. The 3SLS is chosen because of causality between variables; Ordinary Least Squares (OLS) is, generally, no longer used. As the 3SLS method ignores the country effect, a fixed effect method is used in order to take country's effect individually into account.

In addition to all of these, the third part will also focus the definitions of each variable used in the model. The model's methodology and its estimated results will be presented separately. The fourth and the final part will conclude with some arguments that focus on the benefits of Foreign Direct Investment Inflows. In principle, there are numerous tools for promoting economic growth. Firstly, capital in a form such that it can support capital formation can provide a friendly investment environment. Secondly, international capital flows and the re-structuring of factor endowments can result in more efficient productive sectors through their provision of the high levels of finance required by industries.

Therefore, openness in trade is also perceived as a significant economic tool promotion amongst economies. Under this approach, the linkage between FDI, trade openness and economic growth could be interpreted as positive and statistically significant. This connection should be considered over the long run. However, a question appears here as to whether this connection functions equally for all of the BRIC countries and Turkey. Do foreign direct investments generate positive externalities for the host country? The evidence so far is mixed, including the beneficial through to the damaging impacts of FDI inflows on growth.

1. Theoretical Framework of FDI Inflow and the Drivers

1.1. Drivers of FDI Inflow

1.1.1. Exchange Rates and FDI Inflows

Exchange rate movements are one of the most significant instruments impacting on FDI activity. According to the definition of exchange rate as set down by the World Bank for the official exchange rate (LCU per US\$, period average): “*the exchange rate is determined by national authorities or the rate is determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages (local currency units relative to the U.S. dollar).*”¹

According to Blonigen, (1997); when a country’s currency devalues, this is seen by investors as an opportunity to obtain assets in that country due to the reduction of the asset’s cost.² Similarly, Barrell and Pain (1996) argue that investors targeted the markets which currency appreciates for their investment decision.³ From an investor’s perspective, currency depreciation could make their investments more profitable at some later date. Due to the fact that, it is mostly evaluated as there is a significant time lag between exchanges rate and FDI decisions. Ahn (1998) drew attention to the different attitudes towards increasing FDI competitiveness.⁴ According to their empirical research, the devaluation of a currency generally had a positive effect on FDI competitiveness.

¹ International Monetary Fund, International Financial Statistics. Catalog Sources World Development Indicators.

² Blonigen, B., “Firm-Specific Assets and the Link Between Exchange Rates and Foreign Direct Investment.” *The American Economic Review*, Vol. 87, No. 3. (Jun.1997), pp. 447-465

³ Barrell, R. And Pain, N., 1996, “An Econometric Analysis of US Foreign Direct Investment”, *Review of Economics and Statistics*, 78 (2), 200-07.

⁴ Ahn, Y.S., Adj, S.S. and Willett, T.D. (1998) “The effect of inflation exchange rate policies on direct investment to developing countries”. *International Economic Journal*. 12(1), 95-104.

It is easy to see that high exchange rate volatility could be seen as one sign of uncertainty in an economy, with such uncertainties having a major effect on FDI inflows.⁵

Furthermore, Campa (1993) states that the lack of information in any highly volatile economic environment would affect investors' decision.⁶ Most studies state that exchange rate volatility reduces FDI inflows. At the same time, inappropriate macroeconomic policy tools could result in the appreciation of a currency, discouraging FDI.⁷ Thus, the exchange rates that determine how much of one currency can be exchanged for another are based on important factors such as Central Bank interest rates, a country's debt levels, and its economic performance. More clearly, the total amount of FDI inflows and its direction have been affected by exchange rates between the countries.

The depreciation of a currency indicates that its value decreases relative to the value of other currencies. In terms of exchange rates, a currency depreciation causes a reduction in the country's wages and the production costs for its foreign trading partners. Without any other changes, a real currency depreciation can provide a "locational advantage", due to productive capacity investments. The real currency and exchange rate depreciations have an increasing effect on foreign investors' overall rates of return.

In looking at the effects of exchange rate levels on FDI, in principle, exchange rate movements need to be linked with changes in relative production costs across countries. The effects of forecast exchange rate movements on "relative wages" can result in higher costs of investment financing. Therefore, investors should take into account interest rate parity as well as the expected rate of return when comparing investment across

⁵ Krishna, E., D'Souza D., (1995) "Uncertainty and foreign direct investment: the role of moderators", *International Marketing Review*, Vol. 12 Iss: 3, pp.47 – 60.

⁶ Campa, J., "Entry by foreign firms in the United States under exchange rate uncertainty" *Review of Economics and Statistics*, 75, 1993; 614-622.

⁷ Kyereboah-Coleman, A., Kwame F., (2008) "Effect of exchange-rate volatility on foreign direct investment in Sub-Saharan Africa: The case of Ghana", *Journal of Risk Finance*, The, Vol. 9 Iss: 1, pp.52 - 70

countries. In the empirical literature, it has been discussed that, depending on investments' rates of return and the structure of a country's capital markets, a country can face imperfect capital market considerations. For instance, Froot and Stein (1991) examined capital market imperfections. They emphasized the importance of having perfect information about the results of their investment decisions.⁸ Here, if there is a lack of information, then investors and multinational companies that either borrow or increase their capital internationally will require a greater compensation. This will be required to meet the relatively high costs of their investment abroad.

Another aspect of exchange rate movements is that the depreciation in a targeted market's currency will increase the relative wealth of the home country. A company holding a greater proportion of its wealth in its own currency implies a depreciation of the targeted market currency. This raises the relative wealth of the home country's investors by reducing their relative cost of capital.

Blonigen (1997) underscores the significance of the "firm-specific" argument in encouraging exchange rates movements, thus affecting FDI.⁹ We can assume that both foreign and domestic firms get the same opportunity to have firm-specific asset in their domestic markets, but having these assets in a foreign markets provide different opportunities. Therefore, the value of different assets has been affected by currency movements. In principal, exchange rate movements could have an effect on foreign firm's assets relatively.

Thus, foreign currency depreciation would result in an improvement of FDI into the foreign economy. In addition to the effects of level of exchange rates, FDI activity has been also affected by volatility in exchange rates. When the exchange rates are highly volatile, so the expected value of investment projects' decreases and, therefore, FDI reduces. The effects of volatility are generally gathered into two groups: "*production flexibility*" and

⁸ Froot, K., and Stein J., "Exchange Rates and Foreign Direct Investment: An Imperfect Capital Markets Approach", *Quarterly Journal of Economics* (1991) 1191-1217.

⁹ Blonigen, B., "Firm-Specific Assets and the Link Between Exchange Rates and Foreign Direct Investment." *The American Economic Review*, Vol. 87, No. 3. (Jun.1997), pp. 447-465

“*risk aversion*”.¹⁰ Looking at the “*production flexibility*” arguments, one consideration is that producers require a production structure – a commitment of investment capital to domestic and foreign capacity – before they accurately know either their production costs or how many goods will be sold. Once exchange rates and demand conditions become known, the producer has already committed to a certain level of employment and to their production location.

The “*Risk aversion argument*” is another approach that includes a linkage between exchange rate variability and investment. The most significant point here is that investors need to be compensated for their risks, and that exchange rate movements are additional risks to investments’ rates of return.

Given the explanations above, exchange rates’ effects on FDI inflows can be considered as of exogenous, means that unanticipated and independent affects on an economic activity within an environment. It is also important to be considered the co-movements between the exchange rates and monetary, demand and productivity performances for the countries.

According to Goldberg (2005), these correlations could alter expected profits, with profits presumed to decrease with exchange rate variability.¹¹ The reduced investment shares in foreign markets have been caused by the actual depreciations in the home country currencies; but generally the results were not statistically significant.

Although theoretical approaches mostly indicates that the share of total investment which is located abroad could have an effect on exchange rate volatility negatively, but, the increasing in exchange rate volatility does not mean that the exchange rate volatility reduces domestic investment activity. After clarification, exchange rate volatility could contribute to production activity internationalization without reducing economic activity in

¹⁰ Goldberg, L. “Exchange Rates and Foreign Direct Investments” *Princeton Encyclopedia of the World Economy*, Princeton University Press, 2006.

¹¹ Goldberg, L. & Charles K.. “Foreign Direct Investment, Exchange Rate Variability and Demand Uncertainty.” *International Economic Review*, vol. 36 no. 4, (November 2005) pp. 855-73.

the home country. Real exchange rate movements can affect FDI via relative wages, relative wealth and via the imperfect operation of capital market tools.

1.1.2. Trade Openness – Imports - Exports - FDI Inflows

In the literature, there are a great number of discussions on how to measure openness. Tariffs and quotas could be seen as an ideal tool to understanding the relationship between trade policies and outcomes. Policies, distance to trading partners, a country's location and size, also the exchange rate behaviors and trade barriers case to entry could have an effect on the trade volumes. Generally, trade volumes can be evaluated by openness. The linkage between statutory tariffs and trade taxes as a percentage of trade could be seen as two measurements of the trade volumes; and mostly defined the nominal exchange rate and the ratio of foreign investment inflows to GDP. If we use a traditional method to measure trade volumes as the share of exports to GDP, we can easily realized that developing countries are now more integrated into the world economy than are the industrialized countries.

Historically, China has had the highest levels of protection. Although having the highest level in protections, China had the most successful performance in integrating itself into the world economy over two decades. In 1990, China and also India were two of the most protected economies in the world, with average tariff rates around 40%.

Most of the studies on this topic in the literature indicate that trade can result in the development of advanced skills in developing countries via the importation or the adoption of better production technologies and innovations.

This takes place either through competition in the intense international marketplace, or through subcontractors being utilized by foreign business concerns. Producers in import-substitution economies meet competition from their foreign equivalents. According to Frankel and Romer (1999),

developing countries require the adoption of advanced or more capital-intensive production facilities in order to survive.¹²

Performance in achieve trade openness have positive and significant impacts on economic growth by way of increasing on the physical capital accumulation, stable technological transfers and via overall improvements in macroeconomic conditions. FDI inflows are a significant factor in the increased supply of investment funds for domestic investment. This support comes by way of the increase in capital formation in the host country. FDI inflows also encourage the investment locally when foreign firms buy domestically produced inputs or when foreign firms supply intermediate inputs to local firms. By way of providing intermediate inputs, FDI inflows can improve host country export capacity, and increase its foreign exchange earnings. Increasing host country export capacity has significant positive effect on local job creation. It also encourages the transfer of advanced technology to developing host countries.

Together, these significantly positive effects could be taken as one factor boosting host countries' overall economic growth. The relationship between trade and FDI inflows has been mostly acclaimed as a significant factor in the process of economic growth. Cross-country and country-specific empirical studies (Mansouri, 2005), on the interaction of trade and FDI on growth and those investigations of the FDI-growth nexus and the trade-growth nexus (Lipsey, 2000 and Pahlavani, 2005) have genly shown that both FDI inflows and trade improve economic growth.¹³

However, in looking at both FDI inflows and trade, their positive and significant effects differ from country to country. There are clear results in the

¹² Frankel, J., and Romer D.. (1999). "Does trade cause growth?" *American Economic Review* 89(3):379-399

¹³ Mansouri B., (2005), "The Interactive Impact of FDI and Trade Openness On Economic Growth: Evidence from Morocco." , Paper presented at the 12th Economic Research Forum (ERF) Conference, Cairo. December, 2005.

Lipsey, R.E. (2000). "Inward FDI and Economic Growth in Developing Countries", *Transnational Corporations*, 9(1), 61-95.

Karbasi, A., E. Mahamadi, S. Ghofrani, (2005). "Impact of Foreign Direct Investment on Economic Growth." Paper presented at the 12th Economic Research Forum Conference, 19th–21st December, 2005, Egypt.

literature that demonstrate that the growth-encouraging effects of FDI inflows and trade depend on a country's macroeconomic environment. However, Balasubramanyam, 1996; Borensztein, 1998; De Mello, 1999; Lipsey, 2000; and Xu, 2000 have all concluded that, for some countries, their studies demonstrated some negative effects of FDI and trade on the growth process.¹⁴

In the 1970's, Jagdish Bhagwati discussed how trade policies could have a positive effect on the FDI inflows, with trade barriers and by way of encouraging investment in less productive import-substituting industries. This, the well-known "Bhagwati Hypothesis", can be broken down into two different categories. First, those countries which have a relatively more open trade regime and that attract more FDI: the "*volume effect*"; second, those countries that have experienced an increase in efficiency directly due to FDI: the "*efficiency effect*" (productivity trickle-down). Efficiency effect mostly focuses on the question of how would trade liberalization increase FDI spillovers?

Bhagwati's well known hypothesis states that "*with due adjustments for differences among countries for their economic size, political attitudes towards FDI and stability, both the magnitude of FDI flows and their efficacy in promoting economic growth will be greater over the long run in countries pursuing the export promotion (EP) strategy than in countries pursuing the import substitution (IS) strategy*" (Bhagwati 1978, 1985).¹⁵

Thus, the positive and significant effect of the interaction between FDI and trade on the growth process is not automatic and also depends on several specific country factors. Within growth processes, the inflow of foreign capital into an economy contributes to an increase in aggregate investment and to overall economic activity. Because Foreign Direct Investments

¹⁴ Borensztein, E., J. de Gregorio and J.-W. Lee (1998), "How does foreign direct investment affect economic growth?", *Journal of International Economics*, vol. 45, no. 1, pp. 115-135.

Balasubramanyam, V N & Salisu, M & Sapsford, D. 1996. "Foreign Direct Investment and Growth in EP and IS Countries," *Economic Journal, Royal Economic Society*, vol. 106(434), pages 92-105, January.

De Mello, L. "Foreign Direct Investment-led growth: evidence from time series and panel data", *Oxford Economic Papers* 51, (1999), 133-151

¹⁵ Bhagwati, J. N. (1978). "Anatomy and Consequences of Exchange Control Regimes", Vol. 1, *Studies in International Economic Relations*, 10 (New York: National Bureau of Economic Research).

consists of a combination of capital, technology and management skills, access to new markets and entrepreneurship, it could be seen as having a positive impact on the robustness of an economy. (Dunning, 1993)¹⁶

In surveys, in addition to transfers and diffusion of technology and knowledge, also changes in markets' structures and the degree of competition in the host country have been perceived by respondents as FDI externalities. A major proportion of FDI inflows occur between high income developed countries. Most of the studies in the literature seeks to identify the determinants of FDI inflows from a wide range of economic determinants as explanatory variables: market size, market potential, openness, human capital, labor and trade costs, investment costs, the trade deficit, exchange rate, tax, inflation, the budget deficit. In addition to economic determinants, policy-variables such as trade barriers and political stability or risk have been cited.¹⁷ (Bloningen, 2005).

According to the various results of empirical studies, generally, openness is one of more significant determinants of FDI inflows when compared to other potential FDI determinants. Several studies have looked at the differences between specific groups of countries. (Asideu, 2002; Bloningen and Wang, 2004).¹⁸ Economic analyses have shown that, depending on the type of FDI activity, the degree of openness or trade restrictions have positive or negative impacts on FDI inflows.

Decision makers have an opportunity to influence the degree of openness in an economy through restrictions placed on higher, or lower, cost international trade. The impact of changes in the openness of the FDI inflows depends on the motivations behind the FDI activities. (Dunning, 1993;

16Dunning, J. H. (1973), "The Determinants of International Production" Oxford Economic Papers, New Series, Vol. 25, No. 3, pp. 289-336

¹⁷ Bloningen, B. A. (2005). A Review of the Empirical Literature on FDI Determinants, Atlantic Economic Journal 33 (4): 383-403.

¹⁸ Asideu, E., "On the Determinants of Foreign Direct Investment to Developing Countries: Is Africa Different?", World Development, Vol. 30, No.1, 2002.

Wang, M., Blonigen, B. "Inappropriate Pooling Wealthy and Poor Countries in Empirical FDI Studies", NBER Working Paper No. W10378, March 2004.

Brainard, 1997; Markusen and Maskus, 2002).¹⁹ Theoretically, amongst firms seeking to increase their market share, they might want a high degree of openness, few restrictions such as trade barriers, low trade costs, thinking that the market could be better served through export side rather than through FDI. Subsequently, openness could be associated with a low level of FDI. However, “horizontal” market-seeking investments could be made to serve combined markets in which a greater degree of openness would have a positive impact on FDI inflows.

For instance, some companies invest in skilled labor, semi-skilled labor or in new technology that is cheaper than in their country of origin. These companies are seeking efficiency or vertical investment. By differentiating the costs of natural factor endowments and by taking advantage of economies of specialization and scale, these are opportunities for firms investing in a host country.

Greater openness means fewer trade barriers and lower costs. This in turn lowers the total cost of the products produced for export to the company’s other branches. From this perspective, a higher degree of openness would have had a positive effect on these firms.

According to Auty, Sachs and Warner, the term “resource curse” describes the paradox of countries with a wealth of natural resources that have then faced slower economic growth. (Auty, 1993; Sachs and Warner, 1995a).²⁰ Wealth in resources, in many cases, is related to higher levels of corruption, deterioration of institutional quality, fewer political rights, more conflicts, lower GDP and lower levels of education (Stijns, 2006).²¹

This deterioration in institutional quality and high levels of corruption might have the effect of increasing the cost of trade and thus be linked with a lower degree of openness. It is difficult to determine the overall effect of

¹⁹ Markusen, J. R., & Maskus, K. E. (2002). Discriminating among alternative theories of the multinational enterprise. *Review of International Economics*, 10(4), 694–707.

²⁰ Auty, R. M. (1993). *Sustaining Development in Mineral Economies: The Resource Curse Thesis*. London: Routledge.

Sachs, J.; Warner, A. (2001), "The curse of natural resources". *European Economic Review* 45

²¹ Stijns, P., “Natural resource abundance and human capital accumulation”, *World Development*, Volume 34, Issue 6, June 2006, pp. 1060-1083

openness on FDI in the more resource-wealthy economies. The degree of openness may be associated with other policy imperfections in the economy. One example is the exchange rate controls which cause foreign investors to find it more difficult to act in the economy. The foreign investors' ease of operating in an economy will, most likely, have a greater positive impact on that FDI seeking vertical, as opposed to horizontal, markets.

Most of the empirical studies that focus openness as a determinant of FDI, for instance Chakrabarti (2001), apply an extreme-bounds analysis to determine the important determinants of an FDI increase. The result is that market size, as measured by GDP per capita, is the only most significant determinant of FDI inflows - it is positively correlated with FDI.²² Moosa and Cardak (2006) who also used an extreme-bounds analysis, reported that export as a percentage of GDP is likely to be a significant determinant that positively impacts FDI inflows.²³

In their studies, Singh and Jun (1995), Lucas (1993), Harms and Ursprung (2002) and Jensen (2003) all demonstrated a positive and significant relationship between trade openness and FDI inflows.²⁴

Turning to the other variables that determine FDI inflows, Lankes and Venables (1996) reported that firms that seek more efficient production and costs reductions are more affected by political stability and investment risk. Thus, institutions, governance and risk are more important factors for those firms that form part of vertical investments. Most studies in the literature conclude that lesser political risk results in positive FDI inflow effects. These studies include Singh and Jun (1995), and Wei (2000). Jensen (2003) pointed out that democratic policy institutions are linked with higher levels of FDI inflows. Most of the studies also demonstrate that those countries with greater civil and political freedom attract more FDI than do other countries, and the

²² Chakrabarti, A. "The Determinants of Foreign Direct Investments: Sensitivity Analyses of Cross-Country Regressions" Volume 54, issue 1 pages 89-114, February, 2001.

²³ Moosa, Imad A. & Cardak, Buly A., 2006. "The determinants of foreign direct investment: An extreme bounds analysis," *Journal of Multinational Financial Management*, Elsevier, vol. 16(2), pages 199-211, April.

²⁴ Singh, H., and Jun, K., 1995. "Some new evidence on determinants of foreign direct investment in developing countries", World Bank Policy Research Paper, No. 1531, Washington, World Bank

respectful for civil and political freedom is a significant determinant of FDI Inflow for the countries.

Busse and Hefeker (2007) show that more government stability, less internal and external conflict, less corruption, lower levels of ethnic tension, more law and order and bureaucratic quality all have positive and significant impacts on FDI inflows.²⁵

On the other hand, studies by UNCTAD (1998), Wheeler and Mody (1992), Jaspersen (2000), and Hausmann and Fernandez-Arias (2000) found no significant relationship between aggregate political stability indices and FDI. Egger and Winner (2005) indicate that a positive linkage between corruption and FDI Inflow. According to the Egger and Winner (2005), less corruption is generally related to greater institutional quality.²⁶ Wei (2000)²⁷ shows that corruption tends affect FDI adversely. When country risk is higher, investors may try to find a higher rate of return before they are actually willing to invest. Recent research looks to define the importance of international trade for growth by focusing on the following mechanisms in order to understand the relationship of openness with trade and growth.

According to Romer (1999)²⁸, quantitative models are useful for measuring those gains in trade that come from increased variety. Romer (1999) indicated that the advantages from increased consumption variety could be large given an assumption of heterogeneity, gains could be small, especially once this liberalization process brings "marginal varieties" onto the market, causing the total consumption of these goods to decrease. In addition, benefits from the increase in foreign varieties could be neutralized by losses linked to the displacement of domestic varieties. Broda and Weinstein's

²⁵ Busse, M. & Hefeker, C., 2007. "Political risk, institutions and foreign direct investment," *European Journal of Political Economy*, Elsevier, vol. 23(2), pages 397-415, June.

²⁶ Egger, P and H. Winner, (2005), "Evidence on Corruption as an Incentive for Foreign Direct Investment. ", pp.932-952.

²⁷ Wei, Shang-Jin. 2000. "How Taxing is Corruption on International Investors?" *Review of Economics and Statistics* 82(1)

²⁸ Jeffrey A. Frankel and David R., "Does Trade Cause Growth?" *The American Economic Review* Vol. 89, No. 3 (Jun., 1999), pp. 379-399

(2006)²⁹ paper is another significant paper of the literature evaluating the linkages of openness to trade and growth. Broda and Weinstein report that over the last several decades, an important part of growth has come from improvements in the variety imported. The improvement in this important variety could be seen as resulting from a country's own trade reforms.

Eaton and Kortum (1999) discussed the gains stemming from the import of goods incorporating new technology, concluding that tariffs have an influence on the price of capital and, through this influence, they also affect the capital:labor steady-state ratio. Coe and Helpman (1995), Keller (1998), and others examined in Keller's 2004 paper all view the role of trade as an instrument for "international R&D trickle-down". A country will gain the true advantage of importing capital and intermediate goods when it is able to learn the R&D outcomes of the exporting country.

In other words, trade increases international flows of technical know-how. In the literature, there are many different papers that have empirically examined this topic, producing different results (Aitken 1997).³⁰ In addition, several papers state the role of intermediate inputs in increasing productivity growth. Most studies indicate that increasing the input of intermediate goods or reducing input tariffs are related to large productivity gains. According to the studies by Harrison (1994), Levinsohn (1993) and Mundler (2004), Brazil and Turkey were among the countries that increased their competitive levels following their lowering of trade barriers and a decreasing of their price-cost margins. Improved competition may provide an advantage for firms as they seek to attract more innovative activity, or it may become possible to lower consumer prices.

According to a new heterogeneous trade model, trade increases productivity. The most efficient firms can then benefit from this increased productivity by reallocating their output. In the original framework developed by Melitz (2003), firms are attracted to productivity in different ways. These

²⁹ Broda and Weinstein's (2006), "Globalization and the Gains from variety" *Quarterly Journal of Economics* (2006) 121 (2): 541-585

³⁰ Aitken, B., G.H. Hanson and A.E. Harrison. 1997. "Spillovers, Foreign Investment and Export Behavior." *Journal of International Economics*, 43(1): 103-132.

attractions are predetermined and unchanging over time. When a country opens up to international trade, only the more productive and efficient firms remain; the less productive firms are forced to exit the market.³¹

There are many studies of this type. As I mentioned earlier, reallocation of share in a market indicates an important role for other complementary policies. These policies make it possible for firms to expand, enter or exit the market. In addition, market share reallocations play an important role in obtaining productivity gains following trade reforms. Using the Olley-Pakes (1993) approach to estimate productivity, Pavcnik indicate that firms that competed with imports improved their productivity over time.

Thus, Melitz's (2003) assumption that firms receive an exogenous productivity draw which is unchanging over time is not consistent for an actual firm. The latest heterogeneous firm research improves Melitz to allow firm-level productivity to develop over time.

Most of the studies in the literature claim that decreasing foreign tariffs encourages lower productivity firms to make a decision as to whether to invest in increasing labor productivity, whether to provide more product innovation, or whether to adopt more advanced technology in their manufacturing. All of these cause productivity gains for the firms. Bernard, Redding, and Schott (2006) have also pointed out where firms produce multiple goods, trade liberalization may make it possible for firms to focus on the goods in which they are most productive.³²

Most the studies in the literature report that international trade promotes productivity gains for exporters through learning by doing. To start with, empirical studies claimed that the connection between productivity levels and export status was very light. Subsequently, empirical studies of these first generation companies found that the best firms were from among the exporting firms, following which they demonstrated the strong positive correlation between productivity levels and export status. Their research was

³¹ Melitz Marc J. "The Impact of Trade on Intra-Industry Rallocations and Aggregate Industry Productivity", *Econometrica*, Vol.71, No.6, November, 2003), 1695-1725

³² Bernard, A. B., Jensen B., Redding S., Schott P., *Firms in International Trade*, Journal of Economic Perspectives – Volume 21, Number 3 – Summer 2007- Pages 105-130

based on case studies from different countries such as Germany (Bernard & Wagner, 1997) and the United States (Bernard & Jensen, 1999). Pavcnik (2002) suggested that firms are the most efficient in manufacturing when they are operating in export-competitive sectors. However, these firms do not show productivity improvements over time.

On the other hand, most of the empirical studies after the first generation – *the second generation* – abandoned the hypothesis that there is no connection between productivity levels and export status, especially in relation to learning by doing for exporters. Blalock and Gertler (2004) demonstrated the strong linkage in that firms experience a rapid increase in productivity of around 3-5% following the initiation of exporting. They argued that “while firms in the developed and middle income countries are likely to be as efficient as those in their trading partners’ countries, firms in the poorest countries may have much more to gain from exposure to international export markets.”³³

According to a study by Van Biesebroeck (2005) which was based on nine African countries, Bieebroeck shows evidence in favor of learning by exporting in Africa. This study also examined a random connection from exporting to productivity. Lileeva and Trefler (2007) found a result similar to Blalock and Gertler’s explanations. Lileeva and Trefler demonstrate that lower productivity firms are very likely to invest as they learn how to access foreign markets. This is in contrast to higher productivity firms which have a high probability of exporting without any additional investment.

De Loecker (2007) also showed that exporters increased their productivity once they began exporting. According to De Loecker, the selection process of entry into the export market plays a significant role in determining the linkage between export and productivity. De Locker’s studies’ results demonstrate generally that it is the most productive firms that begin exporting. De Loecker also claims that learning by exporting was more extensive for those firms which aim to obtain a greater income from exports.

³³ Harrison A, Clare A. R, “Trade, Foreign Investment, and Industrial Policy for Developing Countries” NBER, Handbook of Development Economics, Volume 5, 2010, p. 4039 – 4214.

A number of studies in the literature have sought to examine how we can distinguish between selection into exporting (i.e., the most productive firms choose to become exporters) and the impact of exporting on learning and productivity.

In conclusion, the importance of learning by doing is that the most productive firms are likely to become exporters, learning by exporting was greater for those firms which sought a higher income from exporting and, finally, learning from exporting has an important effect both in technologically backward countries and for less productive firms.

Multinational Corporations (MNCs) attract in FDI for several reasons, according to the literature. The most important reason is for access to cheap raw materials and other inputs for their production process, for the expansion of existing markets, and to provide better services to local customers in the host country. At this point, the relationship between FDI and exports can be realized as complementary, substitutory, or both. Whether complementary or substitutory depends on the home country's perspective.

For example, a Multinational Corporation could manufacture goods directly in the host country instead of exporting manufactured goods from the home country. In this case, manufacturing the goods in host country directly, it brings an advantage to the host country while reducing its costs in the home country. This is an example of a substitutory situation, showing the relationship between exports and FDI. On the other hand, increasing manufactured operations in the host country could develop into the importation of intermediate inputs, other inputs and related goods and services from the MNCs home country. This relationship between FDI and exports would be complementary. Studies in the literature have investigated the relationship between FDI and its effects on the home country's exports:

Helpman (1984)³⁴ and Horst (1972)³⁵ found, mainly, substitution, that FDI tends to reduce exports from the home country; Etkholm et al (2004)³⁶

³⁴ Helpman E. 1984. A Simple Theory of International Trade with Multinational Corporations. *Journal of Political Economy* 92(3): 134 - 142.

³⁵ Horst T. 1972. The industrial composition of U.S. exports and subsidiary sales to the Canadian market. *American Economic Review*. 62(1/2): 37-45.

reported that FDI causes an increase in exports from the home country, this being an example of a complementary relationship. In addition, Markusen & Maskus (2002)³⁷ and Gray (1998)³⁸ both demonstrated that FDI has both substitutory and complementary effects on the home country's exports. Generally, FDI and export flows have been considered alongside GDP, because of the direct impact of both FDI and export flows on GDP.

1.1.3. Unemployment and FDI Inflows

Most of the studies in the literature conclude that changes in a country's trade or direct investment affect its employment levels only temporarily. Macroeconomic factors act to bring employment to the economy, driving unemployment to its "natural rate". This rate depends on the economy's different structural characteristics, the labor force's demographic composition, its degree of wage flexibility, its minimum wage level, the extent of competition in its product market, and the magnitude of its social welfare programs.

Where unemployment is at its "natural" rate and the balance of payments are at equilibrium, we can then consider what the effects of a one-sided reduction in a country's tariffs will be on aggregate employment. This reduction in tariffs will cause an increase in the country's imports compared to its exports. Therefore, foreign goods will become cheaper, relatively. In an economy with a fixed exchange rate and in which wages tend to be fixed in the short-term due to overlapping wage contracts, more foreign goods and the resulting trade deficit will cause a decrease in both income and employment levels.

If the monetary policy decision makers do not compensate for the decrease in the money supply caused by the deficit, interest rates will

³⁶ Ekholm K, Forslid R, Markusen JR. 2004. Export-platform foreign direct investment. IIS Discussion Paper No. 50, Dublin: Institute for International Integration Studies.

³⁷ Markusen JR, Maskus KE. 2002. Discriminating among alternative theories of the multinational enterprise. *Review of International Economics* 10(1): 694-707.

³⁸ Gray HP. 1998. International Trade and Foreign Direct Investment: The Interface. In *Globalization, Trade and Foreign Direct Investment*, J. H. Dunning (ed). Oxford: Elsevier; 19-27.

increase, leading to decline in domestic investment which, respectively, will reduce income and employment even further.

Many economic analyses have looked at the impact that shifts in the volume and pattern of trade have had on output and employment, especially in the trade of developed with developing countries. Most of the findings in these economic surveys show that, for most developing countries, the net employment impacts of changes in exports and imports have not been significant. However, alongside this, changes in trade have introduced significantly adverse employment effects in certain industries, especially in labor-intensive sectors.

Most of these studies discuss how the employment effects of FDI in the investment-receiving country have been controversial. The effects of changes in employment depend on the country-specific factors and on the form of the investment. It is generally accepted that FDI's positive effects on employment are greater in response to Greenfield investment³⁹. On the other hand, if foreign capital arrives in a different form, such as M&As or the privatization of enterprises, foreign investment will have limited and even negative effects on employment levels.

1.2. The Relationship between Growth and FDI Inflows

Many studies in the literature aim to answer the question of how Foreign Direct Investment Inflows (IFDI) affects a host country's economy. There is a broad range of empirical results in the literature showing little sign of convergence. For example, most policymakers appear to have made their own assessment and decided that FDI inflows are important for their countries. The United Nations Conference on Trade and Development (UNCTAD) publishes what it calls "changes in national FDI regulations". These reports state that from 1991 to 2002, there were over 1,500 changes making a country's regulations more favorable towards FDI, and fewer than 100 making its regulations less favorable (UNCTAD 2003, 124).

³⁹ Greenfield Investment: A type of investment which increased physical investment to affect growth.

There are several possible and important effects of FDI inflows on a host country. It is generally accepted that investing firms have a greater quality of advanced technology than do the host country's firms. This advanced technology then provides higher-quality goods and services, at lower prices and in greater volumes for the host country. Subsequently the host country experiences an increase in consumer welfare. Another possible impact of FDI inflows is that inward investment increases the host country capital stock, leading to increased outputs from that host country. In the early literature, this issue was looked at, especially in relation to determining whether inward aid or investment either supplements or displaces local investment; this research did not focus on direct investment. One specific consideration of direct investment was that foreign-owned firms paid higher wages to their local employees. These higher wages led to increased average wage levels in the host country when these higher wages spread to domestically owned firms.

These wages and productivity "spillovers" to domestically owned firms could be positive or negative. In both wages and productivity, for example, foreign-owned firms are more likely to hire more skilled workers at higher wages, leaving only the less qualified workers for domestically owned firms. Productivity spillovers can be perceived negatively by realizing that when foreign-owned firms won market share from domestically owned firms, this leads to a decrease in domestically owned firms' production levels. In the literature, the definitions of the most important effects of inward FDI, especially those related to spillovers, are supported by insufficient evidence. For instance, regarding wage spillovers, Görg and Greenway (2001) show that negative spillovers using panel data, while cross-sectional data have reported positive spillovers. With regards to productivity spillovers from foreign owned to domestically owned firms Görg and Greenaway (2001,23) found "only limited evidence in support of positive spillovers and most of the

studies fail to find positive spillovers, with some even reporting negative spillover”.⁴⁰

Lipsev reported that “the evidence for positive spillovers is not strong” (2003,304), concluding a literature review: “the evidence on spillovers is mixed. No universal relationships are evident.” (2004,365).

Regarding host country economic growth, Carkovic and Levine (2002) showed no significant effects of FDI inflows over the entire 1960-95 period and only irregularly significant effects over five year intervals. Lipsey concluded that there is no universal relationship between the ratio of inward FDI flows to GDP and the rate of growth of a country (2003,297).

Borensztein, De Gregorio and Lee (1998) found a strongly complementary interaction between FDI and human capital, with the positive contribution of FDI to economic growth being dependent upon a minimum threshold stock of human capital.⁴¹ Mello (1997) described the stronger positive effects of FDI inflows on host country growth as a function of the host country’s level of development as well as its openness and greater attention to export promotion.⁴²

1.3. General Literature Review for FDI Inflow

“One dollar of FDI is worth no more (and no less) than a dollar of any other kind of investment.”⁴³ – Dani Rodrik, 2003.

There are several forms of Foreign Capital Inflows. Foreign Direct Investment inflows have often been perceived as especially beneficial to the host economy. FDI inflows are generally conformed with respect to the longer term and are less liquid than other forms of capital inflows. In other words, FDI inflows are unlikely to leave the host country quickly in the case of adverse conditions. In addition, the payment of FDI inflows are more

⁴⁰ Görg, H.; Greenaway, D. “Foreign Direct Investment and intra-industry spillovers: a review of the literature”, *Research paper / Leverhulme Centre for Research on Globalisation and Economic Policy*, No: 2001, 37

⁴¹ Borensztein, E., J. De Gregorio, and J.W. Lee. 1998. “How Does Foreign Direct Investment Affect Economic Growth?”, *Journal of International Economics* 45, no.1 (June):115-35.

⁴² De Mello, Jr., Luiz R. 1997. “Foreign Direct Investment in Developing Countries and Growth: A Selective Survey”. *Journal of Development Studies* 34, no.1 (October): 1-33.

⁴³ Dani Rodrik, Appel Inaugural Lecture, Columbia University, March 27, 2003.

closely connected to domestic conditions than are interest payments on debt because of their transferal of risk to the foreign investor. Most of the survey in the literature point out that FDI often brings technology spillovers into the host economy and that, therefore, FDI may have both direct and indirect productivity benefits for the host economy (Arnold et. Al.,2011, Arnold and Javorcik, 2009; Haskel et al.,2007; Javorcik,2004; Keller and Yeaple,2009). Many countries support FDI inflow due to the fact that foreign firms make domestic enterprises more efficient and more technologically advanced.

Foreign Direct Investment means that an investment has been made seeking to obtain lasting interest in an enterprise that is functioning outside of the investor's own economy. (Kornecki, 2008) The investor's main aim is to acquire ownership and, therefore, have a major impact on the management of the enterprise. Spar (2009) studied FDI as a combined flow of capital and technology across countries, or resource transfers from one location to another.

According to The International Monetary Fund (2009), FDI is defined as nonresident investors acquiring at least 10 percent of the common shares, or their obtaining of the power to vote on the board of a public or private enterprise.

According to Dunning's classifications, the motivation for firms seeing to invest abroad can be classified as follows: market-seeking; resource-seeking; efficiency-seeking. Market-seeking FDI tries to satisfy the demand in the host country; resource-seeking FDI seeks to "secure" natural resources; efficiency-seeking FDI seeks to increase productive efficiencies of the host country via obtaining a better division of labor.

In addition to classifications of firms, Dunning's eclectic theory of Foreign Direct Investment states the three main requirements of FDI as Ownership advantage, Location advantage, and Internalization advantage. Ownership advantage indicates that a foreign firm wants to improve its competitive advantage, making it possible to compete with local firms. Location advantage (or country-specific advantage) can be considered as three sub-categories: economic advantages consisting of the quantities and

qualities of the different factors of production; political advantages including specific government policies that directly affect Foreign Direct Investment inflows and international trade; and social and cultural advantages, the differences between the home and host country, cultural diversities and general attitudes towards foreigners. In Dunning's eclectic theory, internalization advantages represent a firm benefiting from controlling a foreign business activity directly, instead of hiring a local foreign company to supply the same service. (Dunning, 1980).⁴⁴

Mostly, ownership and internalization advantages (push-side factors) depend on the home-country characteristics, making it possible for the company to improve its competitive advantage and internationalize, the location advantage is host country specific and a pull-side factor. Host countries' market size, their economic growth, labor costs, competitive levels, technology, their cultural distance, political and legal environment, infrastructure and government policy are all examples of pull-side factors that affect investors' decision to invest. Most empirical studies on the role of FDI show that FDI is an important source of capital, satisfies domestic private investment, creates new job opportunities, improves technology transfer and encourages growth of host country's whole economy.

Hypothetically, the relationships between foreign direct investment (FDI), trade openness, capital formation and economic growth all have positive tendencies. First, the well known neoclassical and endogenous growth theories emphasize that FDI promotes economic growth in a capital-scarce economy by efficiently increasing the volume of physical investment. That is to say, FDI provides long term capital complete with new technologies, managerial know-how and marketing abilities which, in turn, by creating job opportunities for employers, improving managerial skills, diffusing technologies and promoting innovations, results in increased economic growth.

⁴⁴ Dunning, John H., "The eclectic paradigm as an envelope for economic and business theories of MNE activity", *International Business Review* 9 (2000) 163-190.

Secondly, the whole process of trade openness is likely to impact on the flows of international capital in respect of its risk-return relationship. In other words, investors do not focus on long-term investments in any country which imposes tariff and non-tariff barriers to investment, or that makes it difficult to repatriate capital or profits. The extent of trade openness also indicates the level of a country's comparative advantage in attracting investment. This approach essentially depends on the "transaction cost theory" (Coase 1937, Williamson 1975)⁴⁵ that suggests that a low transaction-cost environment creates an encouraging financial environment, giving a higher return on investment for both domestic and foreign players providing FDI. In addition, the endogenous growth theories emphasize that a more open trade policy framework improves investments' allocative efficiency by restructuring the factors of production in those sectors that have a comparative advantages in trade, resulting in increasing economic growth (Solow, 1956, Balaubramanyan et al. 1996). Edwards (1992) also indicates that a country with a higher level of economic openness could obtain new technologies at a faster rate and grow quicker than a country with a lower level of openness.

Third, some level of capital formation is required before one can evaluate FDI and determine the direction of the relationship between FDI and capital formation. According to the neo-classical growth model, developing economies with their lower initial levels of capital stock lead to higher marginal rates of return and productivity – if sufficient capital stock is provided. Moreover, if sufficient additional capital is injected into a capital-deprived economy in the form of long-term investment like FDI, so that the marginal productivity of investment increases in the short term, then this will also have an impact on economic growth in the long run by increasing productivity. Newer endogenous growth theories additionally claim that the increased efficiency of investment provided by FDI gives a comparative

⁴⁵ Coase, R. 1937. The nature of the firm. *Economica*, 4: 386-405.

Williamson, O. 1975. *Markets and hierarchies, analysis and antitrust implications: A study in the economics of internal organization*. New York: Free Press.

advantage to capital-scarce economies, allowing them to catch up richer economies in the long run. (Romer 1986).

Finally, much needed investment capital supports capital formation; trade openness utilizes international capital flows, redirecting factor endowments towards more efficient productive sectors; a high level of capital formation provides the required finance so that industries can become more efficient. All of these explanations could be seen, in principle, as tools for promoting economic growth. According to this perspective, the connection between FDI, trade openness, and economic growth could be interpreted as both positive and statistically significant. Such a connection should be considered in the long run.

However, a question arises as to whether this connection functions equally for all BRIC countries and for Turkey. Do foreign direct investments generate positive externalities for the host country? The evidence so far is mixed, varying from FDI's beneficial to its damaging impacts on growth while, in the literature, many of studies report no effect at all.⁴⁶ In the previous economic analysis, foreign direct investment increased host countries' productivity and enhanced their overall economic development. This is due to the fact that FDI may not only provide direct capital financing but, also, bring with it positive externalities such as the adoption of foreign technology and know-how.

The macro-empirical literature provides a weak relationship between the positive exogenous effects of FDI on economic growth. Findings in the macro literature point out that a country's capacity to take advantage of externalities might be limited by its local conditions, such as the evolution of its local financial markets, the country's educational levels *and its absorptive capacities*. Technology brought by FDI translates into higher growth only when the host country has passed minimum threshold of human capital stock.

⁴⁶ Alfaro, L., Chanda, A., Kalemli-Ozcan, S., Sayek, S. (2010), " Does foreign direct investment promote growth? Exploring the role of financial markets on linkages ", *Journal of Development Economics* 91(2), 242-256.

Balasubramanyam et al. (1996) promote Bhagwati's hypothesis (1978, 1985) that FDI's growth effects are positive for export promoting countries, while they may be negative for import substituting nations.

Blomstrom et al. (1994) and Coe et al. (1995) support the claim that for FDI to have positive effects on growth the host country must have reached an adequate level of development so that, via this development, the host country can benefit from higher productivity. In contrast, De Mello (1996) states that in developed countries the relationship between FDI and domestic investment is negative. Li and Liu (2005) then point out that FDI not only has direct impacts on growth, but also indirect impacts via its interaction with human capital.

Borensztein et al. (1998), using a larger sample, found that FDI inflows have positive impacts on growth via interactions between FDI and human capital. De Mello (1999) presents the positive effects of FDI on economic growth seen in both developed and developing countries, especially supporting that assertion that long-term growth in host countries is caused by spillovers of technology and knowledge from investing countries (the home countries) to host countries.

Alfaro et al. (2004) and Durham (2004) concentrate on the ways in which impacts of FDI depend on the quality of the host country's domestic financial markets. Durham (2004) emphasizes the common result: FDI has positive impacts on growth in those countries with strong financial systems. Additionally, Durham demonstrates that only countries with high quality governance, as proved by strong institutional development and an investor-friendly legal environment, benefit from the positive effects of FDI on growth.

FDI improves the benefits of technological spillover by expanding international competition and a host country's supply side skills. Subsequently, the expected results for a host country are production and selling of goods and services that enhance its economic productivity and growth.

In addition to these claims listed above, many economic studies also assume that FDI is more productive than domestic investment. Graham and Krugman (1991) say that domestic firms have better knowledge and easier access to domestic markets: if a foreign firm decides to enter a market; it gets the advantages by domestic firms. It is clearly obvious that a foreign firm that decides to invest another country enjoys lower costs and higher productive efficiencies than do its domestic competitors. For developing countries, advanced management skills and more advanced technology are provided by FDI's higher efficiencies. FDI can be seen as the main channel by which advanced technology is transferred to developing countries.

According to Frankel and Rose (1996), a country's capital inflow structure is directly related to its probability of facing crisis. In other words, a country that depends more on foreign bank credits and less on foreign direct investment may be more susceptible to sudden decreases in international capital inflows and is more likely to face a capital account crisis. Recent research has demonstrated that macroeconomic policies can be defined as an important determinant of the composition of capital inflows.

Recent researches have also found that the quality of a country's domestic governance, generally measured by corruption indices, affects the quality of its capital flows. Particularly, holding other factors fixed, countries with weak governance are perceived to have a high level of corruption, with the country's structure perceived to be relatively dependent on foreign bank credits given the investors. In addition, the quality of governance has an impact on an economy's growth and on its other social objectives.

Thus, more consideration is required before the long and short term effects of FDI on economic growth can be understood. In the literature, the problems related to understanding these long and short term effects of FDI on economic growth. They emphasize that the ratio of FDI inflows to GDP has a positive effect on output and, so, on growth (De Mello, 1997; Dutt, 1998). According to their empirical model, when an extra variable such as exports is included in the model, the FDI coefficient can either become negative or positive. (Balaubramanyam 1996, 1999; Borensztein 1998; Stocker 1999).

According to V.N. Balasubramanyam, M. Salisu, and David Sapsford (1996), FDI inflows have a strongly positive effect on a countries when the host country adopts export promotion policies rather than adopting import substitution.

1.4. Literature Review for FDI Inflows in BRIC Countries

Over the past three decades, the employment creation experience in Asian countries has varied considerably from those of Latin America and Africa. An increase in capital accumulation, encouraged by low and stable interest rates, has created advantages resulting in rapid increases in output, employment and productivity. However, unemployment in South and South-East Asia increased, principally in the 1990s, as urban job creation was not sufficient to absorb all of the migrants from rural areas. In China and India, despite having rapid growth in both GDP and exports as well as employment creation in the more modern services and manufacturing industries, a huge proportion of the labor force population is still engaged in low productivity activities. When financial and capital-account liberalization in East and South East Asia opened the door to inflows of speculative capital, the real exchange rate became overvalued, resulting the current account imbalances which stimulated the 1997-98 financial crisis. During this financial crisis, these countries experienced a huge increase in unemployment and a dramatic fall in GDP growth rates. Although, over the next period their general macroeconomic indicators improved, especially since 2002, the BRIC countries especially have not been able to obtain their pre-crisis levels.

In conclusion, despite the BRIC countries having pursued different growth paths, being focused on different macroeconomic indicators and boasting different institutional strengths, there is general acceptance of their continuing economic transformation based on their undeniable strengths. This empowerment was clearly demonstrated by their recovery from the 2008 global economic crisis. No longer can global economic policy making be considered without accommodating these BRIC countries.

2. Historical Background of FDI Inflows in BRIC and Turkey

2.1. FDI Inflows in Brazil

For analytical purposes, the World Bank classifies economies by their gross national income (GNI) per capita. Based on GNI per capita, every economy is then classified as low income, middle income (subdivided into lower middle and upper middle) or high income. The World Bank Atlas Method is used to classify the countries. On the basis of their 2010 GNI per capital, the groupings are: low income (\$1,005 or less); lower middle income (\$1,006 - \$3,975); upper middle income (\$3,976 - \$12,275); high income (\$12,276 or more). Under this classification, Brazil (\$9,390) was amongst the upper-middle income countries (a GNI \$3,976 to \$12,275).⁴⁷

So, based on the World Bank's country classifications, Brazil's is a member of the upper-middle income countries, based on GNI per capita data. Their comparatively high growth rate was provided by applying foreign saving to finance part of Brazil's investment needs. In an economic environment with low capital intensities and high capital returns, a moderate current account deficit should not be a surprise.

At the beginning of the 1990s, growth was unstable and during the 1990s instability and inflation arose. In 1994, however, Brazil adopted the "Plano Real" to control inflation. The "Real" initially gained value against the U.S. dollar due to the large of capital inflows during late 1994 and 1995. This initiated a depreciation process, resulting in the January 1999 Brazilian currency crisis. The currency's appreciation was critical in order to control inflation. Primarily, it provided cheap imported products so that suppliers could meet domestic demand. However, domestic producers needed to sell at lower prices to maintain their market share and, thus, a deterioration in the trade balance resulted.

⁴⁷ <http://data.worldbank.org/about/country-classifications>
The World Bank website, "How we classify countries".

Brazil's key social indicators have improved since 1990. In the 1980s and 1990s, development plans gave way to macroeconomic stabilization plans. Economic authorities stated that macroeconomic stability would result in the required and sufficient conditions for the development of the industrial sector.

A Package of economic reforms and inflation stabilization plans, "The Collor Plan" was implemented between 1990 – 1992. The Collor Plan consisted of fiscal and trade liberalization together with radical inflation stabilization measures. The main inflation stabilization plan involved coupling the industrial and foreign trade reform better known as PICE, The Industrial and Foreign Trade Policy, with a privatization program called the "National Privatization Program", the PND. The plans policies, announced in 1990, were increasing the prices charged by public utilities, the adoption of a floating exchange rate, the progressive opening of the economy to foreign competition, a temporary freeze on wages and prices, and the encouraging the privatization via economic deregulation.

Brazil had experienced hyperinflation for several years. In principal, the Collor Plan aimed to control inflation by "freezing" government liabilities and restricting money flows. The freeze resulted in decreased trade and industrial output which, coupled with a reduction in the money supply from 30% to 9% of GDP, reduced the rate of inflation from 81% in March to 9% in June.⁴⁸ The government had two alternatives: first, they could have continued the freeze with the reduction in economic activity leading to an economic recession; second, they could re-monetize the economy by "unfreezing" the money flows and again face the return of inflation.

Privatization proceeded though out the mid-1990s with the sale of public utilities. Other sales included major companies such as Companhia Vale Do Rio Doce, a world leader in iron ore exports, and also public enterprises whose privatization was necessary for any improvement in the regulatory framework, especially in the telecommunications and electricity

⁴⁸ Carvalho, C. E.. As origens e a gênese do Plano Collor. *Nova Economia*. Vol.16 No.1. Belo Horizonte. January-April 2006. Retrieved on September 8, 2007.

supply sectors. During that period, Brazilian industry reorganized itself by minimizing its operational structures, improving its quality and increasing its productivity. As a result, the share of industry in total GDP declined, along with that sector's number of employees. (Pichon, 2008).

By focusing more on international markets a new power structure appeared, comprised of a more regulatory state, more controlling power held by foreign capital in key technological sectors, and many private national groups involved with new technologies restructured with limited financial capital. The government placed high priority on its social development program. The government reorganized the existing social transfer programs into an integrated conditional cash-transfer program, the "Bolsa Familia", a social work program that supported the poorest parts of the population and provided them with basic social rights (including healthcare, food, education and social assistance).

The "Bolsa Familia", the world's largest integrated conditional social cash-transfer program, was launched in 2003. By the end of 2008 it had reached nearly 11.3 million families, 46 million people, in total one-quarter of Brazil's population, at an annual cost US\$ 4.5 billion.⁴⁹ The program provided an opportunity to supply income support to poor families so that they could attain their basic social needs. The program included participation in supplementary socio-educational activities. The number of beneficiaries increased quickly over four years, from 3.6 million in 2003 to 11.1 million in 2006, covering around 75% of all poor families.

However, more needed to be done to relieve rural, urban, gender and racial inequalities, so that all social groups would be guaranteed the advantages of goods and services. Access to education and health indicators⁵⁰ both improved after the implementation of the program, but regional imbalances still remain compared to the Northeast, and to South and Southeast Asia.

⁴⁹ MDS, 2009.

⁵⁰ In 2002, Brazil nearly reached the average of health expenditures in OECD as 8.72% in this ratio defined as 7.9% of its GDP on health.

Another encouraging indicator has been the decrease in the unemployment rate over recent years, falling from 11.1% in January 2002 to 7.4% in December 2007. However, job creation is still a big problem for Brazil. The labor force was only 40% of the adult population in December 2007, another point needing more attention. The country had a structural adjustment program imposed on it by the IMF, resulting in a package of structural reforms to return to macroeconomic balance. The structural reforms package consisted of the adoption of a floating exchange system for the Real, an inflation-targeting regime, and a tight fiscal policy that included a Fiscal Responsibility Law.

In March 2004, an industrial policy was announced: the “Política Industrial, Tecnológica e de Comércio Exterior – PITCE” (Industrial, Technological and External Trade Policy). *“The policy supported the government in its effort to create an environment that favored industrial development and the promotion of entrepreneurship, whilst maintaining a guarantee of macroeconomic stability”*⁵¹.

In the short term, external restrictions were approved by government to increase efficiency. In the medium to long term, fewer and better restrictions should encourage the development of key activities and technologies, resulting in a significant impact on Brazil’s competitiveness in international markets (DIEESE,2005), for example, by making trade procedures simple, by searching for new markets, and by working to improve the image of Brazil overseas. Suzigan and Furtado (2006) have identified the positive effects of, after so many years, the existence of an industrial policy. However, they also noted that this industrial policy failed as an economic development policy tool. This failure as a policy instrument was because of macroeconomic policy inconsistencies, coupled with the lack of any coordinated political drive.

⁵¹ Ghosh J., Havlik P., Marcos p. Riberio and Waltraut Urban, “Models of BRICs’ Economic Development and Challenges for EU Competitiveness”, Research Reports, The Vienna Institute for International Economic Studies, in 2009.

An efficient economic environment and the structural policy reforms that could make a country more attractive to foreign investors also plays a major role in complementing domestic targets for foreign saving. In recent years, unlike Brazil, many countries in a similar situation fail to receive substantial capital inflows due to the inadequacy their institutions, their financial markets and their education. (Lucas,1990).

Regarding FDI, Brazil is the third largest recipient of FDI inflows within the BRIC countries, following China and Russia. In 2007, Brazil's total FDI inflows were \$34 billion, up from \$18 billion in 2006. Brazil receives very significant FDI inflows, with a record level of \$48 billion reached in 2010, with its ranking within the BRICs changing to China, Brazil, Russia and India.

According to UNCTAD's 2010 Report, Brazil is the twelfth country in the world in terms retained inward FDI and the third developing country in terms of inflows. FDI inflows comprise around 12-13% of Brazil's Gross Fixed Capital Formation from 2007 and 2010. Brazil's current account deficit of around 2% of GDP and its IFDI and GFCF ratios indicate that the country is already complementing domestic capital by use of foreign saving. According to the IMF's World Economic Outlook (2010), given that 104 countries have higher current account deficits in terms of GDP than does Brazil, the country has probably not hit its limit in terms of attracting FDI inflows (IMF, 2010).

These improved policies including tax system reforms and product market regulations can make Brazil more attractive for additional FDI inflows and, at the same time, improved policies create a better environment for Brazil's domestically funded investment. Specific legal or regulatory restrictions related to FDI could make foreign investment more difficult or even impossible such that domestic investment would become predominant. With very few exceptions, there is only a low rate of FDI restrictions in Brazil. According to the OECD'S FDI Restrictiveness Index for 2010 – an index based on aggregated FDI inflow restriction policies – Brazil underwent

significant improvements between 2006 and 2010⁵². Brazil's transport and fishing sector have relatively high levels of restrictions. In addition, Brazil's Congress has recently passed laws and policies to strengthen state control over the development of the state-owned oil company Petrobras and to limit private (including foreign) equity stakes in production sharing contracts to 70%. Overall, Brazil has lowered its legal barriers, which are mostly in the form of equity restrictions, in order to attract additional foreign direct investment inflows.

Lower inflation rates have caused (enabled) a partial reduction in interest rates⁵³ which, in turn, indicate a significant credit expansion in the country. The credit expansion has caused increased household consumption, together with an increase in investment and public spending. Both of these demonstrate positive GDP growth in Brazil.

External demand for Brazilian products and the increase in their international prices have been defined as Brazil's determinants of GDP growth. The country's precautionary economic policy also resulted in a decreased rate of the public debt/GDP ratio to 35.8% by December 2008, permitting Brazil to pay back all its liabilities to the IMF. The structure of Brazil's economic debt has also progressed, with the Brazilian economy holding a smaller proportion of its total debt in foreign currency. However, the government has operated primarily by increasing its revenues, such as increasing the tax burden.

Brazil's economy still has problems. For instance, Brazil's sustainable growth rate is currently below 5%. For Hausmann (2008), this is unexpectedly low, especially given the nearly 2% increase in the working age population, the increase in female labor force participation, the promotion of urbanization and the increased levels of labor force education.

⁵² Kalinova B., Palerm A. And Thomsen S. (2010), "OECD's FDI Restrictiveness Index: 2010 Update", OECD Working Papers on International Investment, No. 2010/3, OECD Investment Division, www.oecd.org/daf/investment

⁵³ Note, however, that at the end of 2008 the Brazilian real interest rate was at 7.5% – the 13.75% target (nominal) interest lending rate minus the annual inflation of 6.25% – thus still being the second highest of the world. Turkey had the world's highest real interest rate at 7.55%. In March 2009 the nominal interest rate fell to 11.25%.

Within the BRICs, Brazil is the country with “the most developed capitalist system”, in terms of its institutions, market economy, flexibility of economic policy and democracy.⁵⁴ When looking at the country’s GNI, Brazil is classified as an upper-middle income country with a GDP of USD 1.4 billion in 2007. GNI could be realized as of in the second rank with nearly 1,3 billion \$ after the China. In 2007, Brazil was the world’s eight largest consumer market. In that year, services accounted for 66%, industry for 28% and agriculture for 6% of Brazil’s GDP.

From 2000 to 2007, the average GDP Growth rate was 3.54 %. The Brazilian GDP growth rate was 6.09% in 2007 and 5.14% in 2008. From 2000 to 2007, the average GDP growth rate in other BRIC countries was 7.17% in Russia, 7.26% in India and %10.52 in China. The average GDP growth rate in Brazil is low compared to those of other BRICs. GDP growth rates in Brazil and Russia fell, by -0.64% in Brazil, and -7.81% in Russia during 2009.

From 2008 to 2009, Brazil’s GDP growth rate dramatically fell, from 5.16% to -0.64%. The impact of the 2008 financial crisis can be taken as one reason for striking collapse of Brazil’s GDP growth rate. However, Brazil was actually one of the first developing markets to begin a recovery. Boosted by an export recovery, consumer and investor confidence increased and GDP growth rate returned to the positive, recording 7.49% in 2010. Trade surpluses and exports have an important effect on Brazil’s positive GDP growth. Annual growth in goods and services exports was 11.52% in 2010. This export expansion occurred through the increasing importance of non-traditional export markets, such as in China where this share grew more than 6%. Brazil’s exports are still based on agricultural commodities, meat, transportation equipment, iron and steel. Significant productivity gains have been won in Brazil’s agricultural sector. As a major agricultural power, Brazil is the world’s producer and exporter of sugar, coffee and orange juice, a leading exporter of tobacco, bovine meat and then soy exporter in the world.

⁵⁴ “The Way Ahead For Brazil” pwc, January 2006.

Brazil's strong and healthy growth, and especially its high interest rates, has created an attractive environment for foreign investors to make IFDI decisions. In recent years, increased capital inflows have contributed to the appreciation of the country's currency and led the government to increase taxes on some foreign investments.

Ever since the financial crisis of 2008, Brazil has faced net monetary inflows. When interest rates fell to historically low levels in the United States and other developed countries, investors facing higher risk decided to invest Brazil in order to get higher returns. Brazil remains an attractive environment for foreign capital.

More recently, in 2008, the Brazilian government has stated new tax goals for its industrial policy, a policy that includes tax incentives for investment. In addition, the National Bank of Economic and Social Development (BNDES) is to provide EUR 78 billion in finance for innovative projects in the industrial and service sectors.⁵⁵ The program was announced in 2008 and consists of four macro economic targets: increasing the ratio of investment to GDP; encouraging innovation by focusing on private R&D; raising Brazil's share of world exports; increasing the number of SME exporters. These targets could result in even more efficiency via the provision of set policies, once such policy could include focusing on the sources of positive externalities. Another policy could be a structural sector-based program for Brazil's entire industrial structure. A third policy would be to direct the nation's structural and sector-based program via competition-focused strategic objectives for the nation's industry. Finally, depending on the public policies for according to their significance to the long-term development of the country.

Like most of developing countries, Brazil experienced massive capital outflows during 2008. This caused an unexpected deterioration of all of the nation's credit lines. While, in 2008, Brazil's currency (the Real) fell more than 35% against the US Dollar, in 2009 the Real grew to an even higher

⁵⁵ In the period 1996 to 2004, the share of BNDES in total investment in the country was on average 11% (FIESP, 2005).

value due to the recover. The depreciation could be perceived as positive for the country by improving the competitiveness of its exports. The Brazilian economy's stable performance during the financial crisis and its strong and early recover, including 2010 growth of 7.5%, have had a positive effect on the country's transition from a regional to a global player. Expecting to continue to grow in the 4% to 5% range, the economy is now the world's eighth-largest and is expected to rise to the fifth largest within the next several years.

Brazil trade policy trends: A top priority is growth-generating export promotion and a reduction in the vulnerability of the financial markets. The government remains focused on the main aspects of the foreign market through trade negotiations and increased export promotion. Between 2009 and 2010, the stock of foreign direct investment in Brazil increased by 9.1%. In general, foreign investment is economically beneficial for countries because it provides funds for capital improvement projects and other investments, resulting in economic growth for those countries.

For developing countries such as Brazil, rapid and volatile monetary inflows can cause short term problems. If these are not brought under control, then the velocity of foreign investment entering the country can cause short term currency appreciations and inflation. In addition, these short term problems can be prevented without worsening long term growth and development.

Political corruption, inconvenient tax barriers, irregular fiscal and monetary policies can all create foreign direct investment and growth inefficiencies.

Another effect of foreign investment is that it often results in a country's currency growing in strength with respect to other currencies. This economic effect can be explained by looking at the mechanism of the foreign exchange market (its supply-demand relationship). For example, as US investors demand more Brazilian reals to invest in Brazil, they supply dollars to the forex to purchase these reals. As the supply of dollars increases while

the forex demand for dollars remains constant, the price of the dollar falls (and *vice versa*).

Brazil generally encourages foreign investment. It is the largest recipient of FDI in Latin America, and the United States is traditionally Brazil's top foreign investor. Since its domestic savings are inadequate to provide sustainable long-term growth rates, Brazil must remain in a position to attract FDI. However, these incoming capital flows can be seen as problematic for three reasons.

First, they can have an adverse effect on exports by strengthening the value of the currency, so that Brazil's products and services become relatively more expensive for foreign countries as Brazil's currency grows in value. Brazil has a large supply of natural resources and its 2010 exports were calculated to be 14% of its total GDP, so any decrease in its exports will lead to a deterioration of GDP growth.

Second, excessive foreign investment can cause inflationary pressures in an economy. During December 2010, Brazil's inflation rate increased to 5.9% because of rising food prices, rises in major commodity prices, rising employment and strong domestic demand. If inflation and/or inflationary expectations continue to increase, foreign investors will quickly remove their funds from Brazil. Moreover, excessive inflation can be viewed as the main obstacle to domestic demand and GDP growth.

Third, developing countries often struggle following large capital inflows because they cannot adapt to the rapid growth in credit, in asset prices or demand. Brazil and other developing countries need to improve their infrastructure, increase business innovation, enhance political transparency, improve human capital and reduce income inequality if they are to allocate its foreign capital effectively.

Monetary policies are limited to avoiding inflation and, sometimes, other obstacles. For example, to prevent excessive inflation, the Central Bank has been raising interest rates in Brazil. The differences in the interest rates between Brazil and foreign countries then make Brazil more attractive to foreign investors because they can enjoy higher profits. This causes the Real

to appreciate. If the Central Bank keeps the interest rate low regardless, then inflation could quickly get out of hand, causing foreign investment and domestic demand to dramatically reduce. From a financial viewpoint, Brazil needs to encourage a positive business environment by reducing its budget deficits via budget cuts.

During recent months, Brazil's Central Bank has interfered directly in the market, buying U.S. dollars from investors to reduce rising currency pressures.

Brazil's GDP is expected to grow by 4.5% in 2011. As the host of the 2014 World Cup and the 2016 Summer Olympics, Brazil will be in the public eye throughout the next year. Hopefully, Brazil's economic story will be shaped by rapid growth and sustainable development.

2.2. FDI Inflows in Russia

At the beginning of the 1990's, following the collapse of the USSR and as Russia integrated with the global economy by adopting an open market economy, Russia became in appropriate place for foreign direct investment. A transition from a governmental, centralized economy to a market oriented one accompanied by rapid privatization of state-owned enterprises provides foreign investors with many opportunities.

The majority of studies in the literature looking at the role of Foreign Direct Investment in the Russian economy state feature a range of different approaches. While some researchers reported that FDI was needed for the Russian economy to promote economic growth (Brock, 2005), some economists have also claimed that FDI is not a significant growth determinant for the Russian economy. (Ledyeva & Linden, 2008).

Since 1991, since the transition to a market oriented economy from a governmental centralized economy, most of state owned firms have become privately owned, increasing FDI and drawing attention to desirable regulations and governmental policies. According to World Bank data, the Russian Federation has experienced significant increases in FDI Inflow since

1994. According to the records of the Central Bank of Russia, the highest levels of FDI inflows were in 2008 at USD \$75 billion.

Russia was one of the largest FDI recipients during 2006 according to an OECD Report published in 2008. In addition to these, The United Nations Conference on Trade and Development Report for 2009 ranked the Russian Federation after China, the United States, India and Brazil as one of the most attractive destinations for FDI. (UN World Investment Prospects Survey, p.7)

The main determinants affecting investors' decisions are the company's location, the size of its local market, its growth in market share, the availability of trade partners, integration with international/regional markets and a stable and investor-friendly macroeconomic environment.

According to World Bank data, in a 2008 comparison of BRIC countries, Russia with USD \$75 billion of FDI inflows followed only China and was ahead of Brazil and India. The Russian Federal State Statistics Services lists Russia's international partners during 2009 in the following order: Cyprus (21.1%); Netherlands (17.5%); Luxemburg (13%); United Kingdom (11.6%); Germany (6.6%). The Russian economy experienced the impact of the global financial crisis, and some trading partners have been increased their total investment in Russia during 2009.

From an investor's perspective, Russia has many reasons to attract more FDI than other developing countries. Russia has a large natural resources and its growth path depends on its raw materials and energy. It also has a high degree of economic liberalization and encouraging FDI regulations. Due to the all of these features, Russia has become a very attractive country for investors (Popov, 2006). An International Commission founded by the Bleyzer Foundation has published a report detailing the FDI attractiveness amongst the CIS (Commonwealth of Independent States), including Russia. According to this report, Russia has a number of specific attractive factors: the liberalization and deregulation of its business environment; a stable and investor-friendly business and legal environment; increasing corporate and public governance quality; the removal of international capital and foreign trade limitations; financial sector

improvements; reductions in corruption; reductions in political risks; improvements in the country's image (Kenisarin & Andrews-Speed, 2008).

The OECD Investment Policy Review (2008) stated that Russian private and state-controlled firms are highly dependent on outside financing. This demand for outside financing might have been caused by underdeveloped domestic financial markets, increases in the value of the national currency or by new opportunities related to privatized assets. Rapid improvements in the economic environment such as the decrease in unemployment rate, an increase in per capita income, external debt repayments and an increase in foreign exchange reserves also contribute to making Russia attractive for foreign investors. (OECD, 2008)

Popov says that when Russian enterprises proceed to publish detailed annual reports which include the submission of environmental standards, this provides more transparency and favors foreign investors. Increases in governmental effectiveness and institutional capacity give opportunities to experience better FDI inflows, and better FDI inflows promote economic growth (Popov, 2006).

The most interesting point is that while most foreign investors, especially in the natural resources sector, perceive Russia as a doorway to opportunity, Russia's business environment still has uncertainties. (OECD, 2008). The 2008 financial crisis was caused by inadequate financial policies and regulations, asset price inflation, financial innovations that transferred risk across US national borders, extensive leverage by market participants, conflicts of interests between markets participants and increasing macroeconomic imbalances (Seyoum, 2009)

The global recession started within the US Mortgage market, with the resulting huge deficits causing in a decrease in international trade and GDP growth (Seyoum, 2009). In 2009, the World Bank reported that the global recession had had a larger impact than expected, with output declining by 2.9% accompanied by unemployment increases in many countries.

Russia has thus experienced two financial crisis, in 1998 and in 2008. In 1998, the lack of managerial efficiency caused an increase in public sector

debt. Such an increase in public sector debt is perceived as an uncertainty by the macroeconomic environment, and these market problems resulted in difficulties with repayments and the money supply.

In 2008, due to Russia's private sector short term debt and Russia's banks' business model of borrowing from abroad at lower interest rates, a domestic lending boom arose accompanied by a perception of an unstable market with high risk (World Bank, 2009.)

At the beginning of 2008, Russian policy makers stated that the current economic crisis had had a very limited effect on the Russian Banking system and that there were no signs of a liquidity or mortgage crisis due to limited financial instruments. However, later, conditions changed. Russia was affected by the global financial crisis simply because it was part of the world economy. The impact of the 2008 global world crisis can be seen in the decreased personal income, increased living expenses, a 13% inflation estimate and a 30% devaluation in the national currency.

According to the World Bank's Russian Economic Report (2009), following the 2008 global crisis, by the end of 2009 income was expected to decline by approximately 39% from 2008 levels. The level of Russia's real GDP fell by around 7.9% during 2009 and FDI inflows declined to 36.4 Million USD from 75 million USD.

In September 2008, the Russian government and its Central Bank sought to implement a number of anti-crisis policies to protect the public, the economy and the Russian financial sector: improvements in human capital via modernization of the pension system, healthcare and education; increasing Russian enterprises' technological capabilities; increasing the domestic demand for Russian goods, developing key market institutions to prevent corruption. The aim of these policies was to have a better macroeconomic environment after the crisis.

Investments in improving the transportation infrastructure, education, health and R&D will result in an improved environment with a forecast average annual GDP growth rate of more than 6% over the next decade. From

this point of view, the Russian economy should re-organize, become more efficient and more competitive.

For the 2009 year, the Development Centre (2009) forecast annual GDP growth rates of between -8% and +2%, largely depending on energy price assumptions, with the observed Russian GDP growth rate being -7,82%. Since 2004, Russian GDP growth has been caused mostly by booming private consumption and by expanding investments. The contributions of real net exports to GDP growth are very low. The GDP growth became negative because exports were increasing at less than 10% per year, whereas import volumes were growing by more than 20% per year. In 2008, the Russian economic growth was 5.24%, fixed investments increased by 13%, real money incomes by 8%, export revenues by 24%, imports by 22% and the current account surplus also increased.

However, GDP growth practically collapsed during the fourth quarter of 2008 and the first quarter of 2009 while inflation remained high and was forecast to possibly increase because of government interventions and the depreciation of the rouble.

Russia was deeply affected by the global crisis, especially after September 2008. The stock market fell by more than 70% from May 2008 to January 2009, one of the largest declines among emerging markets, though it later recovered. For the complete 2008 year, net capital outflows totaled USD 140 Billion after net capital inflows of USD 80 billion during 2007. Most blue chip companies such as Lukoil, Gazprom and Rosneft were affected hard, reflecting their investors' overreaction.

The medium and long term prospects for economic growth are not bad. There is no doubt that all Russian companies and Russian banks both large and small have been facing difficulties refinancing their outstanding foreign debts. Due to the lack of domestic, especially long term, credit financing, the country's restrictive monetary policies and easy credit abroad, external financing has been sought. Later, various stimulation packages have been adopted by the Russian government in order to improve the banking sector's liquidity and overall confidence in the economy. In 2009, Russian

export revenues were very low and investment was insufficient, so GDP growth was negative, and trade and current account surpluses fell.

Today, open market operations, standing facilities and reserve requirements are the most significant monetary policy instruments used by the Bank of Russia. Interest rates can be controlled by open market operations and standing facilities are supplied by the Bank of Russia. The nation's exchange rate policy is another policy instrument used in a managed floating regime when the desire it to decrease the effects of external shocks on the Russian macroeconomic environment.

Finally, during 1999-2009, economic reforms were adopted in order to provide Russia with some economic stability. Lower inflation rates and a significant decline in the number of people living below the poverty line led to economic growth throughout the period. One example was the Oil Stabilization Fund which enabled budgetary reforms during the crisis due to its devolution of decision making powers.

2.3. FDI Inflows in India

India has a large, unique and complex economy. In spite of the fact that it is essentially a poor country, in recent years India has attempted to obtain comparatively rapid economic growth. Such rapid economic growth has, in recent years, been achieved, making India one of the more attractive destinations for foreign investment in the developing world. It has a huge population of nearly 1.2 billion people, and is expected to pass China as the world's most populous nation in the near future. In addition, India has a predominantly young population with most commentators agreeing that a demographic dividend is more efficient in the world's younger populations. The increase in the proportion of the working population could make labor productivity more efficient by improving output performance and growth potentials. These improvements in output performance and growth potentials depend on India's ability to educate and then find productive employment for its young people.

Over the 1990s and especially in the earlier part of that decade, the Indian government considered a number of policies to liberalize the economy

both internally and externally: decreasing in direct state control of and regulation over economic activity; privatization of some state assets, with the majority remaining under state control; reduction in direct and indirect tax rates; reductions in productive public investments as well as specific social expenditures in order to decreasing the nation's fiscal deficits; trade liberalization focusing on average tariff rates; the withdrawal of export subsidies; financial liberalization including reductions in directed credit; moving to market-determined exchange rates and liberalizing current account transactions; capital account liberalization, including FDI; permitting non-residents to hold domestic financial assets; freedom for domestic resident to hold limited foreign assets.

In the 1990s, all of the various economic reform listed above have rapidly increased India's integration with the world economy. India's trade to GDP ratios jumped from 11% in 1995 to 24% in 2007.

Within the BRIC countries, India and Brazil can be seen as relatively more domestic demand-driven economies. China, followed by India, have been the fastest growing BRIC economies over the last decade. From 1978 and 2009, the Chinese economy grew at an average annual rate of 9.9 percent, higher than the world average for the period. Following the 1990s financial crisis, Russia and Brazil's growth performance also improved significantly.

India has sustained high, and increasing, growth over the past 20 years, with its real GDP growth averaging 8.3% from 1990 to 2010. The high growth phase which began in the 1980s is due to structural changes, but not as much as might be expected. The investment rate has also increased over that time, improving rapidly in this current decade to be now around 36%. Indian economic growth has been service-led, so the growth rate of services as part of the GDP has been much higher than the overall rate of GDP growth. During the 1993 to 2007 period there was an increase of more than 60% in services' contribution to GDP while the GDP's growth rate was also significantly increasing. This increment of services as part of GDP was not due to the public sector: it was in the private sector activity that services increased, from 29% at the beginning of the 1980s to more than 55% by

2007. This boom in services' share of India's GDP has occurred in an environment of much lower per capita income than that seen in developed countries when they experienced the same expansion.

Amongst BRIC countries, India has the highest savings and investment rates after China. From the perspective of GDP's contributions to net exports, the country's high saving and investment rates have fallen, so that this investment led growth was largely financed by domestic savings.

Most of investors comment that Asia will maintain its leading position for FDI, at least in the short term. India with its large market and a well-educated, qualified labor force will continue to attract FDI, especially in technology sectors.

On the other hand, its difficult business environment, uncertainties about the quality of its FDI, inadequate infrastructure, and its red tape and bureaucracy can be stated as the situations that prevent FDI in India.

India's monetary authorities, the Reserve Bank of India, implements monetary policies to maintaining price stability and ensuring an adequate credit flow for all of the country's productive sectors. Monetary policy in India has developed along with its increasing current and capital account liberalization. Liberalization of India's financial sectors has depended on the real sector's changing patterns of credit requirements, and on the rapidly changing world economic scenario. Both monetary policy goals - maintaining price stability and ensuring the availability of adequate credit to all productive sectors of the economy – have remained unchanged, despite their relative emphasis varying depending on circumstances.

While looking at the future prospects and short term challenges for India, we can see that India has been affected quite sharply by the global economic crisis, just like other countries. This crisis has resulted in rapidly declining exports, changed direction of private capital flows and deteriorating fiscal balances for both the central and state governments.

Dunning (1998) reported that the average rate of investment growth is good on average although its importance remains small. According to Dunning's analysis, it is not clear that whether this increase was caused by

the policy of liberalization alone, or if it resulted from an expansion of Global FDI activity. For the 1991-2004 period, India's significant GDP growth rate increase was at an average annual rate of 7%. More consideration is required to state whether, and to what extent, the sudden increase in FDI inflows during this period contributed to these growth rates.

To explain the relationship between FDI and growth is somewhat complex. On the whole, it seems that there is a strong relationship between FDI and growth. However, in the literature, the relationship has been demonstrated as highly heterogeneous across different countries. According to the 2003 World Investment Report, the linkages between growth and FDI inflows, also run in the opposite direction: quickly-growing economies attract more FDI, because of their now larger markets and increased investment profitability. As in the past, enhanced economic growth has caused many countries to attract greater FDI.

Most countries with high economic growth rates saw a sudden increase in FDI inflows during 2004.

2.4. FDI Inflow in China

Given China's global integration and foreign capital inflows, its rapid and stable economic growth could be seen as "best practice" for other developing countries. Before looking China's historical background and its FDI inflows, I just want to point out that many observers state that China wishes to move from "made in China" to "innovated in China". Given such a change, the dependence of the country on foreign technology would be reduced. China's population rate, its relatively low labor costs low wages rates provided it with a significant competitive advantage following its economic structural reforms and trade liberalization begun in the late 1970s.

China's Foreign Direct Investments began in 1979. Since then, recent years' investments have been controlled by the country's legal regimes, while being progressively liberalized by important regulations and laws. Since 1993, its huge FDI inflows have made China the largest FDI recipient among

all developing countries and the second largest recipient in the world after the United States.⁵⁶

Most studies in the literature, by focusing on human capital state that, generally, FDI inflows have had positive effects on economic growth in China. (Chen, 1995; Zhang, 2001). China's overall market-oriented economic reforms and its strong economic growth made it easy to integrate with the world's economy, giving foreign investors great confidence to invest even more.

Some significant policies have been easily adopted by a China integrated into the world economy: the transition from a planned to a market economy; FDI inflows and its effects on capital formation; labor force training; the development of its industrial structure; technology transfer and associated spillovers; a focus on international trade. Some economic forecast indicate that China could overtake the United States as the world's largest economy within a few years. China has succeeded in becoming a long-term rapidly growing economy. The reason behind this success is the rapidity with which it implemented its comprehensive economic reforms. The Chinese economy was rebalanced by generating consumer demand rather than by its exporting and fixed investment. This consumer demand was viewed as an engine of economic growth, productivity increases and innovation.

Strong economic growth in the Chinese economy, its huge population and the nation's increasing purchasing power parity has made the country the most preferred destination for investments. Moreover, China has a relatively attractive and strategic geographical position for access to other Asian countries and to America. This is also an advantage for re-export of goods produced in the investor's home country or a third country.

In 2008, export sector of China's economy was especially affected by the global economic crisis: China's real GDP growth declined from 14.2% in 2007 to 9.6% in 2008, and to 9.2% in 2009. To improve the country's

⁵⁶ Xinzhong, Li; Foreign Direct Investment Inflows in China: Determinants at Location; Institute of Quantitative & Technical Economics Chinese Academy of Social Sciences, Beijing P.R. China, June 2005.

economic environment, the government implemented a large economic stimulus package and provided an expansionist monetary policy. These policies implemented increased both domestic investment and domestic consumption, preventing any huge economic slowdown in China.

China's rapid economic growth depends on two core factors: large-scale capital investment (financed by large domestic savings and foreign investment) and rapid productivity growth. Historically, China has had a high savings rate compared to other developing countries. The quickly implemented economic reforms, and the country's trade and investment liberalization have helped change China into a major trading power, and partner. In 2009, China became the world's largest merchandise exporter and the second-largest merchandise importer after the United States.

China's government focuses on FDI inflows to ensure that the country benefits as much as possible from its investments. This is because FDI is a tool that could help to promote the country's economic growth and development. The government also needs to find the right balance between seeking benefiting from foreign firms on the one hand, while not discouraging them from investing in China on the other. The government also wants to ensure the flow of investment capital to its central and western provinces, which so far have received only very limited amounts of FDI. Foreign investors are being encouraged to try to seek opportunities arising in other parts of China.

The 2008 global economic crisis impacted China's economy. China's exports, imports and FDI inflows were all declined. In addition, GDP growth decreased while unemployment increased. In reply, the Chinese government implemented an economic stimulus package and an expansionist monetary policy in order to increase bank lending and boost domestic consumption. By implementing these policies, the government hoped to avoid the effects of the sharp global decrease in demand for Chinese products at a time when several of the world's leading economies were reporting negative economic growth.

2.5. FDI Inflows in Turkey

Foreign Direct Investment has been seen to be an important stimulus to industrial growth in both developed and developing countries. Most studies state that FDI has a significant impact on growth via technology spillovers, its support for human capital formation, and its creation of a more competitive business environment for international trade.

Investors' decisions as to where to invest depends on a range of criteria. First of all investors prefer countries with a well-functioning market economy and minimal bureaucratic requirements. Until the 2000's, Turkey was one of the lowest recipients of FDI among all developing countries. The total Foreign Direct Investment inflows for the 1990s was about USD \$685 million. Both economic and non-economic factors were responsible for these low levels of FDI entering Turkey (Erdilek, 2003 and Balasubramanyam, 1996). However, in 2006, Turkey had risen to become the fifth largest recipient of FDI amongst the emerging market countries. The adoption of an import substitution developmental strategy until the early 1980s caused high transaction costs for foreign investor entry, a high inflation rate, economic instability, lack of transactional transparency, the inability to protect property rights and an insufficient legal structure. At the same time, chronic political instability and internal conflicts are non-economic factors which, until the 1980's, impacted on the economy.

In 1989, Turkey liberalized its capital account in order to attract foreign investors. By the year 2000, significant foreign capital inflows have been experienced by Turkey in the forms of both FDI and portfolio capital. When comparing BRIC countries, Turkey has low levels of FDI inflows which has caused Turkey's poor past performance. (Moran, 2005). Economic and political uncertainties in the 1990s and early 2000s have resulted in a failure to attract FDI to the country. During this period, Turkey was faced with two major crises, in 1994 and 2001. In addition, the domestic political uncertainty caused that Turkey to be easily affected by external shocks, such as the Russian crisis of 1998.

In the 2001 crisis, Turkey's growth at that time depended on foreign borrowing, and the nation's huge current account deficit caused an appreciation of its real exchange rate. Turkey is like Brazil, a finance-constrained economy. Thus, its real interest rates have remained quite high, at double digit levels, at least until the crisis⁵⁷ (Kannan, 2008).

The high level of borrowing has, obviously, had an increasing effect on domestic investment and has restrained the adverse effects of the country's high interest rates.

When aggregate investment remains low, the utilization of foreign savings are required in order to support the economy. However, looking at unemployment, we can see that Turkey needs some other growth strategy if it is to improve its employment rate. Turkey's unemployment rate in 1990s jumped from 8% to 10% during the 2001 crisis. This is both an economic and a social problem. If Turkey's growth model could be relied on then its foreign savings and large current account deficits would generate respectable growth, but this causes natural problems. For instance, an increase in domestic investment would then increase external deficits which are perceived as unsustainable and dangerous.

In developing countries, growth is encouraged by structural change. It depends on the movement of resources from low productivity activities to high productivity modern and generally tradable activities, such as manufacturing. It clear that institutional failures and the lack of correct government policies could prevent such a transformation. That's why growth should not be perceived as an automatic process.

Developing countries are finance restricted but require foreign capital to grow. However, foreign capital could be at risk if the developing country does not support appropriate macroeconomic policies and regulations. Thus developing countries should become more cautious when opening up to

⁵⁷ Kannan, Prakash, "Perspectives on High Real Interest Rates in Turkey," IMF Working Paper No. 08/251, October 2008.

external capital flows. The mechanism as described explains the core of the case for financial globalization⁵⁸ (Rodrik and Subramanian, 2009).

The most delicate part is that private sector saving and investment approach is improbably be converted if there is not a reliable change in the policy regime covering both the country's fiscal stance and its exchange rates.

⁵⁸ Rodrik, D., and Arvind S. "Why Did Financial Globalization Disappoint?" IMF Staff Papers, Volume 56, Number 1, March 2009, 112-138.

3. Comparative Analysis of FDI Inflows for the BRICs and Turkey

FDI inflows to BRIC countries can be maintained by the BRIC's extensive and rapidly developing domestic markets, their liberalized industries and their vast natural resources. All of these have brought the changes in global production to favor the BRICs, placing these countries well to overcome the global economic recession. This means that investors can assume that the countries will continue growing despite the economic crisis they underwent.

The macroeconomic parameters and developmental features vary across the BRIC countries depending on each of their paths to sustainable growth. For example, in Brazil the stabilization of the macroeconomic environment is the key factor for successful reforms and sustainable growth. The challenges to the Brazilian economy are of different types: Brazil's tradable goods sector is small when compared to other developing countries such as China; its saving and investment rates must increase, as in other BRIC economies such as China and India; Brazil's public sector management needs to improve; long-term financing structures need to improve in both the public and private sector.

For Russia the major challenges are increasing the implementation of structural reforms, especially in inefficient natural monopolies, and improving the overall investment climate.

In the case of India: extending the scope of the growth process; increasing physical infrastructure quality; enhancing the agriculture sector; making public services such as education and health available to a major proportion of the population.

Likewise for China, policy changes are required to respond to both domestic and external challenges. If the country's rapid and stable economic growth is to be sustained, both domestic demand and exports must be addressed in a more balanced way. Financial sector reforms are needed to

deal with China's large private savings. The restructuring of the economy has to be promoted while increases in education, healthcare, and pension social spending are required to increase consumption.

Some of the important characteristics could be defined as of FDI inflows to BRIC countries, the big jump in FDI inflows to BRIC countries are recorded as growing from 2003 to 2008; with \$77 billion to 281 billion which China and Russian Federation have the big share of growth.

When compare other countries, FDI inflows to BRIC countries have remained relatively robust in response to the crisis. To BRIC countries the inflows declined 30% in 2009. The decline in Developed countries could be 40% over the same period. In addition, the BRIC countries have much more rapidly re-attained their former peak levels.

Brazil is accepted as a rapidly growing economy with its large and increasing agriculture, mining manufacturing and service sectors. It is regarded as the best South American country from the economic performance point of view, and has been maintaining its strong position in the world's economy.

Looking at Russia, this is a commodity-driven economy where most foreign currency comes from fuel and energy. India has a distributed economy composed of farming, agriculture, industries and a wealth of services. Services are regarded as the leading force of growth in India, representing more than 50% of the country's GDP and employing approximately 30% of its labor force. Its average growth values have been round 7%, and poverty has seen major decreases. China has moved from a centrally planned economy to proto-capitalist and is now even more open to international trade. Export growth has been its principal contributor to the economy's significant economic growth.

3.1. Methodology

For the 1990-2010 period, data was collected for the BRIC countries and Turkey in order to determine the impact of FDI inflows on imports, exports, unemployment and GDP growth. Panel Data was used for all of the variables as defined above. Most studies in the literature (Sridharan & Vijayakumar, 2009) report that these variables also have a causitive relationships with each other. The inter-variable causality may lead to problems with the endogeneity. Generally, the Panel Simultaneously Equation system is reported, in the literature, to resolve the endogeneity issue.

The Three Stage Least Squares (3SLS) method is a Pooled Method used by econometric models to solve the endogeneity issue. 3SLS has been chosen because of the existence of the causal relationships between the variables, with Ordinary Least Squares (OLS) no longer being used. To eliminate the country effect when using the 3SLS method, the fixed effect method is utilized in order to individually accommodate for each country's country effect.

The parameter estimations obtained from the multivariate (pooled) regression are presented in the graph below.

Table 1. The Expected Signs of Coefficients

Dependent Variables	Independent Variables						
	Exchange Rate	Inflation	Gfef	Gdp	Export	Import	Ifdi
Expected effect on unemployment	(-)	(+)	(+)	(+)	(+)	(+)	(-)
Expected effect on Gross Domestic Product	Exchange Rate	Inflation	Gfef	Unemployment	Export	Import	Ifdi
	(-)	(-)	(+)	(-)	(+)	(+)	(+)
Expected effect on Export	Exchange Rate	Inflation	Gfef	Unemployment	Gdp	Import	Ifdi
	(-)	(-)	(+)	(-)	(+)	(+)	(+)
Expected effect on Import	Exchange Rate	Inflation	Gfef	Unemployment	Gdp	Export	Ifdi
	(-)	(-)	(+)	(-)	(+)	(+)	(+)

This study aims to examine the contribution of FDI inflows to BRIC countries and to Turkey, based on the question: Are these contributions real or not? The macroeconomic variables we are considering have been identified as the drivers of FDI inflows: Gross Domestic Product (GDP); Exchange Rates; Inflation; Imports; Exports; Unemployment; Gross Fixed Capital Formation (GFCF). This research is undertaken in order to provide a better understanding of FDI inflows to BRIC countries and to Turkey and, more specifically, to define the growth roles of imports, exports and the unemployment rate. According to this explanation, the relevant equations are:

$$Export_{it} = \alpha + Import_{it} + Ifdi_{it} + Exrate_{it} + Gfcf_{it} + Inf_{it} + Unemp_{it} + Gdp_{it} + \varepsilon_{1it}$$

$$Import_{it} = \beta + Export_{it} + Ifdi_{it} + Exrate_{it} + Gfcf_{it} + Inf_{it} + Unemp_{it} + Gdp_{it} + \varepsilon_{2it}$$

$$Gdp_{it} = \gamma + Export_{it} + Ifdi_{it} + Exrate_{it} + Gfcf_{it} + Inf_{it} + Unemp_{it} + Import_{it} + \varepsilon_{3it}$$

$$Unemp_{it} = \theta + Export_{it} + Ifdi_{it} + Exrate_{it} + Gfcf_{it} + Inf_{it} + Import_{it} + Gdp_{it} + \varepsilon_{4it}$$

First of all, the relationship between the variables should be defined here. The Correlation Matrix of Variables is used in the literature in order to define the direction of the variables.

	Export	ifdi	Exrate	Inf	gdp	import	unemp	gfcf
Export	1,0000							
Ifdi	0,9464	1,0000						
Exrate	0,2580	0,3295	1,0000					
Inf	-0,1214	-0,1449	0,1688	1,0000				
Gdp	0,9529	0,9299	0,3866	-0,1071	1,0000			
Import	0,9909	0,9400	0,2728	-0,1310	0,9642	1,0000		
Unemp	-0,2571	0,2839	-0,1505	-0,0698	-0,2822	-0,2719	1,0000	
Gfcf	0,9589	0,9086	0,2740	-0,0954	0,9726	0,9711	-0,3236	1,0000

A correlation measures the strength of the linear relationship between two variables. In this Correlation Matrix of Variables, the variables highly correlated to Exports are IFDI, GDP, Import and GFCF. Based on their correlation coefficients,

the Correlation Matrix also gives an idea about the direction of the relationship between two variables.

At this stage of the thesis we employ the Panel Unit Root Test (Levin Lin Chu) (see Appendix A) to examine whether the variables are stationary or not. This test is very important because it provides evidence that there is no trend among the time series. The Levin Lin Chu test implies the following hypotheses:

H_0 = Each time series contains a unit root (non stationary).

H_1 = Each time series is stationary.

The test's results as presented on Appendix A that the export, import, GFCF and GDP variables are not stationary. Because of this, the first-order differences of these variables are taken prior to the econometric estimation. On the other hand, the variables inf, ifdi and exrate reject the null hypothesis that each time series has a unit root, meaning that these variables are all stationary.

Multivariate regression						
Equation	OBS	PARMS	RMSE	R-sq	F-Stat	P
Export	105	7	3,87E+10	0,9854	1354,38	0
Import	105	7	2,89E+10	0,9879	1731,41	0
Unemp	105	2	2,643804	0,2037	1,12	0,3287
Gdp	105	6	1,69E+11	0,97	1018,7	0

		Coef.	Std.Err.	T	P> t	[95%	Conf.
Export							
	Ifdi	1,575956	0,3510986	4,49	0	0,885662	2,26625
	Exrate	-2,67E+08	1,06E+08	-2,51	0,012	-4,76E+08	-5,79E+07
	Inf	1,61E+07	9633854	1,67	0,095	-2837999	3,50E+07
	Gdp	-0,0141172	0,0236582	-0,6	0,551	-0,0606315	0,0323971
	Import	1,071916	0,0813638	13,17	0	0,9119473	1,231885
	Unemp	1,44E+09	1,04E+09	1,39	0,167	-6,02E+08	3,48E+09
	Gfcf	-0,0026555	0,0538953	-0,05	0,961	-0,1086188	0,1033079
	_cons	0	(omitted)				

In this Multivariate Regression, a no "country effect" Pooled Regression, when examining each explanatory variable in the equation with **Export** as the dependent variable, the equation's R^2 is 0.98, demonstrating that the explanatory variables are

sufficient to explain the dependent variable. In this equation, the Foreign Direct Inflow, Exchange Rate and Import variables are statistically significant. The other explanatory variables - Inflation, GDP, Unemployment and Gross Fixed Capital Formation (GFCF) - have no statistically significant effect on the dependent variable, Export.

		Coef.	Std.Err.	T	P> t	[95%	Conf.
Import							
	Ifdi	-0,1210407	0,286974	-0,42	0,673	-0,6852594	0,4431781
	Exrate	7,11E+07	8,15E+07	0,87	0,383	-8,90E+07	2,31E+08
	Inf	-9727767	7209507	-1,35	0,178	-2,39E+07	4446823
	Gdp	0,0239382	0,0174831	1,37	0,172	-0,0104352	0,0583116
	Export	0,5976645	0,0452421	13,21	0	0,5087142	0,6866148
	Unemp	6,56E+08	7,77E+08	0,84	0,399	-8,72E+08	2,18E+09
	Gfcf	0,1228753	0,0381648	3,22	0,001	0,0478396	0,1979109
	cons	0	(omitted)				

In its modeling of the **Import** variable, the equation's R^2 value is again 0.98, indicating that this model fits well. While Export and Gross Fixed Capital Formation (GFCF) are statistically significant, Inflation, GDP, Unemployment and the Exchange Rate are not statistically significant in their explanation of the behavior of the **Import** variable.

Unemp		Coef.	Std.Err.	T	P> t	[95%	Conf.
	Import	-7,03E-13	9,33E-12	-0,08	0,94	-1,91E-11	1,76E-11
	Export	9,64E-12	6,88E-12	1,4	0,162	-3,89E-12	2,32E-11
	Exrate	-0,0078261	0,0089409	-0,88	0,382	-0,0254048	0,0097526
	Inf	-0,0006446	0,0006668	-0,97	0,334	-0,0019556	0,0006664
	Gdp	3,10E-12	1,60E-12	1,94	0,053	-4,14E-14	6,24E-12
	Gfcf	-1,13E-11	3,52E-12	-3,2	0,001	-1,82E-11	-4,34E-12
	Ifdi	-5,33E-11	2,59E-11	-2,06	0,04	-1,04E-10	-2,38E-12
	cons	6,891866	0,6983484	9,87	0	5,518845	8,264887

Although the two equations mentioned above have a high R^2 values, the regression modeling the **Unemployment** variable has a lower R^2 value of 0.20. This leads one to question whether the explanatory variables are inadequate to model the

Unemployment level. In the **Unemployment** regression, the Export, Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF), Foreign Direct Investment Inflows (IFDI) independent variables were statistically significant. In addition, the GFCF variable was found to be the most statistically significant independent variable influencing unemployment in this regression equation.

		Coef.	Std.Err.	T	P> t	[95%	Conf.
Gdp							
	Import	0,920657	0,5705593	1,61	0,107	-0,201118	2,042432
	Export	-0,1440895	0,4285844	-0,34	0,737	-0,9867279	0,6985489
	Ifdi	3,459002	1,497728	2,31	0,021	0,5143242	6,40368
	Exrate	3,19E+09	2,53E+08	12,6	0	2,69E+09	3,69E+09
	Inf	-4,06E+07	4,14E+07	-0,98	0,328	-1,22E+08	4,08E+07
	Unemp	0	(omitted)				
	Gfcf	1,420966	0,1630278	8,72	0	1,100438	1,741495
	cons	0	(omitted)				

Gross Domestic Products (GDP). Similar to the export and import regression equations, the regression of the GDP dependent variable has a high R^2 of 0.97 which indicates that this equation has sufficient explanatory power to model the behavior of GDP. According to these regression results, Foreign Direct Investment Inflows (IFDI), Exchange Rates and GFCF each have statistically significant effects on GDP. Since the 3SLS method has omitted the unemployment variable from the GDP regression equation, we are not able to conclude whether this unemployment variable is significant or not. This could be due to the existence of an autocorrelation issue with the unemployment variable.

We can realize something here because the significance of unemployment parameter cannot be defined. In the 3SLS Estimation Method, when there is high autocorrelation between variables, this leads us to omit a relationship, such as, in this case, the relationship between GDP and Unemployment.

When the fixed effect method is used to examine each individual country effect, the variable α_i represents all of the unobserved, time-constant factors that affect y_{it} in the equation. The fact that α_i has no t subscript tells us that it does not change over time. As is common in applied work, α_i is referred to as a “fixed

effect”, which helps us to remember that is fixed over time. When we examine the outcomes of these two methods, the most striking result that emerges is that the parameter estimations derived from both are not same. This could be linked to the panel data structure of the estimation.

Hausman test is also performed on Panel data to determine whether to choose Random effects or Fixed effects for this thesis. A Breusch and Pagan Lagrangian multiplier test rejects the null hypothesis of no country-specific variance and a Hausman test confirms that estimating the model with fixed effects is preferable to random effects. (See Appendix A for the test results.)

When we consider the country effect for all of the equations for which we have estimated a result, we find the following:

Fixed-effects	(within)	Number of obs=105		
Group	variable:	Number of groups=5		
R-sq:	Within	0,9863	Obs per group:min=21	
	Between	0,9755	Avg	21
	Overall	0,9819	Max	21
	F(7,93)	953,01		
corr(u_i,Xb)		-0,2316	Prob>F=0	

$$Export_{it} = \alpha + Import_{it} + Ifdi_{it} + Exrate_{it} + Gfcf_{it} + Inf_{it} + Unemp_{it} + Gdp_{it} + \varepsilon_{1it}$$

Export	Coef.	Std.Err.	T		P> t	95%Conf.Int.
Ifdi	1,837101	0,3502725	5,24	0	1,141529	2,532673
Exrate	-3,51E+07	1,22E+08	-0,29	0,774	-2,78E+08	2,07E+08
Inf	6697728	1,00E+07	0,67	0,507	-1,33E+07	2,67E+07
Gdp	-0,0459397	0,0268397	-1,71	0,09	-0,099238	0,0073585
Import	0,9627253	0,0827775	11,63	0	0,7983456	1,127105
Unemp	-2,75E+09	2,20E+09	-1,25	0,216	-7,13E+09	1,63E+09
Gfcf	0,1168538	0,0551691	2,12	0,037	0,0072989	0,2264086
cons	1,84E+10	1,64E+10	1,13	0,263	-1,40E+10	5,09E+10
sigma_u	3,32E+10					
sigma_e	3,16E+10					
Rho	0,5242504	(fraction	of variance due to u_i)			

In the equation with **Export** as the dependent variable, IFDI, GDP, Import and GFCF are statistically significant. These indicates that Foreign Direct Inflows, GDP, imports and Gross Fixed Capital Formation has an effect on the Exports for all of those countries included in the model.

Fixed-effects	(within)	Number of obs=105		
Group	variable:	Number of groups=5		
R-sq:	Within	0,9863	Obs per group:min=21	
	Between	0,9755	Avg	21
	Overall	0,9819	Max	21
	F(7,93)	1026,99		
corr(u_i,Xb)		0,0619	Prob>F=0	

$$Import_{it} = \beta + Export_{it} + Ifdi_{it} + Exrate_{it} + Gfcf_{it} + Inf_{it} + Unemp_{it} + Gdp_{it} + \varepsilon_{2it}$$

Import	Coef.	Std.Err.	T		P> t	95%Conf.Int.
Ifdi	-0.1033566	0,3186368	-0,32	0.746	-0.7361061	0,5293929
Exrate	-1,93E+07	9,77E+07	-0,2	0.844	-2.13E+08	1.75E+08
Inf	6478419	8026538	0,81	0.422	-9460695	2.24E+07
Gdp	0,0626824	0,0208045	3,01	0.003	0.0213687	0.103996
Export	0,615519	0,0529239	11,63	0	0.5104227	0.7206152
Unemp	3,05E+09	1.75E+09	1,74	0.085	-4.25E+08	6.52E+09
Gfcf	0,0233833	0,0450992	0,52	0.605	-0.0661748	0,1129414
cons	-2,10E+10	1,30E+10	-1,62	0,109	-4.68E+10	4.78E+09
sigma u	2,23E+10					
sigma e	2,53E+10					
Rho	0,4375532	(fraction	of variance due to u_i)			
F test all	u_i=0:	F(4,93)=8,21	Prob>F=0			

According to the dataset used for this econometric model, GDP and Export have a statistically significant impact on the Import variable. The regression shows us that Export is the most important variable affecting the Import variable.

Fixed-effects	(within)	Number of obs=105		
Group	variable:	Number of groups=5		
R-sq:	Within		Obs per group:min=21	
	Between		Avg	21
	Overall		Max	21
	F(7,93)	630,01		
corr(u_i,Xb)		-0,5055		

$$Gdp_{it} = \gamma + Export_{it} + Ifdi_{it} + Exrate_{it} + Gfcf_{it} + Inf_{it} + Unemp_{it} + Import_{it} + \varepsilon_{3it}$$

Gdp	Coef.	Std.Err.	T		P> t	95%Conf.Int.
Import	1,418728	0,4708814	3,01	0,003	0,4836509	2,353805
Export	-0,6647853	0,3883917	-1,71	0,09	-1,436054	0,1064835
Ifdi	4,397053	1,446611	3,04	0,003	1,524369	7,269736
Exrate	2,29E+09	3,99E+08	5,75	0	1,50E+09	3,09E+09
Inf	-1,52E+08	3,49E+07	-4,36	0	-2,22E+08	-8,29E+07
Unemp	-2,73E+10	7,97E+09	-3,43	0,001	-4,31E+10	-1,15E+10
Gfcf	1,569039	0,1403444	11,18	0	1,290343	1,847735
cons	2,34E+11	5,78E+10	4,05	0	1,19E+11	3,49E+11
sigma_u	2,02E+11					
sigma_e	1,20E+11					
Rho	0,7389975	(fraction	of variance due to u_i)			
F test all	u_i=0:	F(4,93)=22,51		Prob>F=0		

When we take GDP as the dependent variable, we can see that the Import, IFDI, Exchange rate, Inflation, Unemployment and Gross Fixed Capital Formation variables have statistically significant effects on GDP. According to these results, only Export is not statistically significant in the model.

Fixed-effects	(within)	Number of obs=105		
Group	variable:	Number of groups=5		
R-sq:	Within	0,2753	Obs per group:min=21	
	Between	0,5816	Avg	21
	Overall	0,0348	Max	21
	F(7,93)	5,05		
corr(u_i,Xb)		-0,5658		

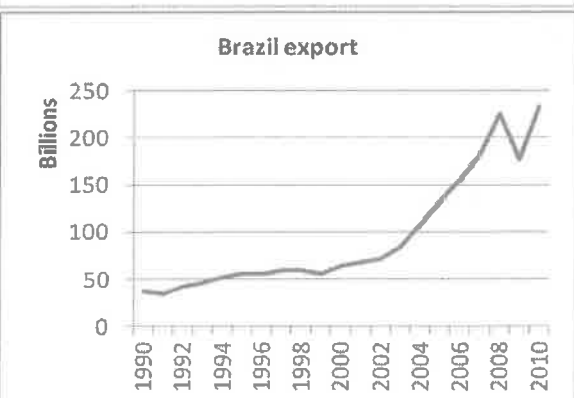
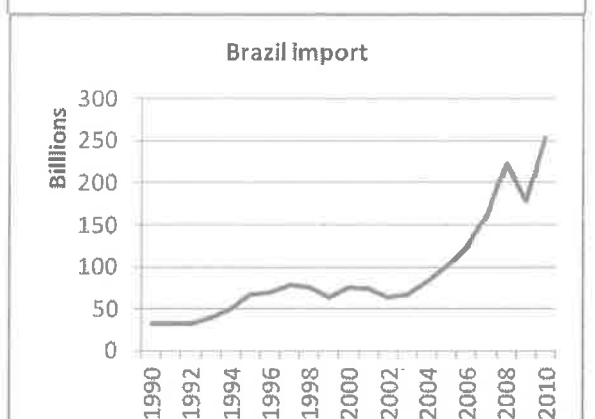
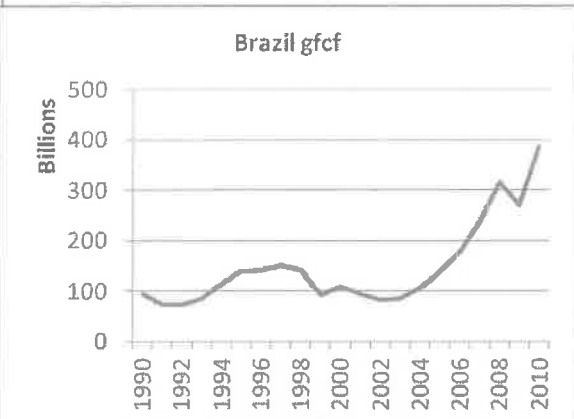
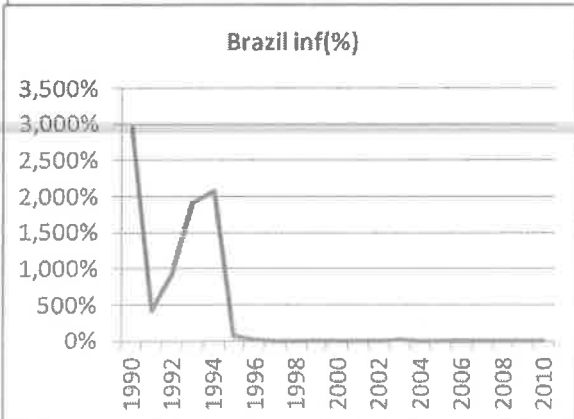
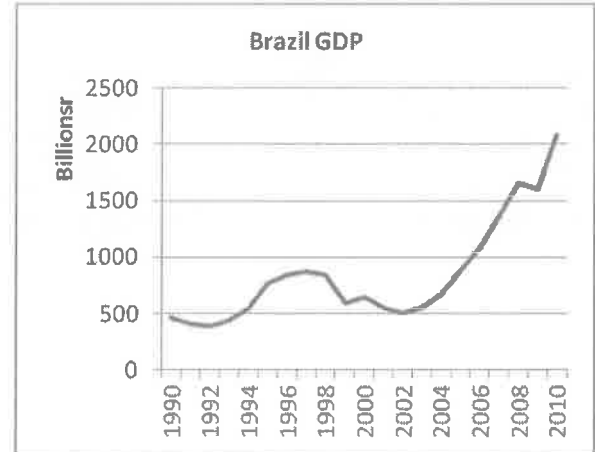
$$Unemp_{it} = \theta + Export_{it} + Ifdi_{it} + Exrate_{it} + Gfcf_{it} + Inf_{it} + Import_{it} + Gdp_{it} + \varepsilon_{4it}$$

Unemp	Coef.	Std.Err.	T		P> t	95%Conf.Int.
Import	1.04E-11	5.95E-12	1,74	0,085	-1,45E-12	2,22E-11
Export	-5,98E-12	4,80E-12	-1,25	0,216	-1,55E-11	3,55E-12
Exrate	0,0184231	0,0053702	3,43	0,001	0,0077588	0,0290873
Inf	-0,0020065	0,0004213	-4,76	0	-0,0028431	-0,0011698
Gdp	-4,11E-12	1,20E-12	-3,43	0,001	-6,49E-12	-1,73E-12
Gfcf	6,59E-12	2,54E-12	2,59	0,011	1,54E-12	1,16E-11
Ifdi	1,32E-11	1,85E-11	0,71	0,479	-2,36E-11	5,00E-11
cons	6.068584	0,4406553	13,77	0	5,19353	6,943638
sigma u	3,2948422					
sigma e	1,4729705					
Rho	0,8334328	(fraction	of variance due to u_i)			
F test all	u_i=0:	F(4,93)=54,87		Prob>F=0		

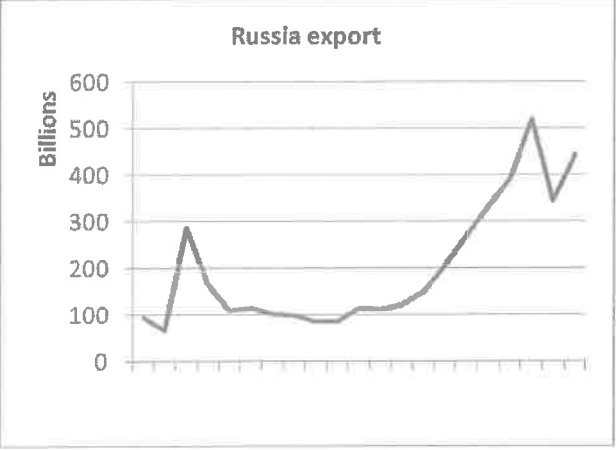
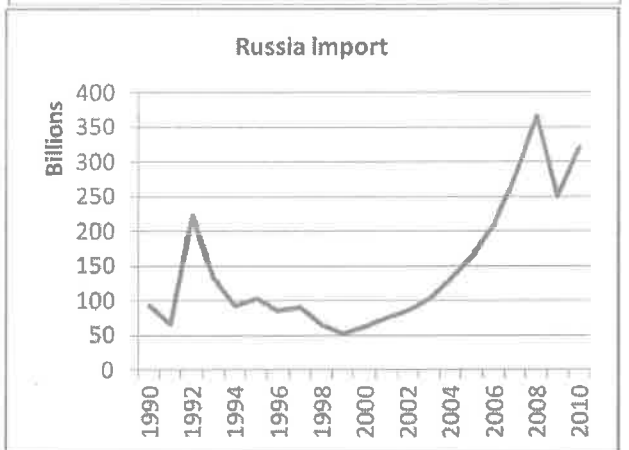
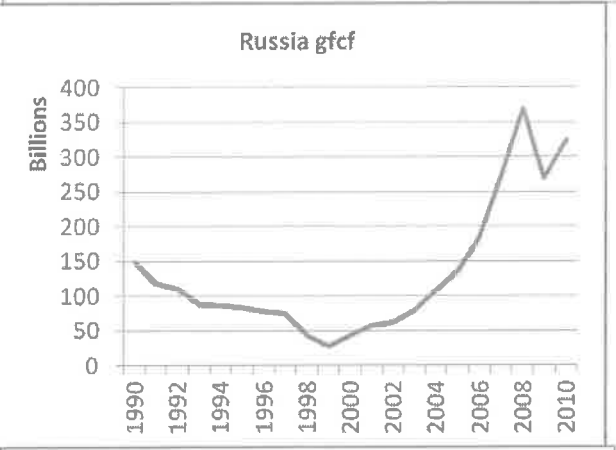
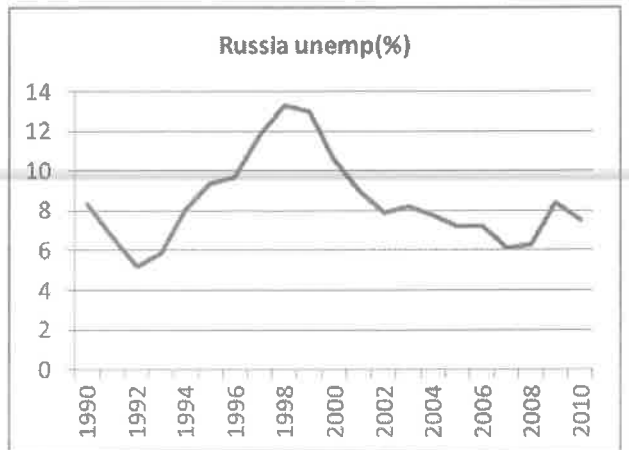
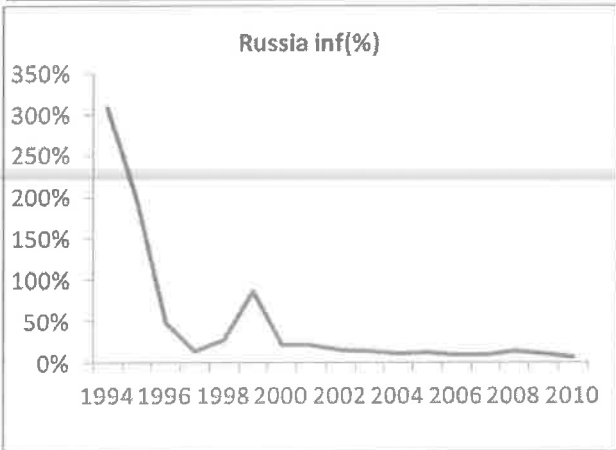
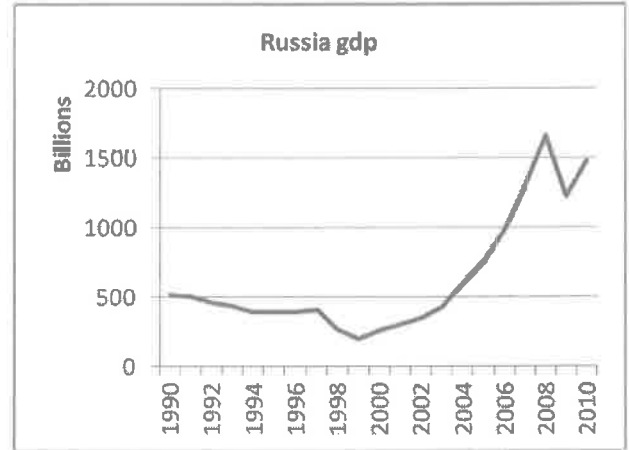
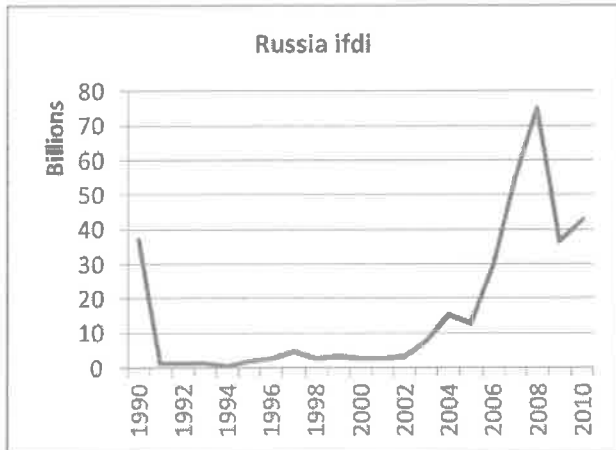
Taking Unemployment as the dependent variable, then Exchange rate, Inflation, GDP, and GFCF are statistically significant. These significant explanatory variables can be said to have an impact on Unemployment.

3.2. Data Source

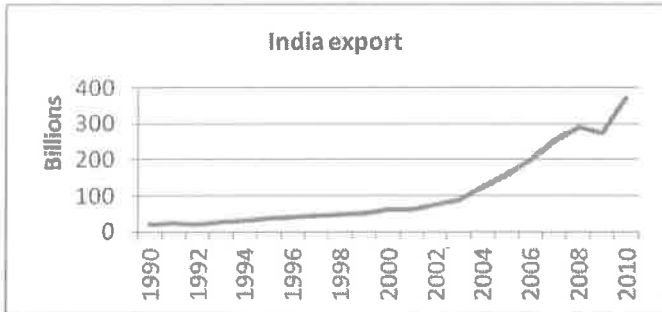
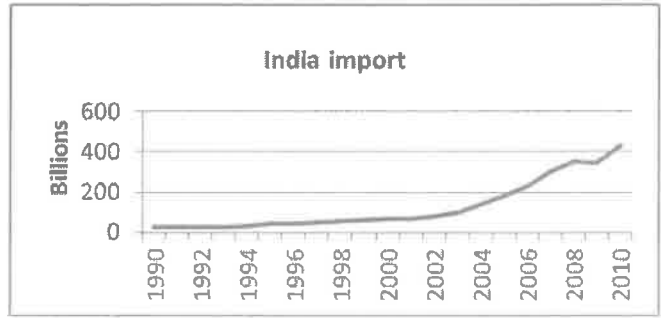
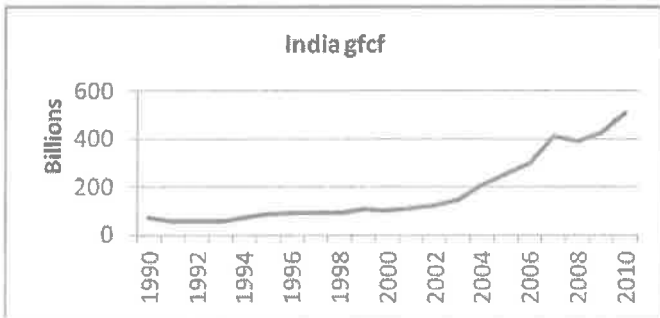
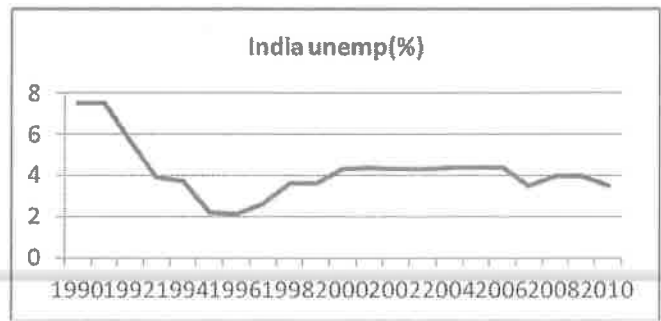
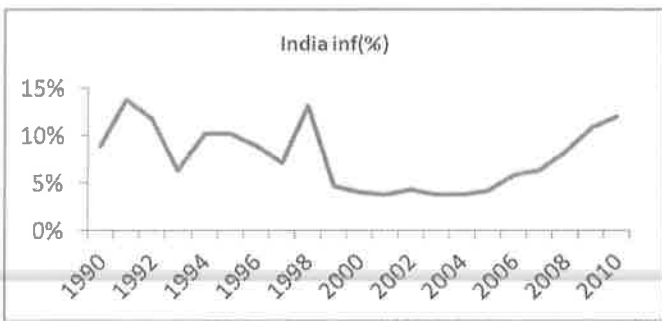
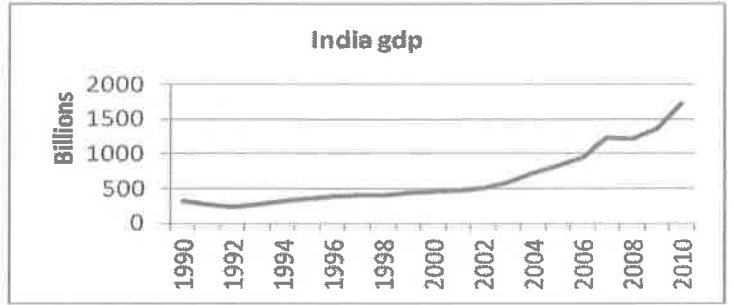
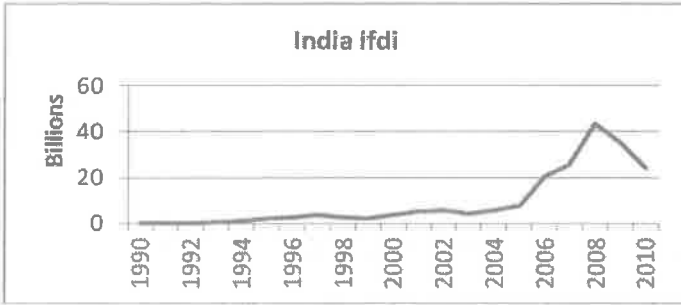
Graph 1: All Data for Brazil



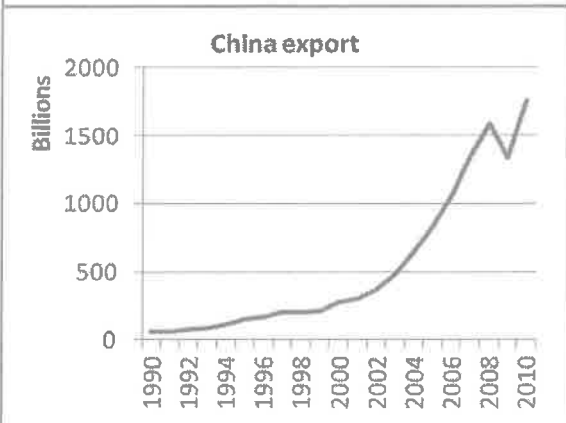
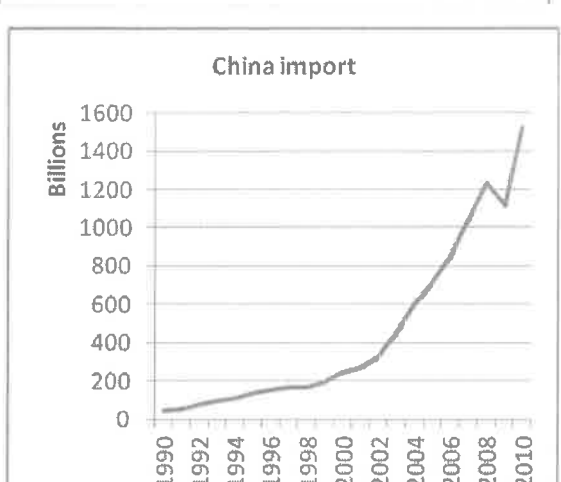
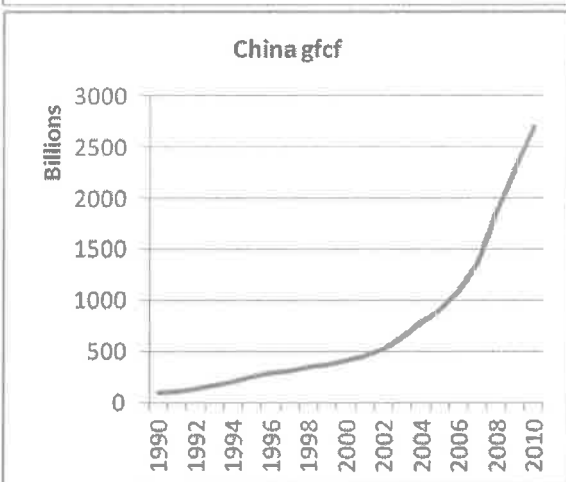
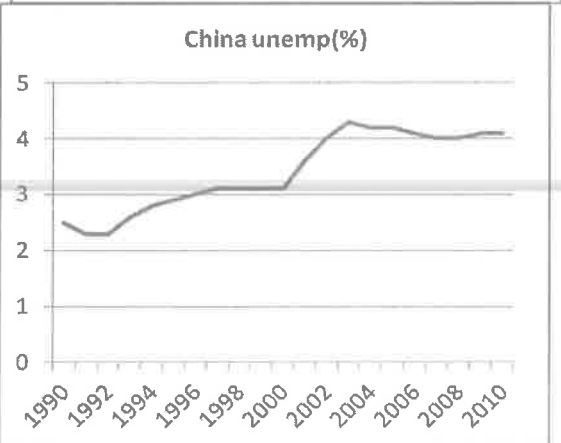
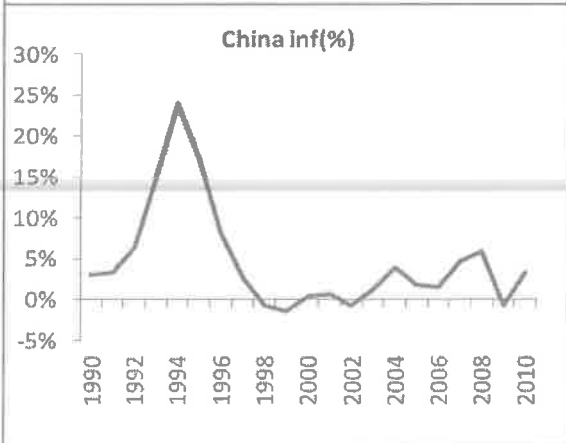
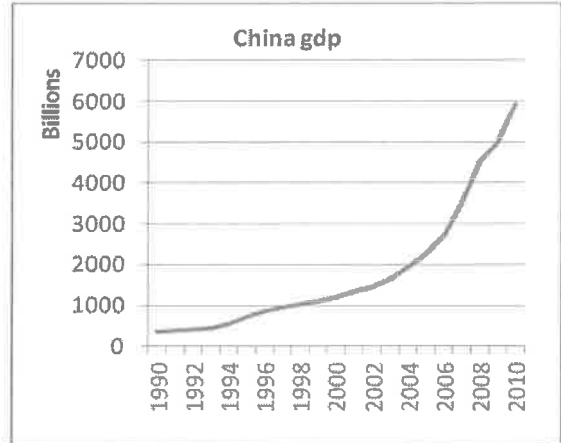
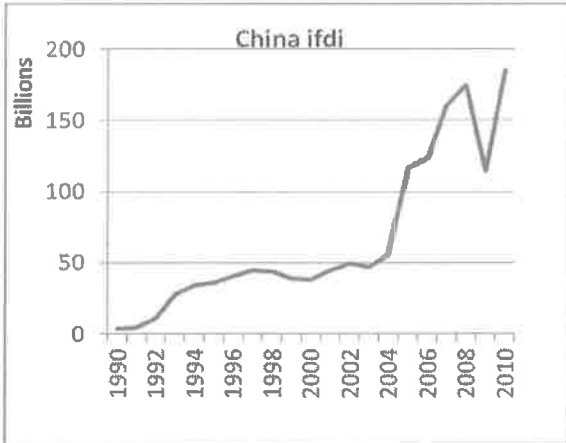
Graph 2: All Data for Russia



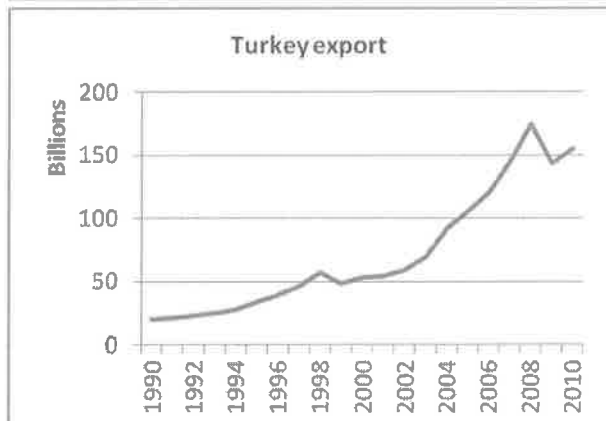
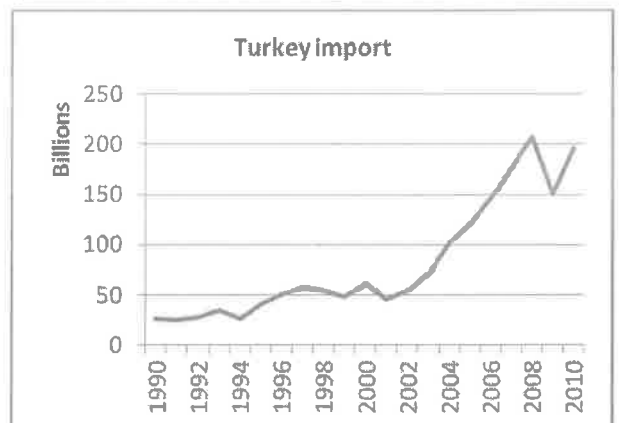
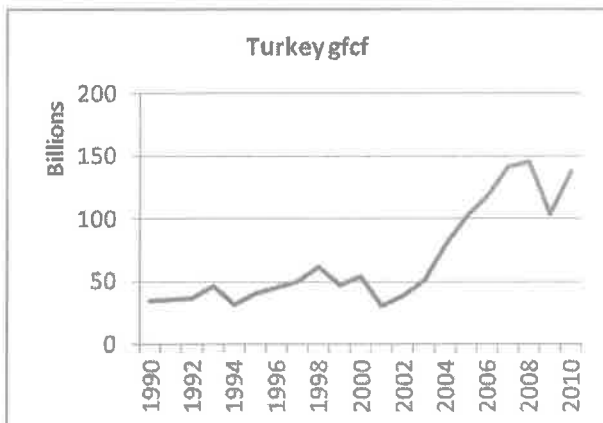
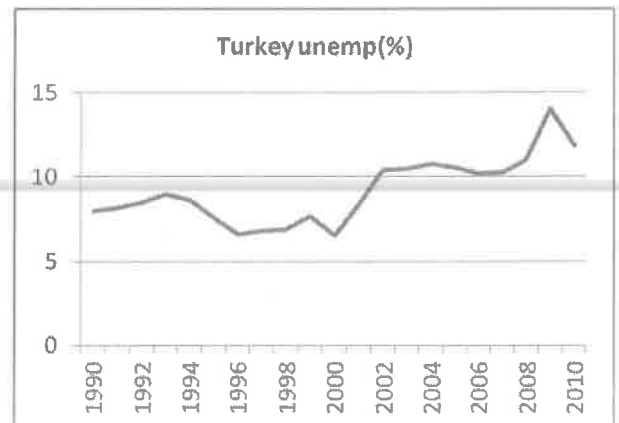
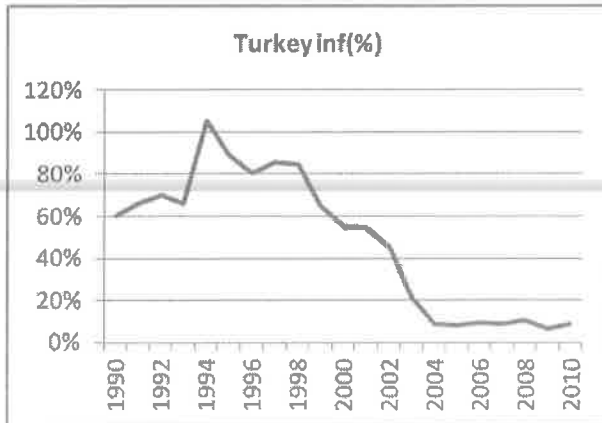
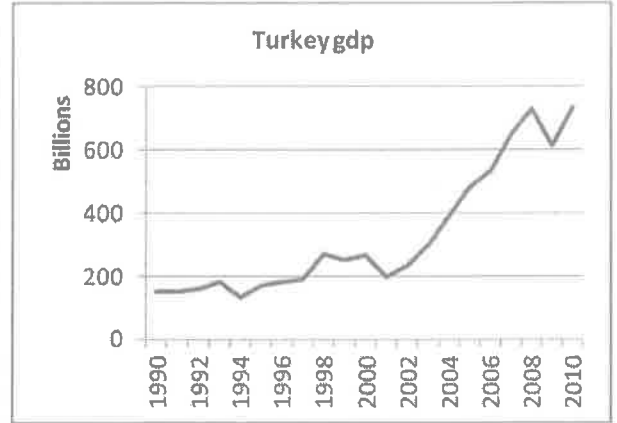
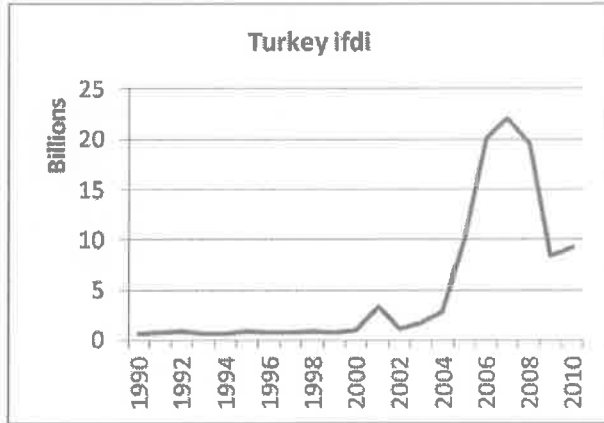
Graph. 3. All Data for India



Graph 4. All Data for China



Graph 5. All Data for Turkey



The data used in the paper comes from the World Bank dataset for BRIC countries and Turkey, 1990 – 2010.

Foreign Direct Investment, net Inflows (BoP, current US Dollars):

Foreign direct investments are defined as the net inflows of investment used to acquire a lasting management interest (10 percent or more of the voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital and short-term capital as shown in a balance of payments statement. This series shows foreign investors' net inflows (new investment inflows minus disinvestments) in the reporting economy.⁵⁹

Gross Domestic Product is used to define the growth of BRIC countries and Turkey, with all GDP values coming from the World Bank. According to the World Bank's definition of GDP, it is the sum of the gross value added by all resident producers in the economy, plus any product taxes, minus any subsidies not included in the value of the products.⁶⁰ The values are in US Dollars.

Inflation (Consumer Prices, annual %): Inflation, as measured by a country's consumer price index, reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services. That basket can be either fixed or changed at specified intervals, such as yearly. The Laspeyres formula is generally used.⁶¹

Inflation can be taken as a major deterrent factor affecting a host country's economic stability and its FDI inflows, because any form of instability would deter investors' perceptions about the future profitability of the country (Erramilli and D'Souza, 1995).⁶²

Gross fixed capital formation (formerly gross domestic fixed investment) includes land improvements (fences, ditches, drains, and so on), plant, machinery, equipment purchases, the construction of roads, railways,

⁵⁹ For FDI inflow See the details: <http://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD>

⁶⁰ For GDP values See the details: <http://data.worldbank.org/indicator/NY.GDP.MKTP.CD>

⁶¹ For Inflation See the details: <http://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?display=graph>

⁶² M. Krishna Erramilli, Derrick E. D'Souza, (1995) "Uncertainty and foreign direct investment: the role of moderators", *International Marketing Review*, Vol. 12 Iss: 3, pp.47 - 60

other transport systems, schools, offices, hospitals, private residential dwellings, commercial buildings and industrial buildings. Net acquisitions of valuables are also considered as capital formation according to the 1993 SNA. Data are in current U.S. dollars.⁶³

Gross Fixed Capital Formation is included in the study in order to define the impact of IFDI on Gross Fixed Capital Formation. Gross Fixed Capital Formation has a significant impact on a country's future growth path. At the same time, foreign capital in the form of FDI not only changes current GDP growth by boosting production and employment, but might also present opportunities for future growth potential via the its bringing of better technological know-how and management skills in the country.

Imports. Imports of goods and services represent the value of all goods and other market services received from the rest of the world. These include the value of all merchandise, freight, insurance, transport, travel, royalties and license fees. It also includes other services such as communication, construction, financial information, business, personal, and government services. Imports exclude the compensation of employees and investment income (formerly called "factor services") as well as transfer payments. Data are in current U.S. dollars.⁶⁴

Exports. Exports of goods and services represent the value of all goods and other market services provided to the rest of the world. These include the value of merchandise, freight, insurance, transport, travel, royalties and license fees. It also includes other services such as communication, construction, financial information, business, personal, and government services. Exports exclude the compensation of employees and investment income (formerly called "factor services") as well as transfer payments. Data are in current U.S. dollars.⁶⁵

⁶³ For Gross Fixed Capital Formation See the details:
<http://data.worldbank.org/indicator/NE.GDI.FTOT.CD>

⁶⁴ Imports of goods and services, See the details:
<http://data.worldbank.org/indicator/NE.IMP.GNFS.CD>

⁶⁵ Exports of goods and services, See the details:
<http://data.worldbank.org/indicator/NE.EXP.GNFS.CD>

Imports and Exports are both added to the model because of both of these are perceived as indicators of an economy's liberalization. These gives an idea about a country's relationship with the rest of the world. FDI inflows, especially, help to improve a country's economic growth, in particular when they promote manufactured goods exports from the host country.

Conclusion

Concluding Remarks and Research Findings

This study seeks to examine how FDI Inflows affect the economies of BRIC countries' and of Turkey. It achieves this by questioning whether, for these countries' macroeconomic environments, FDI inflows are real, or not.

Countries place importance on trade and capital inflows for many reasons. One reason especially is to establish an industrial policy that shifts production towards those sectors that provide positive externalities, to increase their revenue, to influence their terms of trade and to, also, fulfill the needs of special interests.

This thesis has tried to examine the impact that Foreign Direct Investment has on economic growth. Most studies in the literature state that Foreign Direct Investment inflows have a positive effect on economic growth.

Thus, in order to add to the existing literature, an econometric model has been employed that specifies the impact that Foreign Direct Investment Inflows have on growth in the BRIC economies and in Turkey. In the first stage of this analysis, a Unit Root test was applied to the dataset to find whether each contributory variable is stationary or not. Based on this test's results, as presented in the previous chapter, the variables Export, Import, GFCF and GDP are not stationary. Thus, the first-order differences of these variables are taken prior to this study's econometric estimation. The variables Inflation, IFDI and Exchange Rates were found to be stationary.

The 3SLS is chosen because of causality between variables; Ordinary Least Squares (OLS) is, generally, no longer used. As the 3SLS method ignores the country effect, a fixed effect method is used in order to take each country's effect individually into account. According to the results of the regression, Foreign Direct Investment Inflows were found to have a statistically significant effects on Exports and GDP Growth.

Finally, the above results can be explained in terms of important policies adopted by other developing countries in order to boost their

economy: economic liberalization encourages the flow of international capital and redirects factor endowments towards more efficient productive sectors; high levels of capital formation provide the finance required for industries to become more efficient; in principle, all explanations can be utilized as tools for promoting economic growth.

Also that achieves the same status with BRIC, investment both in the public and private sector should be focused by other developing countries.

A government can invest in public projects in order to create employment, resulting in an income for additional people. These peoples' purchasing power would then increase the demand for the goods and services produced by an economy. By increasing demand in an economy, production is encouraged and the overall level of economic activity starts to improve until the economy recovers from the depression.

Aside from macroeconomic policies, greater qualifications and specialization in one particular part of a country are important factors leading to accelerated economic growth. Developing countries especially should invest greatly in human capital formation. A skilled labor force requires high skilled workers, so it is important that investments in education are perceived as a priority by governments. This is the only way to improve the education quality of a labor force. Changes in technology and managerial skills can be easily adopted by a high skilled and qualified labor force.

When capital inflows are exogenous, their effects cannot be taken as clearly positive for developing countries. FDI inflows have a strong crowding-out effect on the domestic investment environment which reduces local investment decisions. Due this crowding out effect on domestic investment, capital account liberalization can make it possible to lose control over national investment rates when they are strongly influenced by international investors. However, this does not mean that developing countries cannot obtain great benefit from capital inflows. FDI inflows, especially, help to improve economic growth for a country, in particular when they promote manufactures goods' export from the host country.

While most of the studies in the literature focus on the important role that FDI plays in local factor markets, a role based on the relationship between FDI and host-country wages, also there is also an emerging literature on FDI's effects on local capital markets. One of the important reasons that developing countries' decision makers seek to attract foreign investment is the otherwise scarcity of capital for new investment. This is depends on the assumption that incoming foreign investors create extra (additional) capital when they make a new investment in a local market. However, this improvement in local financing from new foreign investors may have a crowding out effect on domestic firms.

Last, but not least, developing countries must properly manage their exchange rates. This is because improper exchange rates negatively affect a country's competitiveness in the world market, as well as negatively affecting its exports, production and growth.

References

- International Monetary Fund, International Financial Statistics. Catalog Sources World Development Indicators.
- Ahn, Y.S., Adji, S.S. and Willett, T.D. (1998) "The effect of inflation exchange rate policies on direct investment to developing countries". *International Economic Journal*. 12(1), 95-104.
- Aitken, B., G.H. Hanson and A.E. Harrison. 1997. "Spillovers, Foreign Investment and Export Behavior." *Journal of International Economics*, 43(1): 103-132.
- Alfaro, L., Chanda, A., Kalemli-Ozcan, S., Sayek, S. (2010), " Does foreign direct investment promote growth? Exploring the role of financial markets on linkages". *Journal of Development Economics* 91(2), 242-256.
- Asideu, E., "On the Determinants of Foreign Direct Investment to Developing Countries: Is Africa Different?, *World Development*, Vol. 30, No.1, 2002.
- Auty, R. M.. (1993). "*Sustaining Development in Mineral Economies: The Resource Curse Thesis*. London: Routledge.
- Balasubramanyam, V N & Salisu, M & Sapsford, D. 1996. "Foreign Direct Investment and Growth in EP and IS Countries," *Economic Journal, Royal Economic Society*, vol. 106(434), pages 92-105, January.
- Barrell, R. And Pain, N., 1996, "An Econometric Analysis of US Foreign Direct Investment", *Review of Economics and Statistics*, 78 (2), 200-07.
- Berneard, A. B., Jensen B., Redding S., Schott P., Firms in International Trade, *Journal of Economic Perspectives – Volume 21, Number 3 – Summer 2007- Pages 105-130*
- Bhagwati, J. N. (1978). "Anatomy and Consequences of Exchange Control Regimes", Vol. 1, *Studies in International Economic Relations*, 10 (New York: National Bureau of Economic Research).
- Blonigen, B., "Firm-Specific Assets and the Link Between Exchange Rates and Foreign Direct Investment." *The American Economic Review*, Vol. 87, No. 3. (Jun.1997), pp. 447-465

- Bloningen, B. A. (2005). A Review of the Empirical Literature on FDI Determinants, *Atlantic Economic Journal* 33 (4): 383-403.
- Borensztein, E., J. de Gregorio and J.-W. Lee (1998), "How does foreign direct investment affect economic growth?", *Journal of International Economics*, vol. 45, no. 1, pp. 115-135.
- Broda and Weinstein's (2006), "Globalization and the Gains from variety" *Quarterly Journal of Economics* (2006) 121 (2): 541-585
- Busse, M. & Hefeker, C., 2007. "Political risk, institutions and foreign direct investment," *European Journal of Political Economy*, Elsevier, vol. 23(2), pages 397-415, June.
- Campa, J., "Entry by foreign firms in the United States under exchange rate uncertainty" *Review of Economics and Statistics*, 75, 1993; 614-622.
- Carvalho, C. E.. As origens e a gênese do Plano Collor. *Nova Economia*. Vol.16 No.1. Belo Horizonte. January-April 2006. Retrieved on September 8, 2007.
- Chakrabarti, A. "The Determinants of Foreign Direct Investments: Sensitivity Analyses of Cross-Country Regressions" Volume 54, issue 1 pages 89-114, February, 2001.
- De Mello, L. "Foreign Direct Investment-led growth: evidence from time series and panel data", *Oxford Economic Papers* 51, (1999), 133-151
- De Mello, Jr., Luiz R. 1997." Foreign Direct Investment in Developing Countries and Growth: A Selective Survey". *Journal of Development Studies* 34, no.1 (October): 1-33.
- Dunning, J. H. (1973), "The Determinants of International Production" *Oxford Economic Papers*, New Series, Vol. 25, No. 3, pp. 289-336
- Dunning, John H., "The eclectic paradigm as an envelope for economic and business theories of MNE activity", *International Business Review* 9 (2000) 163-190.
- Egger, P and H. Winner, (2005), "Evidence on Corruption as an Incentive for Foreign Direct Investment. ", pp.932-952.

- Ekholm K, Forslid R, Markusen JR. 2004. Export-platform foreign direct investment. IIS Discussion Paper No. 50, Dublin: Institute for International Integration Studies.
- Frankel, J., and Romer D.. (1999). "Does trade cause growth?" *American Economic Review* 89(3):379-399
- Froot, K., and Stein J., "Exchange Rates and Foreign Direct Investment: An Imperfect Capital Markets Approach", *Quarterly Journal of Economics* (1991) 1191-1217.
- Goldberg, L. "Exchange Rates and Foreign Direct Investments" *Princeton Encyclopedia of the World Economy, Princeton University Press, 2006.*
- Görg, H.; Greenaway, D. "Foreign Direct Investment and intra-industry spillovers: a review of the literature", *Research paper / Leverhulme Centre for Research on Globalisation and Economic Policy*, No: 2001, 37
- Gray HP. 1998. International Trade and Foreign Direct Investment: The Interface. In *Globalization, Trade and Foreign Direct Investment*, J. H. Dunning (ed). Oxford: Elsevier; 19-27.
- Harrison A, Clare A. R, "Trade, Foreign Investment, and Industrial Policy for Developing Countries" NBER, *Handbook of Development Economics*, Volume 5, 2010, p. 4039 – 4214.
- Helpman E. 1984. A Simple Theory of International Trade with Multinational Corporations. *Journal of Political Economy* 92(3): 134 - 142.
- Horst T. 1972. The industrial composition of U.S. exports and subsidiary sales to the Canadian market. *American Economic Review*. 62(1/2): 37-45.
- Jeffrey A. Frankel and David R., "Does Trade Cause Growth?" *The American Economic Review* Vol. 89, No. 3 (Jun., 1999), pp. 379-399
- Kalinova B., Palerm A. And Thomsen S. (2010), "OECD's FDI Restrictiveness Index: 2010 Update", *OECD Working Papers on International Investment*, No. 2010/3, OECD Investment Division, www.oecd.org/daf/investment
- Kannan, P., "Perspectives on High Real Interest Rates in Turkey," *IMF Working Paper* No. 08/251, October 2008.

- Karbasi, A., E. Mahamadi, S. Ghofrani, (2005). "Impact of Foreign Direct Investment on Economic Growth." Paper presented at the 12th Economic Research Forum Conference, 19th–21st December, 2005, Egypt.
- Krishna, E., D'Souza D., (1995) "Uncertainty and foreign direct investment: the role of moderators", *International Marketing Review*, Vol. 12 Iss: 3, pp.47 – 60.
- Kyereboah-Coleman, A., Kwame F., (2008) "Effect of exchange-rate volatility on foreign direct investment in Sub-Saharan Africa: The case of Ghana", *Journal of Risk Finance*, The, Vol. 9 Iss: 1, pp.52 – 70
- Lipsey, R.E. (2000). "Inward FDI and Economic Growth in Developing Countries", *Transnational Corporations*, 9(1), 61-95.

APPENDIX A UNIT ROOT TEST RESULT

At this stage of the thesis we employ panel unit root test (Levin Lin Chu) to examine whether the variables are stationary or not. The test is of very significance since it provides evidence that there is no trend among the time series. Levin Lin Chu test suggest s the following hypotheses:

H_0 = Each time series contains a unit root (non stationary).

H_1 = Each time series is stationary.

According to the test results which are presented below show that the variables of export, import, gfcf and gdp are not stationary. Because of this, the first differences of these variables are taken prior to the econometric estimation. On the other hand the variables inf, ifdi and exrate rejects the null hypothesis of each time series has a unit root means that these ara all stationary.

Levin-Lin-Chu unit-root test for gdp

Ho: Panels contain unit roots	Number of panels =	5
Ha: Panels are stationary	Number of periods =	21
AR parameter: Common	Asymptotics: N/T -> 0	
Panel means: Included		
Time trend: Not included		

ADF regressions: 0,00 lags average (chosen by BIC)
LR variance: Bartlett kernel, 8,00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	8,5525	
Adjusted t*	11,5841	1,0000

Levin-Lin-Chu unit-root test for ifdi

Ho: Panels contain unit roots	Number of panels =	5
Ha: Panels are stationary	Number of periods =	21
AR parameter: Common	Asymptotics: N/T -> 0	
Panel means: Included		
Time trend: Not included		

ADF regressions: 0,40 lags average (chosen by BIC)
LR variance: Bartlett kernel, 8,00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	-2,3377	
Adjusted t*	-0,1191	0,4526

Levin-Lin-Chu unit-root test for inf

Ho: Panels contain unit roots Number of panels = 5
 Ha: Panels are stationary Number of periods = 21

 AR parameter: Common Asymptotics: N/T -> 0
 Panel means: Included
 Time trend: Not included

ADF regressions: 0,20 lags average (chosen by BIC)
 LR variance: Bartlett kernel, 8,00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	-4,5664	
Adjusted t*	-2,2122	0,0135

Levin-Lin-Chu unit-root test for exrate

Ho: Panels contain unit roots Number of panels = 5
 Ha: Panels are stationary Number of periods = 21

 AR parameter: Common Asymptotics: N/T -> 0
 Panel means: Included
 Time trend: Not included

ADF regressions: 0,20 lags average (chosen by BIC)
 LR variance: Bartlett kernel, 8,00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	-4,1522	
Adjusted t*	-2,5072	0,0061

Levin-Lin-Chu unit-root test for export

Ho: Panels contain unit roots Number of panels = 5
 Ha: Panels are stationary Number of periods = 21

 AR parameter: Common Asymptotics: N/T -> 0
 Panel means: Included
 Time trend: Not included

ADF regressions: 0,20 lags average (chosen by BIC)
 LR variance: Bartlett kernel, 8,00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	3,0875	
Adjusted t*	5,3776	1,0000

Levin-Lin-Chu unit-root test for import

Ho: Panels contain unit roots Number of panels = 5
Ha: Panels are stationary Number of periods = 21

AR parameter: Common Asymptotics: N/T -> 0
Panel means: Included
Time trend: Not included

ADF regressions: 0,40 lags average (chosen by BIC)

LR variance: Bartlett kernel, 8,00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	4,8953	
Adjusted t*	7,5749	1,0000

Levin-Lin-Chu unit-root test for gfcf

Ho: Panels contain unit roots Number of panels = 5
Ha: Panels are stationary Number of periods = 21

AR parameter: Common Asymptotics: N/T -> 0
Panel means: Included
Time trend: Not included

ADF regressions: 0,00 lags average (chosen by BIC)

LR variance: Bartlett kernel, 8,00 lags average (chosen by LLC)

	Statistic	p-value
Unadjusted t	10,7842	
Adjusted t*	13,8882	1,0000

Multivariate regression
results with STATA

Equation	Obs	Parms	RMSE	R-sq	F-Stat	P
Export	105	7	3,87E+10	0,9854	1354,38	0
Import	105	7	2,89E+10	0,9879	1731,41	0
Unemp	105	2	2,643804	0,2037	1,12	0,3287
Gdp	105	6	1,69E+11	0,97	1018,7	0

	Coef.	Std.Err.	T	P> t	[95%	Conf.	Inter
Export							
Ifdi	1,575956	0,3510986	4,49	0	0,885662	2,26625	
Exrate	-2,67E+08	1,06E+08	-2,51	0,012	-4,76E+08	-	
Inf	1,61E+07	9633854	1,67	0,095	-2837999	5,79E+07	3,50E+07
Gdp	-0,0141172	0,0236582	-0,6	0,551	-0,0606315	0,0323971	
Import	1,071916	0,0813638	13,17	0	0,9119473	1,231885	
Unemp	1,44E+09	1,04E+09	1,39	0,167	-6,02E+08	3,48E+09	
Gfcf	-0,0026555	0,0538953	-0,05	0,961	-0,1086188	0,1033079	
_cons	0	(omitted)					
Import							
Ifdi	-0,1210407	0,286974	-0,42	0,673	-0,6852594	0,4431781	
Exrate	7,11E+07	8,15E+07	0,87	0,383	-8,90E+07	2,31E+08	
Inf	-9727767	7209507	-1,35	0,178	-2,39E+07	4446823	
Gdp	0,0239382	0,0174831	1,37	0,172	-0,0104352	0,0583116	
Export	0,5976645	0,0452421	13,21	0	0,5087142	0,6866148	
Unemp	6,56E+08	7,77E+08	0,84	0,399	-8,72E+08	2,18E+09	
Gfcf	0,1228753	0,0381648	3,22	0,001	0,0478396	0,1979109	
_cons	0	(omitted)					
Unemp							
Import	-7,03E-13	9,33E-12	-0,08	0,94	-1,91E-11	1,76E-11	
Export	9,64E-12	6,88E-12	1,4	0,162	-3,89E-12	2,32E-11	
Exrate	-0,0078261	0,0089409	-0,88	0,382	-0,0254048	0,0097526	
Inf	-0,0006446	0,0006668	-0,97	0,334	-0,0019556	0,0006664	
Gdp	3,10E-12	1,60E-12	1,94	0,053	-4,14E-14	6,24E-12	
Gfcf	-1,13E-11	3,52E-12	-3,2	0,001	-1,82E-11	-4,34E-12	

	Ifdi	-5,33E-11	2,59E-11	-2,06	0,04	-1,04E-10	-2,38E-12
	_cons	6,891866	0,6983484	9,87	0	5,518845	8,264887
Gdp							
	Import	0,920657	0,5705593	1,61	0,107	-0,201118	2,042432
	Export	-0,1440895	0,4285844	-0,34	0,737	-0,9867279	0,6985489
	Ifdi	3,459002	1,497728	2,31	0,021	0,5143242	6,40368
	Exrate	3,19E+09	2,53E+08	12,6	0	2,69E+09	3,69E+09
	Inf	-4,06E+07	4,14E+07	-0,98	0,328	-1,22E+08	4,08E+07
	Unemp	0 (omitted)					
	Gfcf	1,420966	0,1630278	8,72	0	1,100438	1,741495
	_cons	0 (omitted)					

HAUSMAN TEST RESULTS:

Hausman test is also performed on Panel data to determine whether to choose Random effects or Fixed effects for this thesis. A Breusch and Pagan Lagrangian multiplier test rejects the null hypothesis of no country-specific variance and a Hausman test confirms that estimating the model with fixed effects is preferable to random effects.

Correlation matrix of residuals:

	__e1	__e2	__e3	__e4	__e5
__e1	1,0000				
__e2	0,0376	1,0000			
__e3	0,0693	-0,5077	1,0000		
__e4	0,2536	-0,0722	-0,5024	1,0000	
__e5	0,0021	-0,4524	0,5739	-0,3584	1,0000

Breusch-Pagan LM test of independence: $\chi^2(10) = 26,217$, Pr = 0,0035
Based on 21 complete observations over panel units

Modified Wald test for groupwise heterosked
in fixed effect regression model

H0: $\sigma(i)^2 = \sigma^2$ for all i

$\chi^2(5) = 60,87$
Prob> $\chi^2 = 0,0000$

Pesaran's test of cross sectional independence = -1,386, Pr = 0,1656

Friedman's test of cross sectional independence = 15,813, Pr = 0,0033

Frees' test of cross sectional independence = 0,114

Critical values from Frees' Q distribution

alpha = 0.10 : 0,1231
 alpha = 0.05 : 0,1611
 alpha = 0.01 : 0,2338

hausman fe re

Note: the rank of the differenced variance matrix (3) does not equal the number of coefficients being tested (7); be sure this is what you expect, or there may be problems computing the test. Examine the output of your estimators for anything unexpected and possibly consider scaling your variables so that the coefficients are on a similar scale.

	Coefficients			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
ifdi	1,452851	1,388306	,0645456	,0449667
exrate	-2657376	-1,83e+08	1,81e+08	.
inf	6290413	1,51e+07	-8788815	3757214
gdp	-,0405112	-,0148664	-,0256448	,0149317
import	1,02692	1,104617	-,077697	,0179127
unemp	-2,82e+09	1,84e+09	-4,66e+09	1,74e+09
gfcf	,0923511	-,0060673	,0984183	,0184397

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(3) = (b-B)' [(V_b-V_B)^{-1}] (b-B)
 = 3,62
 Prob>chi2 = 0,3056
 (V_b-V_B is not positive definite)

hausman fe re

Note: the rank of the differenced variance matrix (2) does not equal the number of coefficients being tested (7); be sure this is what you expect, or there may be problems computing the test. Examine the output of your estimators for anything unexpected and possibly consider scaling your variables so that the coefficients are on a similar scale.

	Coefficients			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
import	9,51e-12	-4,36e-13	9,95e-12	.
export	-5,69e-12	8,50e-12	-1,42e-11	.
exrate	,0205577	-,0098666	,0304243	.
inf	-,0020188	-,0004772	-,0015416	.
gdp	-4,26e-12	3,11e-12	-7,37e-12	.
gfcf	7,00e-12	-1,12e-11	1,82e-11	.
ifdi	1,65e-11	-4,50e-11	6,15e-11	.

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \text{chi2}(2) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= -21,33 \quad \text{chi2} < 0 \implies \text{model fitted on these} \\ & \quad \text{data fails to meet the asymptotic} \\ & \quad \text{assumptions of the Hausman test,} \\ & \quad \text{see suest for a generalized test} \end{aligned}$$

hausman fe re

Note: the rank of the differenced variance matrix (2) does not equal the number of coefficients being tested (6); be sure this is what you expect, or there may be problems computing the test. Examine the output of your estimators for anything unexpected and possibly consider scaling your variables so that the coefficients are on a similar scale.

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fe	(B) re		
import	9,51e-12	,783913	-,783913	.
export	-5,69e-12	-,2586553	,2586553	.
exrate	,0205577	2,94e+09	-2,94e+09	.
inf	-,0020188	-4,41e+07	4,41e+07	.
gfcf	7,00e-12	1,530898	-1,530898	.
ifdi	1,65e-11	4,465286	-4,465286	.

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \text{chi2}(2) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= -39,65 \quad \text{chi2} < 0 \implies \text{model fitted on these} \\ & \quad \text{data fails to meet the asymptotic} \\ & \quad \text{assumptions of the Hausman test,} \\ & \quad \text{see suest for a generalized test} \end{aligned}$$

Consider for each country effect that is the Fixed Effects results with STATA:

```
Fixed-effects (within) regression      Number of obs   =    105
Group variable: co                    Number of groups =     5

R-sq:  within = 0,9863                Obs per group:  min =    21
      between = 0,9755                  avg =    21,0
      overall = 0,9819                  max =    21

corr(u_i, Xb) = -0,2316                F(7, 93)        =   953,01
                                      Prob > F         =   0,0000
```

export	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
ifdi	1,837101	,3502725	5,24	0,000	1,141529	2,532673
exrate	-3,51e+07	1,22e+08	-0,29	0,774	-2,78e+08	2,07e+08
inf	6697728	1,00e+07	0,67	0,507	-1,33e+07	2,67e+07
gdp	-,0459397	,0268397	-1,71	0,090	-,099238	,0073585
import	,9627253	,0827775	11,63	0,000	,7983456	1,127105
unemp	-2,75e+09	2,20e+09	-1,25	0,216	-7,13e+09	1,63e+09

.....
 . xtreg (unemp import export exrate inf gdp gfcf ifdi), fe

```
Fixed-effects (within) regression      Number of obs   =    105
Group variable: co                    Number of groups =     5

R-sq:  within = 0,2753                Obs per group:  min =    21
      between = 0,5816                  avg =    21,0
      overall = 0,0348                  max =    21

corr(u_i, Xb) = -0,5658                F(7, 93)        =     5,05
                                      Prob > F         =   0,0001
```

unemp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
import	1,04e-11	5,95e-12	1,74	0,085	-1,45e-12	2,22e-11
export	-5,98e-12	4,80e-12	-1,25	0,216	-1,55e-11	3,55e-12
exrate	,0184231	,0053702	3,43	0,001	,0077588	,0290873
inf	-,0020065	,0004213	-4,76	0,000	-,0028431	-,0011698

xtreg (gdp import export ifdi exrate inf unemp gfcf), fe

```

Fixed-effects (within) regression      Number of obs   =   105
Group variable: co                    Number of groups =    5

R-sq:  within = 0,9793                Obs per group: min =   21
      between = 0,9537                  avg =             21,0
      overall = 0,9578                  max =             21

corr(u_i, Xb) = -0,5055                F(7, 93)        =   630,01
                                          Prob > F         =   0,0000
  
```

gdp	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
import	1,418728	,4708814	3,01	0,003	,4836509 2,353805
export	-,6647853	,3883917	-1,71	0,090	-1,436054 ,1064835
ifdi	4,397053	1,446611	3,04	0,003	1,524369 7,269736
exrate	2,29e+09	3,99e+08	5,75	0,000	1,50e+09 3,09e+09

```

Fixed-effects (within) regression      Number of obs   =   105
Group variable: co                    Number of groups =    5

R-sq:  within = 0,9872                Obs per group: min =   21
      between = 0,9798                  avg =             21,0
      overall = 0,9849                  max =             21

corr(u_i, Xb) = 0,0619                F(7, 93)        =  1026,99
                                          Prob > F         =   0,0000
  
```

import	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
ifdi	-,1033566	,3186368	-0,32	0,746	-,7361061 ,5293929
exrate	-1,93e+07	9,77e+07	-0,20	0,844	-2,13e+08 1,75e+08
inf	6478419	8026538	0,81	0,422	-9460695 2,24e+07
gdp	,0626824	,0208045	3,01	0,003	,0213687 ,103996