Foreign Direct Investment in the Banking Sector: Empirical Evidence from Turkey

A thesis submitted for the degree of

Doctor of Philosophy

Division of Economics

Stirling Management School

By

Dervis Kirikkaleli

January 2013

Declaration

In accordance with the Regulations for Higher Degrees by Research, I hereby declare that the whole thesis now submitted for the candidature of Doctor of Philosophy is a result of my own research and independent work except where reference is made to published literature. I also hereby certify that the work embodied in this thesis has not already been submitted in any substance for any degree and is not being concurrently submitted in candidature for any degree from any other institute of higher learning. I am responsible for any errors and omission present in the thesis.

Candidate: _____

Dervis Kirikkaleli

Abstract

Multinational bank activities have gradually risen in developing countries since the beginning of the globalisation process. Rising foreign bank activities in developing countries have motivated researchers to investigate foreign banks, comprehensively. Turkey is a typical example of a developing country that achieved a tremendous growth rate in foreign bank asset, especially throughout the last decade. The aim of this thesis is to examine two-way linkage; (1) between foreign bank penetration (FBP) and banking variables; (2) between FBP and country risk and (3) between FBP, foreign direct investment (FDI) and foreign portfolio investment (FPI) in Turkey. Therefore, this thesis is constructed by three empirical sections. Moreover the pattern of FDI inflow and outflow in the world and in Turkey has been analysed, chronologically. In addition, the theory of FDI is taken into account and existing FDI theories has been criticised.

In the first empirical work – Chapter 3 - the short run and long run relationship, if it exits, between FBP and determinants of bank performance (namely, domestic bank assets, domestic credit and banking profitability) in Turkey was investigated after controlling DGDP[1] and 2001 financial crisis (DUM2001). The outcome of the Granger causality test indicates that there was unilateral causality which runs from DDB[2] to DFBP[3]. Moreover, I also found feedback causality between DFBP and DCREDIT[4]. By employing impulse response functions, I found that there is positive relationship between DFBP and DCREDIT as I expected. Moreover, the response of DFBP to one standard deviation shock in domestic bank

---

[1] DGDP denotes the first difference of GDP.
[2] DDB denotes the first difference of domestic bank assets (DB).
[3] DFBP denotes the first difference of FBP.
[4] DCREDIT denotes the first difference of domestic credit (CREDIT).

assets is initially statistically significant and positive. The reverse effect is statistically significant and positive. In the final model, the response of DFBP to one standard deviation shock in profitability (PRO) is significant and positive at 3rd quarter. The reverse effect is surprisingly positive but not statistically significant.

Specifically, what has not been also investigated deeply in the empirical literature is the two-way linkage between foreign bank penetration and risk such as political, financial and economic. Thus, in chapter 4, linkage between FBP and country risk (namely, political risk, economic risk and financial risk) was examined in Turkey using quarterly data from 1994Q1 to 2009Q4. My finding indicated that I found one error correction term significant and positive in bivariate vector error correction in model 1 and 2, implying that in the long run, foreign bank penetration has contributed to economic and political risk. Moreover, short run causality based on VAR approach between DFBP and financial risk is investigated but I failed to find any significant causality in the VAR model after controlling DGDP and 2001 financial crisis, even at the 10% level. By analysing impulse response functions, I could not detect any significant relationship between DFBP and host country risk variables in the short run. This is because adding control variables (DGDP and DUM2001) make the relationship between host country risk variables and DFBP statistically insignificant.

Finally, I investigated two-way linkage between FBP, FPI and FDI in Turkey after controlling DGDP and 2001 financial crisis. The finding from the VAR based block exogeneity wald test indicated that changes in DFBP significantly lead to changes in DFDI[5] and there is also unilateral causality which runs from FPI to DFBP. Moreover, using the variance decomposition technique I found that DFDI and FPI have little explanatory power

---

[5] DFDI denotes the first difference of FDI.

for the evolution of DFBP in Turkey. The contribution of DFBP to the variability of DFDI is more than that of FPI. The contribution of DFDI to FPI variability ranges between 0.000% and 9.122% throughout 12 quarter periods whilst the contribution of DFBP to FPI variability ranges between 0.000% and 7.611%.

Acknowledgements

Table of Contents

Chapter 5: The Linkage between Foreign Bank Penetration and Host Country Risks:

Index of Tables

Index of Figures

Chapter 1: Introduction

The rising magnitude of investments of multinational enterprises (MNEs) has encouraged researchers to grow their interest in the consequences and causes of foreign direct investment (FDI). In the same direction with the globalisation process[6], multinational bank activities have gradually risen in developing countries. Rising foreign bank activities in developing countries have motivated researchers to investigate foreign banks, comprehensively. Turkey is a typical example of a developing country that achieved a tremendous growth rate in foreign bank asset, especially throughout the last decade. The share of bank assets held by the foreign banks in Turkey has jumped from US$ 8.15 billion (3.50% of the total banking assets) in 2005Q1 to US$ 84.24 billion (13.72% of the total banking assets) in 2010Q3. These numbers clearly show that Turkey attracted foreign bank interest despite the current global crisis. There is, however, little empirical literature for the foreign banks in Turkey despite this current pattern. The aim of this thesis is to examine two-way linkage; (1) between FBP and banking variables; (2) between FBP and country risk and (3) between FBP, FDI and FPI in Turkey.

In the 2nd Chapter, initially I define FDI and explain how the definition of FDI changed over time. Then, the costs and benefits of FDI are explored based on empirical and theoretical literature. More specifically, the impact of FDI on economic growth, employment, technology and managerial skills, competition, environment and balance of payment is explored. As a next step, the chronologic pattern of FDI from the beginning of the 1800s to present in the world and Turkey is explored. Finally, the evolution of the Turkish banking

---

[6] Globalisation is a process of the integration of economies, cultures and societies around the world. In common, the word of "globalisation" was used in the concepts of FDI, capital flow, trade and so on. The globalisation period was started at the beginning of the 1980s when the integration of economies, cultures and societies around the world accelerated.

sector and foreign banking in Turkey from the end of the Ottoman Empire period to present are investigated.

The main aim of the 3rd Chapter is to evaluate the existing theories of MNEs and reveal their lack of power to explain the direct investments of MNEs, including the theory of multinational banking. The nature of FDI is one to one related with MNEs and the theory of FDI is part of the theories of MNE because most direct investments are realised by MNEs. These theories are monopolistic advantage theory, product cyclic theory, currency areas and exchange rate theories, oligopolistic advantage theory, transaction cost theory and Dunning's eclectic paradigm.

Although the performance of foreign and domestic banks in Turkey was heavily investigated, the short run and long run relationship, if it exists, between banking performance and foreign bank penetration has not been explored. Therefore, the linkage between FBP and determinants of bank performance (namely, domestic bank assets, domestic credit and banking profitability) in Turkey was investigated using quarterly data from 1994Q1 to 2009Q4 after controlling DGDP and 2001 financial crisis. Using Granger causality, impulse response function, and variance decomposition, I examined the short run dynamics. The outcome of the Granger causality test indicates that there is feedback causality which runs from domestic banking to DFBP at 10 % level. I found that in the short run, there is a positive relationship between DFBP and domestic bank assets by analysing the impulse response functions. My findings also indicate that there is feedback causality between DFBP and DCREDIT at 5% level. In line with the literature, the sign of the relationship between DFBP and domestic credit is positive in the second model as I expected. Finally, my study reveals

that no Granger causality between profitability and DFBP is found. The response of DFBP to one standard deviation shock in PRO is significant and positive at 3rd quarter. The reverse effect is surprisingly positive but not statistically significant.

In chapter 4, linkage between DFBP and country risk (namely, political risk, economic risk and financial risk) was examined in Turkey using quarterly data from 1994Q1 to 2009Q4. My finding indicated that one cointegrating vector is detected between DFBP and political risk in model 1 and between DFBP and economic risk in model 2 whereas I failed to find any long run relationship between DFBP and financial risk using the Johansen co-integration test. I found one error correction term significant and positive in bivariate vector error correction in model 1 and 2, implying that in the long run, foreign bank penetration has contributed to economic and political risk. Moreover, short run causality based on VAR approach between DFBP and financial risk is investigated but I failed to find any significant causality in the VAR model, even at the 10% level. In the short run, there is no significant relationship between foreign bank penetration and host country risk variables in Turkey. This is because adding control variables (DGDP and DUM2001) make relationship between host country risk variables and DFBP statistically insignificant.

Finally, I investigated two-way linkage between FBP, FPI and FDI in Turkey while controlling DGDP and 2001 financial crisis. In order to obtain information about a causal relationship among the time series variables a VAR based block exogeneity wald test was performed. The finding from this test indicated that; changes in DFBP significantly lead to changes in DFDI; there is also unilateral causality which runs from FPI to DFBP at 5% level. Moreover, using the variance decomposition technique I found that DFDI and FPI have little explanatory power for the evolution of DFBP in Turkey. The contribution of DFBP to the

variability of DFDI is more than that of FPI. The contribution of DFDI to FPI variability ranges between 0.000% and 9.122% throughout 12 quarter periods whilst the contribution of DFBP to FPI variability ranges between 0.000% and 7.611%.

Chapter 2: FDI and its Pattern in Turkey

Dervis Kirikkaleli

Stirling Management School, Division of Economics, University of Stirling, FK9 4LA

Email: dervis.kirikkaleli@stir.ac.uk

Telephone: +44 (0) 759 100 5766

2.1 Definition of FDI

In the literature, there are various concepts of FDI. Generally, FDI is called "private capital investment, international direct investment, direct investment and direct foreign capital investment" even though each concept has a different meaning. Before World War II (WWII), foreign portfolio investment (FPI)[7] depicted the largest share of international investment and such investment was mostly directed to higher interest rate destinations from low interest rate destinations (Grazia, 2005). The ratio of FDI to capital flows has gradually changed since the WW II. With a changing world, the definition of FDI has changed few times since the 1930s. Razin et al. (1996) stated that the most important characteristic of FDI is the "control" issue which gives direct investors additional advantages such as local information and power over the host country enterprises. Foreign investors in the world generally realised their direct investments to foreign countries when they were able to acquire whole shares of host country's enterprises in the beginning. However, at the present time, the

---

[7] Foreign portfolio investment arises when a foreign investor does not have any managerial control on domestic company in a host country.

importance of the control is minimised and even foreign investors are willing to own host country' enterprises jointly with other investors.

The definition of FDI has shifted from "control" to "lasting interest" (OECD, 1999; Lipsey, 1999; IMF, 1993 and Kehal, 2004). The lasting interest concept involves long-term relationship between home country's investors and host country' enterprises with a considerable degree of influence over the management of the host country 'enterprise. According to the OECD and IMF, FDI takes place when a foreign investor has significant influence or at least 10 % of the ordinary shares of an incorporated firm in a home country[8]. However, some countries ignored this definition of FDI. Therefore, the definition of FDI varies among countries. Acquiring 10% shares of US' enterprise by a foreign investor is recorded as FDI in the US whereas a foreign investor needs to acquire at least a 20% share of the host country enterprise in order to be recorded as a direct investment in the UK. This leads to small gap between total FDI inflows and total FDI outflows. Therefore, the measurement and definition of FDI varies among countries. In other words, there is no globally acceptable or unique definition of FDI in the world. In addition, sometimes it is difficult to identify whether foreign investment is a direct or portfolio investment because information about the role of foreign investors may not be clear.

Foreign affiliates can be a branch, associate or subsidiary.

---

[8]Despite the 10 % share acquisition by a foreign investor in a host market does not give an enough power over the associated company, but the 10 % used to identify difference between foreign portfolio investment and FDI in the form of shareholding.

Subsidiary: " An incorporated enterprise in the host country in which another entity directly owns more than half of the shareholders´ voting power, or is a shareholder in the enterprise, and has the right to appoint or remove a majority of the members of the administrative, management or supervisory body" (Moosa, 2002, page 8).

Associates: "An incorporated enterprise in the host country in which an investor, together with its subsidiaries and associates, owns a total of at least 10%, but not more than half, of the shareholders´ voting power" (Moosa, 2002, page 8).

Branches: "is a wholly or jointly-owned unincorporated enterprise in the host country, which may take the form of a permanent office of the foreign investor or an unincorporated partnership or a joint venture" (Moosa, 2002, page 8).

In Turkey, opening a new operation (Greenfield investment), opening a branch or possessing at least 10 % share or voting right of a Turkish enterprise by a foreign investor is recorded as FDI inflow but obtaining a share of a Turkish enterprise by a foreign investor cannot exist in the IMKB 50 or IMKB 100 which are the stock exchanges in Turkey. According to the FDI law (No. 4875), portfolio investors are defined as those who purchase foreign stock and other types of financial assets and own a share of a host enterprise. These investors do not require possessing managerial and controlling roles of owned shares of the host enterprises.

Since the beginning of the globalisation period, higher growth rates in FDI flows relative to that in FPI and trade in the world have made FDI a more interesting area to research. At the same direction of the growth, theory of FDI has been developed. Especially, the determinants and impact of FDI has been a popular research area. What is an interesting point here is that although there have been a large number of empirical researches, a globally acceptable model of FDI has not existed (Kehal, 2004). Gradually, an increase in the volume of FDI in the world led to an improvement in the theory of FDI by answering these questions:

- How were foreign companies competitive against host country companies?

- Why did companies prefer to invest abroad?

- Why did companies prefer direct investment instead of licensing or exporting their advantages?

- Why did firms prefer one country instead of others?

Some researchers focused only on FDI inflows in order to describe the theory of FDI by answering the question of how host country factors attract FDI. While others concentrated on FDI outflows to explain the pattern of FDI by answering the question of why firms invest in a foreign market?

First of all, in order to understand the theory of FDI, it is necessary to answer the question of "why does company invest abroad?" There is a variety of reasons; (1) to maximise profit; (2) to increase international competitiveness; (3) to reach raw materials; (4) to get benefit from monopolistic market in a host market; (5) to internalise company's production process; (6) to

diversify its risk; (7) to improve technology and managerial skill of the company and so on. In other words, the theory of multination enterprises must be taken into consideration. Multinational corporations (MNCs) are crucial for the pattern of FDI flows in the world because the majority of FDI flows have been realised by MNCs. Since the end of WWII, the importance of MNCs has gradually grown in both developed and developing countries. Therefore, the concept of MNCs should be described in order to understand the theory of FDI clearly. Toyota, McDonalds, Coca-Cola and Sony are some examples of MNCs. More interestingly, MNCs do not have a globally acceptable and unique definition (UNCTAD, 1998). According to the United Nation (1973), there are 21 different known definitions of MNCs. The definition of MNCs divides into their features such as size, production capacity, and value of MNCs' assets in a foreign market. In general, a company is classified as a multinational if the company provides a service or controls production in more than one country. However, MNCs do not need to be a direct investor because MNCs may hire all resources that they need for overseas production instead of obtaining them (Rugman, 1982).

At present, FDI is a more stable form of international investment in comparison to FPI (Lipsey, 1999 and 2001). This approach is proven by the Asian crisis at the second period of the 1990s. Although the volume of FPI was dramatically reduced and such investment blamed for the Asian crisis, the reduction of FDI to these countries was much less than that in FPI because the direct investors are less sensitive to the fragility in the finance markets relative to the portfolio investors (Albuquerque, 2003 and Wei, 2001).

2.2 Costs and Benefits of FDI to Host and Home Countries

Both developed and developing countries in the world aim to attract foreign capital because they have identified its importance for the economic development of host markets. In line with this perspective, FDI is likely to improve technology, managerial skills and know-how in host countries while creating job opportunities for domestic workers and affecting the balance of payment, positively. However, some academics underline the destabilisation effect of FDI on economic development of host markets and the environment.

2.2.1 Economic Growth

Although the majority of academics and policy makers have a consensus about the positive effect of FDI on a host country's economic growth (Caves, 1996 and Lensink and Morrissey, 2001), the view that productivity and efficiency of local firms is positively related to the rising FDI is not clear, especially in developing countries. It is well-known that, FDI is an important source of foreign capital in both developed and developing country. Moreover, such investment tends to facilitate technology and know-how transfers in host markets. Thus, this situation accelerates the economic growth of host markets. Consistent with this view, both developed and developing countries have improved their investment environment via providing incentives to foreign investors in order to attract more foreign projects. Caves (1996) has a supportive finding for this argument because he concludes that a host country tries to attract FDI in order to gain from know-how, advanced technology, managerial skills and production standards of MNCs. Similar to the finding of Caves (1996), De Gregorio (2003) puts forward that FDI is much more effective than domestic investment in case of

accelerating economic growth in Latin American countries. This is because he finds that FDI has three times more effect on GDP than domestic investment. Glass and Saggi (1998), Lensink and Morrissey (2001) and Alfaro et al. (2003) also conclude that economic development is accelerated as a result of rising foreign presence in a host country.

On the other hand, Haddad and Harrison (1993) fail to find positive spillovers from MNCs to Morocco's economic growth using panel data. Aitken et al. (1997) put forward that foreign company penetration does not always lead more productive sector due to rising competition. Durham (2004) fails to accept the hypothesis that there is a positive linkage between foreign presence and economic development. Smarzynska (2002) also supports the negative spillovers on the host countries economy.

2.2.2 Employment

FDI inflows to a host market is seen a key element of an outward-oriented development strategy and this kind of international investment involves significant factor that creates additional job opportunities in the host markets, either directly or indirectly. Therefore, such investment is likely to reduce unemployment in the host country. The reduction of the unemployment rate in developing countries because of entries of MNCs - which are the main sources of FDI - ranges between 1% and 6%. It is well-known that unemployment is one of the problems of developed and especially developing countries (Fu and Balasubramanyam, 2005). While the number of workers in MNCs were almost US$ 45 million in 1970, the number increased to US$ 70 million in 1990 (UNCTAD, 1994). One of the main differences

between developing and developed countries in terms of MNCs is investment decision. While MNCs concentrated on technology intensive sectors in developed countries, they concentrated on labour intensive sectors in developing countries. Therefore, the impact of FDI inflows on employment is more effective in developing countries than in developed countries. Although the contribution of MNCs to job creations in service and manufacturing sectors are prominent, the effect of foreign entry on employment in mining and agriculture sectors is very limited. The employment contribution of FDI in manufacturing in some Latin American countries, Colombia, Argentina, Bolivia and Brazil, is between 10% and 25%. In line with this perspective, Enderwick (1996) underlines the importance of MNCs on the employment generation and the structure of Central European countries. In addition, Fu and Balasubramanyam (2005) try to examine the relationship between FDI, export and employment in China. The estimate of them indicates that employment in China has grown by around 3% as a result of increasing FDI by 1%. Moreover, rising 1% of FDI is associated with 9% rising employment. However, Ernst (2005) points out that MNCs penetration to the markets of Argentina and Brazil does not affect the structure of employment because of the entry mode of MNCs. Most of the direct investment was realised as a result of mergers and acquisitions, privatisation, and deregulation. Therefore, new job opportunities for the citizens in these countries could not be created as expected. However, in Mexico, rising MNCs is associated with increasing employment. As a result, the majority of theoretical and empirical papers underscore employment creation effect of MNCs in host countries, but changing the entry mode of MNCs is likely to affect this situation. Therefore, the impact of MNCs on employment generation is still a subject of debate.

2.2.3 Technology and Managerial Skills

The majority of technology and research and development (R&D) of MNCs are sourced by some of the developed countries which are the US, the UK, Japan, Germany, Switzerland and the Netherlands. "… MNCs produce and own the bulk of the world's modern technology; it is not obvious exactly how MNC technology spreads across international borders and what role MNCs play in the process" (Blomström and Kokko, 1996; page 3).

MNCs provide a chance to develop host countries production technology and management skill, especially in developing countries where in general production technology and managerial skills are low relative to the home countries of MNCs (UNCTAD, 1999). This is because the main productions of developing countries concentrate on the agriculture and non-technological industrial products. Therefore, most of the developing countries have gotten into a position as the buyer of technology. Insufficient technology transfer is one of the important factors that slows down the development of developing countries.

In an early paper - Caves (1974) - puts forward that domestic companies in the Australian manufacturing sector benefit from a positive spillover generated by MNCs. In line with Caves (1974), the finding of Rhee and Belot (1989) reveals that in Mauritius and Bangladesh, the efficiency and development of local textile firms are positively affected by the foreign presence. Borensztein et al. (1998) look at this situation from a different perspective and they conclude that productivity can be affected if MNCs expand the variety of technological equipment in a host country. Liu (2002) claims that there is a significant impact of foreign

presence on the productivity of domestic manufacture firms in China. Moreover, Kathuria (2002) points out that foreign company entries and technology transfers have a positive effect on the local firms' efficiency. Javorcik (2004) and Bhattacharya et al. (2008)[9] also find that MNCs have positive spillovers on the technology of the domestic companies in the same industry.

On the other hand, the findings of Germidis (1977), Haddad and Harrison (1993) and Aitken and Harrison (1999) indicate totally different results for the case of the effect of MNCs on the productivity or technological development of local firms. While Haddad and Harrison (1993) and Aitken and Harrison (1999) conclude that MNCs have negative spillovers on the productivity of domestic firms, Germidis (1977) finds that FDI does not provide any technology transfer to domestic firms.

As a result, the majority of empirical and theoretical findings support the perspective of positive impact of MNCs on the productivity and technological development of local firms rather than negative ones. Improving technological infrastructure is crucially important for developing countries in order to approach the production standards of industrialised and developed countries. That is why developing countries try to encourage advanced technology possessive MNCs. They even offer some incentives to MNCs such as tariff reduction, high profit transfer rates, subsidies for infrastructure and so on[10].

---

[9] Moreover, Bhattacharya et al. (2008) also find that R&D activities of local firms in India could not been affected by foreign company penetration.

[10] Apart from the positive effect of FDI to the technological development of host country companies, in order to increase the national technology sources, governments in developing countries need to provide enough budgets to R&D and encourage domestic investors to invest in R&D.

2.2.4 Competition

In the world, foreign company entries to host markets increase the number of companies, directly. Therefore, these entries increase the competition in the host market and break the domestic monopoly - if it exists - . This situation is likely to increase the number of products, the type of products and the quality of products. The levels of contribution of MNCs on the competition and productivity in the host country depend on their attitudes and mode of entry. Rising competition as a result of foreign entries forces domestic companies to improve their production technology in order to be competitive in the host market. This technological development of domestic companies can be achieved by either merging with foreign companies or buying new technology abroad. Moreover, the host country saves its foreign exchange reserves if the products of MNCs concentrate on a host market.

The study of Blomstrom and Wolff (1994) investigates the spillover from foreign company entries on the competition and productivity of Mexican domestic manufacturing firms over the period of 1965-1984. Their finding reveals that rising foreign entries is associated with higher competition and productivity in the manufacturing sector as a result of the attempt of local firms to improve their technology and managerial skills. Because, local firms without investing their technological development and managerial skills, they cannot be competitive against foreign ones. This competition in the host market is likely to force domestic firms to use resources more productive and efficiently (Glass and Saggi, 2002). This situation is clearly mentioned in the oligopolistic reaction theory (Caves, 1971). Nunnenkamp (2004)

puts forward that FDI does not only lead to capital flows to a host country but also brings MNCs' existing technology and know-how. Therefore, productivity increase in the host market and even other sectors might be affected positively. Wang and Blomström (1992), Nickell (1996), Sjoholm (1999) also underscore the importance of foreign presence to competition and firm performance in host countries.

2.2.5 Environment

Prior to WWII, a disproportionate amount of FDI was directed to agriculture and mining sectors in order to reach the natural resources of developing countries. Although this pattern changed in developed countries after WWII, some developing countries still attract a high amount of FDI to their natural resource sectors. Therefore, FDI is likely to affect host countries' environment, directly.

Since the beginning of the 1980s, environmental degradation in developed and developing countries has accelerated (Xing and Kolstad, 2002). This pattern is mainly explained by two factors: economic growth and population. Developing countries, especially where foreign capital is necessary, make their environment regulation less strict in order to attract foreign capital. This leads to some adverse environmental results such as environmental degradation and high pollution levels. Therefore, attracting FDI to natural resource sectors in developing countries needs a control on MNCs about their impacts on the environment as well as strong regulation system in order to achieve sustainable growth in the economy and the natural resource sector.

Xing and Kolstad (2002) aim to answer the question - "what impact has US FDI on the host countries' environment quality?" – They clearly point out that developing countries are willing to utilise their environmental regulations to gain the interest of MNCs. He (2006) concludes that rising multinational company activities is associated with less environmental quality in the host market.

2.2.6 Balance of Payment

The most important effect of capital inflows arises on the host market' balance of payment. As well known, one of the most important problems in developing countries is the deficit in the balance of payment (Head and Ries, 2001 and Fu and Balasubramanyam, 2005). The effect of FDI on the host market' balance of payment can be investigated under two categories; the financial effect and the trade effect. In case of the financial effect, FDI directly increases the foreign reserves of the host country if there is a fixed exchange rate and therefore has a positive impact on the balance of payment but profit transfers of foreign companies in the host market lead to capital outflows and thus balance of payment is affected negatively. However, most of the countries limit the profit transfers of foreign companies. In cases of the trade effect, FDI initially may lead to a negative effect on the trade of the host market because in some cases, foreign companies prefer to use their home country raw material and intermediate goods to produce final products abroad. However, over time their cumulative export excesses their cumulative imports and profit transfers. As well known, export is widely accepted as an engine of growth. Thus, it is important to know whether FDI

leads to a significant change in the performance of host country's export level. Most of the empirical studies in this field conclude that the impact of FDI in host country' export is unquestionable but the degree of the impact depends on the tendency of export of foreign investors (Head and Ries, 2001 and Zhang and Song, 2000). For example, FDI concentrates on the export intensive Asian countries such as China, India, Indonesia and Malaysia. Therefore, FDI contributes the competitiveness of host countries' export in the global market.

Markusen (1983) aims to investigate the effect of factor movements[11] on trade and he concludes that factor movements contribute positively to trade. Using 900 Japanese companies as a data set, Head and Ries (2001) investigate how the firm exports is affected as a result of increasing FDI and they conclude that there is positive linkage between outward FDI and export. In line with this finding, Zhang and Song (2000) point out that in China one of the main positive effects of FDI inflows is on the China's export performance.

---

[11] The movements of capital, labour and other factors of production among economies are the factor movements. Markusen (1983) purposes to investigate a number of conditions in which commodity trade and factor movements are positively related in case of the volume of trade, while relaxing some assumptions; (1) countries have identical technologies; (2) production is characterised by constant returns to scale; (3) production is characterised by perfect competition and (4) there are no domestic distortions in either country" (Markusen, 1983, page. 343).

2.3 Historical Pattern of FDI in the World and in Turkey

2.3.1 Historical Pattern of FDI in the World

Foreign investment started with industries revolution in the second half of the 19th century in West European countries - especially in Great Britain (Yavan, 2006). The main reason behind foreign investment was the necessity for industrial raw materials in the first half of the 1880s. As explained by Moosa (2002) , foreign investment "… took the form of lending by Britain to finance economic development in other countries as well as the ownership of financial assets" (Moosa, 2002; page 16). At the same time period, the direct investments of industrial countries were directing to the colonies of West European countries. Foreign investment of British enterprises largely concentrated on the consumer goods sector (Moosa, 2002). Although, the history of portfolio investment - bond and debt investments - is very old, FDI had begun to become an important part of the international investment instrument in the 1920s. That is why initially direct investment is also explained by early portfolio theories.

2.3.1.1 Inter-war Period (1914-1948)

Throughout the interwar period, Great Britain was the dominant country in the world's FDI stock, and mostly FDI inflows directed to developing countries - especially Great Britain's colonies and Latin American countries. FDI inflows to these countries were realised by British MNCs. The followers of Great Britain in terms of direct investment abroad were the

US, France, Germany, Belgium, Switzerland and the Netherlands prior to WWI. In 1914, more than 45% of the world's total FDI stock was made by Great Britain (Feis, 1965).

The downward trend of foreign capital investments (FCI) throughout WWI reversed at the beginning of the 1920s, but the global economic crisis in 1929, once again, led to a dramatic reduction in FCI flows in the world. Even, the majority share of the home countries' FCI drew back during this period (Bulutoglu, 1970 and Tuncer, 1968). Although the downward trend of FCI flows had been continued during the interwar period in the world, FDI flows had continued to increase (Hanink, 1997). In line with this process, the activities of MNCs had also increased. For example, new MNCs arose during the inter war period in the oil sector especially in Mexico.

The most distinct features of FDI prior to WW II are explained below;

- The main source of FDI was companies of Great Britain and the US.
- Secondly, FDI inflows in developing countries concentrated on the primary sector such as agriculture and mining whilst manufacturing was the dominant sector in FDI inflows in developed countries (Yavan, 2006).
- Another important feature in this time period is that the volume of FDI stock directed to developing countries was more than that to developed countries.

As shown in Table 1, while only one-third of the world's FDI stock (only US$ 5.2 million) had been directed to developed countries[12], developing countries were attracting almost two-thirds of the world's FDI stock, which was equivalent to nearly US$ 9 million. In 1938, 66% and 34% of the world's FDI stock had been directed to developing and developed countries, respectively but the ratios are totally different today.

Table 1. Estimated Stock of Accumulated FDI by Recipient Area (Million US $)

	1914	%	1938	%	1960	%	1971	%
Developed Countries	5.2	37%	8.3	34%	36.7	68%	108.4	68%
Developing Countries	8.9	63%	16	66%	17.6	32%	51.4	32%
Total	14.1		24.3		54.3		159.8	

Source: J. H. Dunning, J. H. "Changes in the Level and Structure of International Production: The Last One Hundred Years" in International Investment, ed. Peter J. Buckley, Aldershot, Hants, (England; Brookfield, Vt., USA: E. Elgar, 1990) p.7 (International and unallocated for the years 1971 and 1979 3.9 and 2.6). % indicates the percentage of the accumulated FDI of developed or developed countries to the accumulated FDI in the world.

2.3.1.2 World War II to 1979

The upward trend of FDI flows had continued in the post-WW II period because of the technological improvement in transportation and communication and the necessity of US capital in order to reconstruct the destroyed infrastructure of Europe due to the WW II (Moosa, 2002). Foreign capital investment was mostly in the form of portfolio investment before WW II, the share of FDI into foreign capital investment, however, has increased since WW II. The changing sectoral distribution of FDI was another distinct change after WW II.

---

[12] The amount of cumulative FDI stock in the developed country was nearly 5 million dollar in 1914.

While the share of primary sector FDI, especially infrastructure and natural resources, was declining, the share of industry FDI was increasing (Dunning, 1988).

As explained in the previous section, developing countries attracted two-thirds of the world's FDI stock but the situation changed after WW II. In other words, the direction of FDI inflows changed from developing countries to developed countries. As shown in Table 1, the developed countries attracted 68% of the world's FDI stock in 1960. Thus, developing countries only attracted less than one-third of the world's FDI stock. Until the 1970s, the volume of MNCs activities declined in developing countries at the same direction with the volume of FDI inflows. Thirdly, the US became the dominant country in both inward and outward FDI in the world. The ratio of the US's inward FDI stock to the ratio of world's inward FDI stock reached to 48% in 1960. However, the share of both US and Great Britain's FDI flows into the world's FDI stock has been reduced since the 1970s while the number and volume of MNCs in the Netherlands, Japan, Germany and Switzerland has increased. Thus, these countries had started to take an important role in the FDI flows (Dunning, 1988). Finally, the activities of MNCs have expanded and the largest share of FDI has been realised by these MNCs (Alpar, 1978; Uras, 1981). The number of MNCs had increased and international production had increasingly grown throughout the 1960s.

By the 1970s, the three main developments in terms of FDI are the dominance of Great Britain in FDI inflows, high growth rate achievement by developing countries in FDI inflows and the Oil Crisis in 1973-74. The main reasons behind Great Britain taking first position in terms of FDI flows are the removal of foreign exchange controls and the surpluses of Northern Sea oil (Moosa, 2002). The erupting oil crisis in 1973-74 had led to increases in the

oil price in the world. Thus, oil spending of developed countries, which are mainly oil import countries, increased. This led to a reduction in FDI outflow in developed markets. Table 2 shows this situation clearly. FDI outflow in developed countries dropped from nearly US$ 26 billion in 1973 to US$ 24 billion in 1974, as shown in Table 2. In other words, the growth of FDI outflow in developed countries was − 6 % in 1974. This is because in a case of crisis, MNCs generally are not willingly to invest abroad because an erupting crisis likely leads to extra costs to the direct investments of MNCs and this will force them to delay or even cancel their investment projects.

Table 2: FDI Inflow and Outflow in the World (Million US $) (1970 - 1979)

FDI Outflow						FDI Inflow					
Year	World	*Δ*	DC	*Δ*	LDC	*Δ*	Year	World	Δ	DC	Δ	LDC	Δ
1970	14151		14100		51		**1970**	13345		9491		3854	
1971	14440	*2%*	14395	*2%*	45	*-12%*	**1971**	14282	*7%*	10650	*12%*	3631	*-6%*
1972	15770	*9%*	15657	*9%*	113	*152%*	**1972**	14932	*4%*	11509	*8%*	3423	*-6%*
1973	25938	*64%*	25808	*65%*	130	*14%*	**1973**	20645	*38%*	15470	*34%*	5175	*51%*
1974	24474	*-6%*	24185	*-6%*	289	*123%*	**1974**	24126	*17%*	21661	*40%*	2465	*-52%*
1975	28594	*17%*	28057	*16%*	536	*86%*	**1975**	26567	*10%*	16857	*-22%*	9709	*294%*
1976	28414	*-1%*	27920	*0%*	494	*-8%*	**1976**	22002	*-17%*	15535	*-8%*	6467	*-33%*
1977	28741	*1%*	28124	*1%*	616	*25%*	**1977**	27139	*23%*	20147	*30%*	6991	*8%*
1978	39352	*37%*	38578	*37%*	774	*26%*	**1978**	34358	*27%*	25367	*26%*	8990	*29%*
1979	62884	*60%*	62454	*62%*	431	*-44%*	**1979**	42292	*23%*	33786	*33%*	8505	*-5%*

Source: UNCTAD (Columns in italic letters were calculated by the author). Δ indicates the growth of FDI inflow and outflow in the world. DC and LDC denote developed and less developed countries, respectively.

Table 3: The Growth of FDI Inflow and Outflow in the World

	FDI outflow (Δ)	*FDI outflow in the DC Δ*	*FDI outflow in the LDC Δ*
1970-1975	*17%*	*17%*	*73%*
1976-1980	*16%*	*15%*	*126%*
Year	*FDI inflow (Δ)*	*FDI inflow in the DC Δ*	*FDI inflow in LDC Δ*
1970-1975	*15%*	*15%*	*56%*
1976-1980	*17%*	*24%*	*-3%*

Source: UNCTAD (Columns in italic letters were calculated by the author). Δ indicates the growth of FDI inflow and outflow in the world. DC and LDC denote developed and less developed countries, respectively.

As shown in Table 2, FDI inflows to developing countries jumped from US$ 3854 million in 1970 to US$ 9709.45 million in 1975. In 1970, US$ 9491 million FDI inflows were directed to developed countries. Although the volume of FDI inflows in developed countries was three times greater than that in developing countries, developing countries were achieving tremendous growth in terms of FDI inflow by 56% on average from 1970 to 1975. The reasons behind the high growth rate in FDI inflows in developing countries despite the petrol crisis are the reduction in profitability in developed countries as a result of rising raw material prices and the declining of productivity of labours in developed countries. Another interesting episode during the 1970s is the contribution of developing countries to the FDI outflow. As seen in Table 3, even though, developing countries had achieved 73% annual growth of FDI outflow on average from 1970 to 1975, the contribution of developing countries to the world's FDI outflow (US$ 536 million) was less than 1%. Especially, at the end of the 1970s, FDI inflows and FDI outflows in developed countries increased substantially. FDI inflows to developed countries jumped from US$ 16857 million in 1975 to US$ 33786 million in 1979. Thus, around 30% growth on average was achieved in FDI inflows by developed countries during 1975-1979. This pattern clearly mirrored the forthcoming strong integration process especially among developed countries. At the same period, the average growth of FDI inflows, however, was -3% in the developing countries.

The average growth FDI outflow in developing countries, which is 126% annually, was much more than that in the developed countries (73%). However, the contribution of developing countries to the world's FDI outflows was less than 2% throughout the second half of the 1970s. In other words, 98% of the world's FDI outflow was realised by developed countries.

2.3.1.3 1980 to Present

The 1980s are called the "turning point" in terms of the FDI flows. An increase in the implementation of liberal economic policies and positive improvement in communication and transportation have contributed to achieve a tremendous growth in FDI flows in the world since the 1980s (Moosa, 2002). Moreover, the integration of countries has been accelerated by globalisation since the 1980s. The other important reasons behind the increase in FDI flows in the world are as follows:

- The opening markets of Central and Eastern Europe to foreign investors (UNCTAD, 1991).

- The significant increase in the participation of Japanese MNCs to the world's FDI flows as a result of declining labour cost (Dunning, 1993).

- The rising FDI inflow in the US due to the depreciation of US $ (Dunning, 1993).

- The ratio of the developing countries' FDI stock to the world's FDI stock has increased since the 1980s (UNCTAD, 2003).

- The raise in the share of FDI inflows in the service sector (especially in insurance, financial intermediaries, tourism and advertisement sectors) (UNCTAD, 2003).

- The increase in the bilateral and multilateral agreements between countries and the mergers and acquisitions agreements among companies (UNCTAD, 2003).

- The perception of the importance of FDI flows in the world. Thus, governments have increased their number of incentives and promotion and have accelerated the sales of

public companies in order to attract more foreign investors (UNCTAD, 1991; Dunning, 1993 and UNCTAD, 2003).

Average FDI inflows reached US$ 57 billion in the world during 1980-85. At the same time, almost US$ 40 billion FDI inflows, which were more than two-thirds of the world's FDI inflows, were directed to developed countries. Thus developing countries only attracted less than one-third of the world's FDI inflow which was equivalent to nearly US$ 18 billion. In the case of growth of FDI inflow, once again, the picture is completely different than the volume of FDI inflows. Developing countries achieved tremendous growth in FDI inflows by 28% on average during 1980-85 whereas developed countries achieved only 5 % growth in FDI inflows. Thus, developed countries had achieved 35% growth in the FDI inflow on average from 1986 to 1990 but the growth dropped to 21% in developing countries.

In the second half of the 1980s, the growth of world-wide inflows of FDI was two times more than that of total export. The unprecedented growth in FDI inflows in the world can be described by three factors. These are positive expectations about economic growth rates for most of the countries, strong recovery from the 1980s recession at the second stage of the 1980s and an acceleration of the implementation of liberal economic policies.

Table 4: FDI Outflow in the World (Million US $) (1980-2007)

Year	World	*World Δ*	DC	*DC Δ*	LDC	*LDC Δ*
1980	51550	-	48397	-	3153	-
1981	51503	*0%*	49932	*3%*	1572	*-50%*
1982	27310	*-47%*	24802	*-50%*	2508	*60%*
1983	37381	*37%*	35373	*43%*	2009	*-20%*
1984	50120	*34%*	47746	*35%*	2374	*18%*
1985	61975	*24%*	58063	*22%*	3912	*65%*
1986	96879	*56%*	91751	*58%*	5128	*31%*
1987	141413	*46%*	134712	*47%*	6701	*31%*
1988	180296	*27%*	168273	*25%*	12023	*79%*
1989	231755	*29%*	212011	*26%*	19743	*64%*
1990	239111	*3%*	227183	*7%*	11909	*-40%*
1991	200464	*-16%*	186964	*-18%*	13486	*13%*
1992	204054	*2%*	179250	*-4%*	23238	*72%*
1993	241964	*19%*	201578	*12%*	39342	*69%*
1994	287887	*19%*	240034	*19%*	47533	*21%*
1995	361562	*26%*	305930	*27%*	55007	*16%*
1996	398358	*10%*	333388	*9%*	64021	*16%*
1997	476146	*20%*	398999	*20%*	73724	*15%*
1998	688629	*45%*	636647	*60%*	50584	*-31%*
1999	1088065	*58%*	1017198	*60%*	68579	*36%*
2000	1231639	*13%*	1093665	*8%*	134784	*97%*
2001	751297	*-39%*	665694	*-39%*	82869	*-39%*
2002	537424	*-28%*	483157	*-27%*	49640	*-40%*
2003	562760	*5%*	507040	*5%*	45039	*-9%*
2004	920151	*64%*	786004	*55%*	120008	*166%*
2005	880808	*-4%*	748885	*-5%*	117579	*-2%*
2006	1323150	*50%*	1087186	*45%*	212258	*81%*
2007	1996514	*51%*	1692141	*56%*	253145	*19%*

Source: UNCTAD (Columns in italic letters were calculated by the author). Δ indicates the growth of FDI inflow and outflow in the world. DC and LDC denote developed and less developed countries, respectively.

Apart from the FDI inflows, by the 1980s, the growth of FDI outflow and FDI outflow stock was positive in the world. During 1980-1985, the average growth of outward FDI was around 5% annually in the world. The average growth of FDI inflow was higher than that of FDI outflow in developing countries. Thus, the average growth of FDI outflow in developing countries was 14.6%, annually. In the period of 1986-1990, the average growth of outward FDI reached to a peak point by achieving 32%, annually. Therefore, by the 1980s, the

contribution of developing countries started to be clear relative to previous periods on a global level. However, the share of FDI outward stock was still not sufficient and was less than one-tenth of the world's FDI outward stock in 1990. Moreover, the increasing number of developed and industrialised countries as source country, especially Japan, Hong Kong and Singapore is another factor behind this growth. The reason behind the unparalleled growth of FDI outflow from these countries was an appreciation of their domestic currencies against foreign exchanges associated with the current account surpluses (UNCTAD, 1991). As a result, the main source of the increasing FDI outflows in the world was still developed countries[13].

Table 5: The Growth of FDI Inflow and Outflow in the World

Year	FDI Outflow			FDI Inflow		
	World Δ	*DC Δ*	*LDC Δ*	*World Δ*	*DC Δ*	*LDC Δ*
1981-1985	*0.10*	*0.10*	*0.14*	*0.02*	*-0.01*	*0.36*
1986-1990	*0.32*	*0.33*	*0.33*	*0.32*	*0.35*	*0.21*
1991-1995	*0.10*	*0.07*	*0.38*	*0.13*	*0.09*	*0.28*
1996-2000	*0.29*	*0.31*	*0.26*	*0.33*	*0.41*	*0.18*
2001-2005	*-0.01*	*-0.02*	*0.15*	*-0.03*	*-0.06*	*0.08*

Source: UNCTAD (Columns in italic letters were calculated by the author). Δ indicates the growth of FDI inflow and outflow in the world. DC and LDC denote developed and less developed countries, respectively.

Despite the distinct increases in the FDI inflows and outflows in the world in the 1980s, the FDI inflows reduced and also the average growth rate of FDI outflow was around -4 % in the world annually throughout the period of 1990-1992. A slowdown in the biggest economies and falls in outflows from Western Europe and Japan explain the reduction of FDI flows in this period (UNCTAD, 1993). Thus, the average growth of FDI inflows in the world was annually 13 % during the period of 1991-1995 while the average growth was 32 % from 1986

---

[13] Even, in 1990, 91% of the world's FDI outflow stock was realised by the developed countries.

to 1990 as seen in Table 5. In the following years, from 1996 to 2000, the upward trend of the FDI inflows in the world continued. Therefore, 33 % of the average growth of FDI inflows in the world was achieved. 23% growth in FDI inflow and 20% growth in FDI outflow in the world on average throughout the 1990s can be explained by following reasons: (1) a better investment climate as a result of the investment promotion and protections for foreign investors, (2) the acceleration of the implementation of privatisation and deregulation around the world, (3), the increase in the number and volume of mergers and acquisitions in the world and (4) the implementations of new policies such as promotion and protection of FDI, especially at the end of 1990s (UNCTAD, 1993).

After the nine years upward trend, from 1993 to 2000, FDI flows in the world dramatically reversed at the beginning of the 2000s (UNCTAD, 2004) Thus, the net growth rates of the FDI flows dramatically decreased to -41 %, -24 % and -20 % in 2001, 2002, and 2003 respectively as shown in Table 4. Because of the negative growth in this period, the average growth of FDI inflows in the world was -3 % annually throughout the period of 2001-05. The situation was not different in terms of the world's FDI outflow. During 2001-03, the average growth of world's FDI outflow was more than – 10 %. Slowing economic growth in most of the countries and negative expectations about the recovery of economies are the reasons behind the dramatic declining of FDI inflows and outflows in the world. Moreover, the number and volume of mergers and acquisitions reduced dramatically between 2001 and 2003. As known, most of the FDI flows have been sourced by MNCs. Therefore, declining the number of mergers and acquisitions among the MNCs directly affected FDI flows, negatively. Finally, low profitability in most of the industries in the world also forced MNCs to delay or cancel their direct investments abroad (UNCTAD, 2004). Between 2004 and 2007, higher economic growth in the home and host countries, high profitability sectors, high

stock valuations are the other reasons (UNCTAD, 2008 and UNCTAD, 2009). However, the global crisis in 2008 and its negative impacts in 2009 led to a drastic fall in FDI inflows and outflows world-wide. Interestingly, while FDI inflows to developed countries fell from US$ 1358 billion in 2007 to US$ 962 billion in 2008, FDI inflows to developing countries reached US$ 620 billion in 2009 from US$ 529 billion in 2008. Despite the sharp decline in both FDI inflows to developing and developed countries in 2008, the ratio of FDI inflows to developing countries to world-wide FDI inflow reached to highest point, almost 43 %, since 1982.

Figure 1: Foreign Direct Investment, Net Inflows (% of GDP) in the World
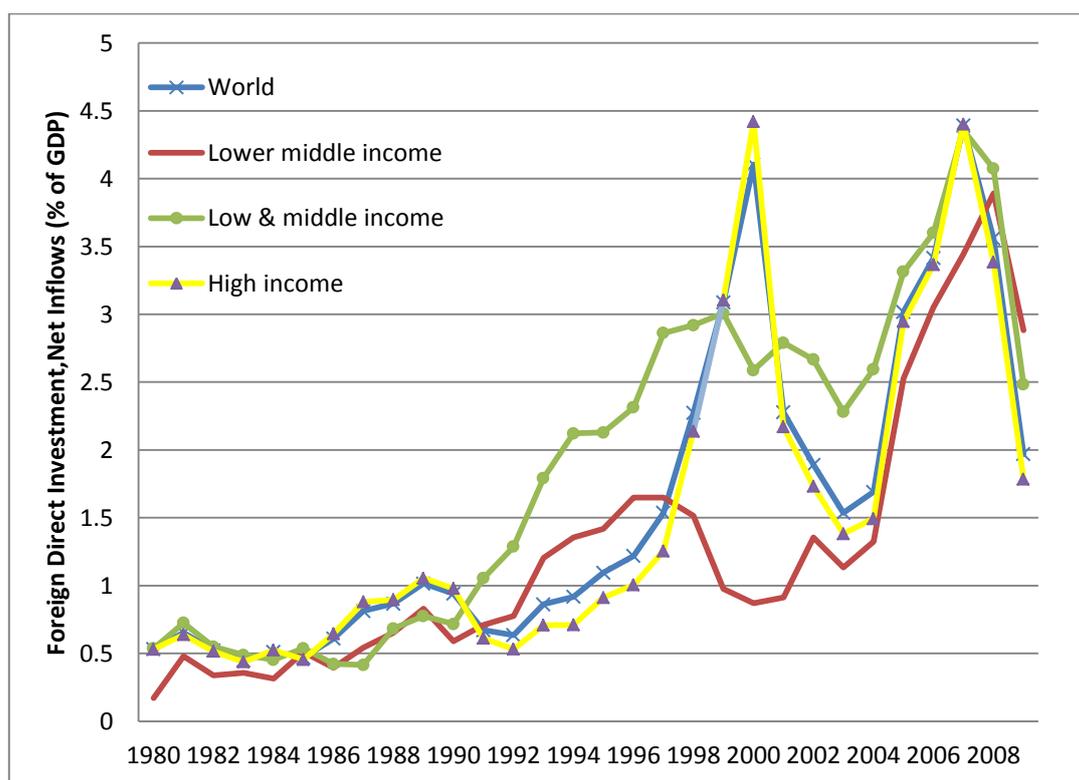
Source: World Bank Database

Figure 1 shows net FDI inflows as a percentage of GDP in the world for different income groups from 1980 to 2009. From 1980 to 1985, in all income groups, the growth of the net FDI inflows in the world was very small. However, at the second stage of the 1980s, the FDI inflows were in upward trend because of the positive expectations about high economic growth for most of the countries, even the net FDI inflow in the high income countries increased over 1%. This upward trend continued until 2000, except in the period of 1990-1991 and the net FDI inflows in the high income countries reached 4.4%. From 2000 to 2003, there was dramatic reduction in the net FDI inflows as a percentage of GDP in all income groups due to slowing economic growth in the world and negative expectations about the recovery of economies. Until the current global crisis, the net FDI inflows in all income groups continued to increase as seen in Figure 1.

2.3.3 The Pattern of FDI in Turkey

2.3.3.1 The Period of Ottoman Empire

FDI is of crucial importance for Turkey as a developing country (Yavan, 2006). The first foreign capital entered the Ottoman Empire with a bilateral trade agreement - which is called "Balta Limani Treat" - with Great Britain in 1838 (Kasaba, 1993). In the following years, 1840-1914, the Ottoman Empire signed similar trade agreements with other European countries. Due to the trade agreements, the Ottoman Empire started to impose 5 % tax for import products and 12 % tax for export products. The trade agreements also allowed foreign capital entry to the Ottoman Empire freely. Generally, the realised FDI inflow in the Ottoman

Empire was concentrated in the transportation, electricity and gas sectors. However, the volume of capital flows that the Ottoman Empire attracted was small. Foreign capital stock in the Ottoman Empire is only £ 118 million at the beginning of 1888 (Pamuk, 1987).

2.3.2.2 1923 to 1950

The approach of the Grand Assembly of Turkey to foreign investors was positive. In Turkey, the constituent assembly tried to encourage foreign investors by taking some liberal economic decisions in the 1st Izmir Economy Congress in 1923. Although the leader of the Republic of Turkey - Mustafa Kemal Ataturk - was very conservative about foreign capital, he said that "Foreign investment would be a necessary instrument for reconstructing the infrastructure of Turkey". However, there were two limitations for foreign investors to deal with. According to the decisions of the 1st Izmir Economy Congress, foreign investors should esteem Turkey's law and should not build a self-monopolistic position in order to get investment permission. Therefore, these limitations did not allow foreign investors to get permission to invest in electricity, gas, transportation, communication sectors.

Throughout the period of 1923-29, 66 new foreign companies invested in Turkey. Thus, the number of foreign companies jumped from 94 to 160 within 6 years (Yavan, 2006). Newly opened foreign companies were mostly of French and English origin and the main activity of such companies were to import raw materials to the domestic market. Therefore, foreign companies invested in Turkey in order to avoid the cost of tariff over its export products. Therefore, the most important determinant of FDI inflows in the 1920s was the

implementation of a tariff on import in Turkey. However, the liberal decisions did not satisfy foreign investors to invest in Turkey throughout the 1920s. Thus, the volume of foreign capital could not be attracted as expected (Turkyilmaz, 2009). Subsequent governments (from 1930 to 1950), however, were more conservative towards foreign investors because they did not perceive the importance of foreign capital and even worried about foreign investors. Moreover, they described the foreign investors as imperialist until the 1950s. The other reasons behind the low FDI inflow attraction are the global economic crisis in 1929 and its negative impact on the Turkish economy during the 1930s; the interruption of foreign capital due to WW II; the nationalisation of some foreign companies during the period of 1929-45 due to the nationalist movement (Tezel, 1994)[14].

2.3.2.3 1950 to the Beginning of Globalisation

In the 1950 general election, the Democrat Party came to power in Turkey after taking more than 53% of total votes. Thus, at the leadership of the Party, the perspective of the Turkish government to foreign capital, once again, changed[15]. According to the new government, the foreign investment was the best option for Turkey to achieve sustainable economic growth. Consistent with these expectations, the private sector was supported. Therefore, some incentives were provided for the foreign investors by the Grand National Assembly of Turkey in 1950. The most important incentive is that the law extended the right of transfer of the profits of foreign investors. This law is called "Law No. 5583." Moreover, foreign companies were guaranteed by the Turkish government in accordance with the law. However, the

---

[14] From 1928 to 1945, 24 foreign companies were nationalised.

[15] At that year, Turkey became the member of World Bank (WB) and International Monetary Fund (IMF). Turkey tried to open up the economy in order to achieve sustainable economic growth with the Democrat Party leadership and the encouragement of the IMF and the WB.

desired level of foreign capital could not be attracted, especially some specific sectors. Then, the promotion of foreign capital act No. 5821 was enacted and the law allowed foreign capital in energy, mining, transportation and tourism sectors, but because of the limitations on profit transfer of foreign companies in other sectors of the Turkish economy, once again Turkey could not attracted foreign capital as expected. In other words, the incentives did not encourage foreign investors to invest in Turkey. As a result of these incentives, the law on the encouragement of foreign capital (No.6224) was acknowledged by the Grand National Assembly of Turkey on 18.01.1954. The law was one of the most liberal foreign investment acts in the world until 1954. The main aims of the law were to encourage foreign investors to invest in Turkey and to minimize the shortage of foreign exchange. Even if the 1980s and 1996 term governments made some changes to the law, the law remained in force in Turkey until 2003[16]. The contribution of the law for attracting FDI inflows cannot be underestimated because although the FDI stock was only US$ 2.8 million in 1953, permitted FDI inflows in 1954 was US$ 2.2 million. Thus, FDI stock reached up to US$ 5 million in 1954 as shown in Table 6. Even though, the law repealed the limitations of profit and dividend transfers, the law was used as an instrument to reject or delay the investment permissions of foreign investors by the term governments because , according to the law, foreign investments could get permission if such investments were conducive to Turkey's economic development. Therefore, sustainable growth in FDI inflows could not be achieved. Even, the growth of permitted FDI inflow in Turkey was negative in 1955, 1957, 1958, 1960 and 1961. The main reasons behind the unsustainable growth in the FDI inflows were the lack of democratic culture, ethnic problems, bureaucratic barriers, political instability (especially the second half

---

[16] More details about the FDI laws in Turkey were taken to account in the section of Foreign Direct Investment Law Framework.

of 1950s), economic instability, lack of skilled workers, lack of infrastructure and a coup

d'état in 1960.

Table 6: Permitted FDI Inflow and FDI Stock in Turkey (1954-1969) (Million US $)

Year	Permitted FDI Inflow	Growth of Permitted FDI Inflow	FDI Stock
Cumulative until 1954	2.8		2.8
1954	2.2		5
1955	1.2	-45%	6.2
1956	3.4	183%	9.6
1957	1.3	-62%	10.9
1958	1.1	-15%	12
1959	3.4	209%	15.4
1960	1.9	-44%	17.3
1961	1.2	-37%	18.5
1962	4.2	250%	22.7
1963	4.5	7%	27.2
1964	11.9	164%	39.1
1965	11.6	-3%	50.7
1966	9.7	-16%	60.4
1967	9	-7%	69.4
1968	13.9	54%	83.3
1969	13.2	-5%	96.5

Source: The Central Bank of the Republic of Turkey

The situation got worse in terms of FDI attraction for Turkey in the 1970s. The ratio of FDI

inflows in Turkey to total FDI inflows in developing countries had dropped dramatically

throughout the 1970s. FDI inflows in Turkey accounted for only 1.5% of LDC's FDI inflows

in 1970 but, the ratio dropped to 1.2% in 1975 and 0.2% in 1980. A rapid increase in the

socialist movement in Turkey during the period of 1968-71[17], the general election in 1973,

the intervention of Cyprus in 1974 and bureaucratic barriers for foreign investors were the

factors that discouraged foreign investors to invest in Turkey. Thus, sustainable FDI inflows,

once again, could not be achieved by Turkey during the 1970s as shown the Figure 2.

---

[17] Socialist movement in Turkey started at the same time with Europe in 1968. The movement had changed the point of view of Turkish community to the foreign investors.

Besides, the growth of permitted FDI inflows was negative in 1974, 1975, 1976 and 1979 in Turkey. Until the beginning of the 1990s, Turkish governments did not perceive that the existence of regulation about the FDI flows alone is not enough to accelerate the growth of FDI inflows in Turkey.

Figure 2: Growth of Permitted FDI Inflow in Turkey
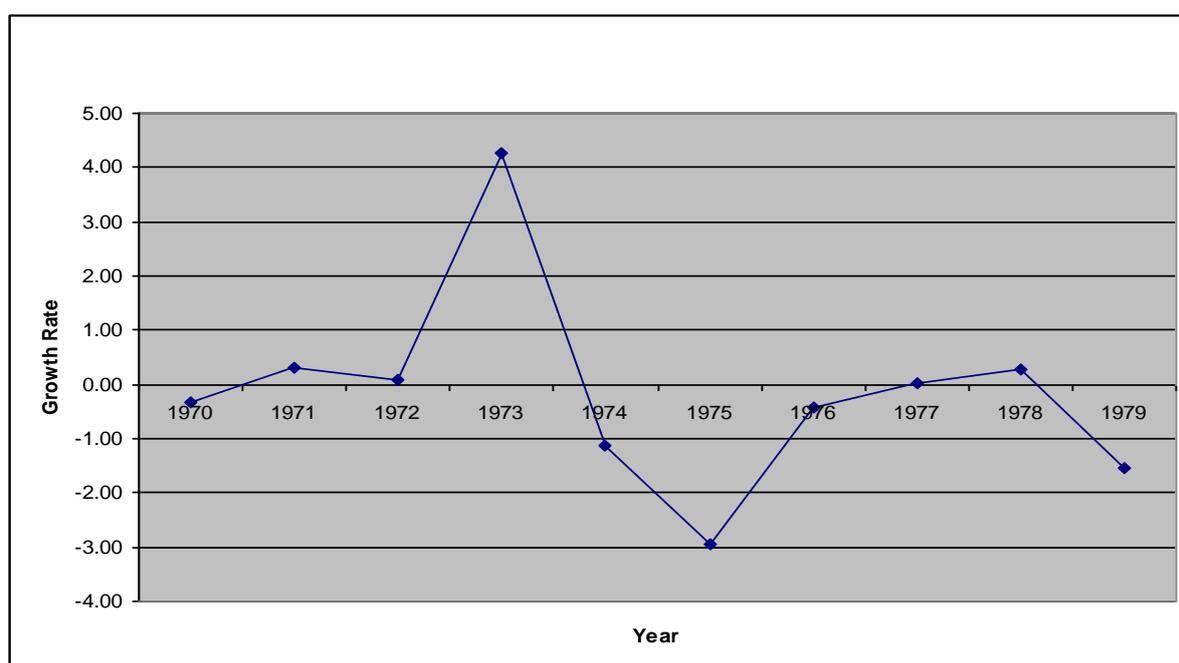
Source: The Central Bank of the Republic of Turkey

2.3.2.4 The Beginning of Globalisation to Present

Turkey did not face any difficulty to adapt itself to the liberalisation process in the world especially in the second half of the 1980s. The liberalisation process in Turkey started with the implementation of the Economic Stabilisation program, which was supported by the IMF

and World Bank on 24 January 1980. According to the Economic Stabilisation program, the intervention of Turkish governments in monetary policy and the finance system would be minimised. Foreign investors are willingly to invest where government intervention is minimal compared to a country where the government regularly intervenes to finance system and economy. Therefore, such an attempt in Turkey also aimed to encourage foreign investors to invest in Turkey.

Moreover, Turkey also aimed to restructure its economy by using two basic instruments based on the Economic Stabilisation program. The first one was the removal of limitations over trade and foreign exchange while the other one was the preparation of a new law to facilitate the entry of foreign capital and technology to Turkey. Furthermore, as a part of liberalisation process during the 1980s, (1) capital account was liberalised; (2) lending and borrowing among Turkish banks were permitted when an interbank market was established; (3) the Istanbul Stock Exchange was reopened; (4) the sales of government securities began (Denizer, 1997 and Erdilek, 2003). In addition, another improvement during the 1980s was the acknowledgment of the foreign capital decree by the parliament. The decree came into force on 25.10.1980[18]. At the same day, the Foreign Capital Office came under the supervision of prime minister. The main aim of the office was to accelerate the process of foreign investments in Turkey[19].

---

[18] More information about the Foreign Capital Decree was explained in the next section.
[19] However, the name of the office has changed to the General Directorship of Foreign Capital and has come under the supervision of the Treasury Undersecretary since 1994.

In the 1980s, as a part of liberalisation process, the existing FDI law (No. 6224)[20] was revised to facilitate foreign investments in Turkey. The act mainly consisted of the restructuring of foreign capital policies, the reduction of bureaucracy barriers, tariff and quotas, the acceleration of privatisation, international agreements which related to the incentives and security of investment (Karluk, 2000). Despite some positive changes in the FDI law (No. 6224) for foreign investors, Turkey failed to attract FDI inflow as expected[21]. Therefore, the volume of FDI inflows that Turkey attracted remained very small compared to similar size developing countries. Although the liberalisation of the finance sector at the end of the 1980s contributed to net FDI inflows, the growth of FDI inflows had been flexible at the following years until 2004 *(*Erdilek,1988).

Moreover, the enactment of the Build-Operate-Transfer law in 1984 allowed both domestic and foreign capital to enter the infrastructure and energy sectors in Turkey (Ongun, 2001). The Turkish government in 1989 approved a new foreign investment act related to the stabilisation of Turkish Lira which led to an increase in international investment but especially in portfolio investment.

---

[20] More information about the revised FDI law was provided in the Foreign Direct Investment Legal Framework section.

[21] However, acknowledging the liberal laws and attempting to accelerate privatisation do not make sense if there is difficulty in the implementation of these. This accomplished with macroeconomic instability, unwillingness of the term government about the participation of foreign investors to the domestic market, inadequate infrastructure; the gradually increase in uncertainty; the lack of accounting standards, lack of property rights, especially in copyright, trademark and patents, undesirable privatisation implementation and lack of legal standards (Karluk, 2000 and Erdilek, 2003).

Table 7: FDI Inflow in Turkey (Million US $) (1980-1990)

	Permitted FDI	Actual FDI	Actual FDI / Permitted FDI
1980	97	35	*36%*
1981	337	141	*42%*
1982	167	103	*62%*
1983	102	87	*85%*
1984	271	113	*42%*
1985	234	99	*42%*
1986	364	125	*34%*
1987	655	115	*18%*
1988	820	354	*43%*
1989	1511	663	*44%*
1990	1861	684	*37%*

Source: The Undersecretariat of Treasury (Columns in italic letters were calculated by the author)

Apart from FDI inflows in Turkey, throughout the 1980s and 1990s, there was huge gap between the actual FDI inflows and permitted FDI inflows in Turkey. During 1980-84, only an average 53% of permitted FDI inflows were realised. While the total permitted FDI inflows was nearly US$ 1 billion during the 1980-85, the total FDI inflows that Turkey attracted was almost half of the permitted one. As seen in Table 7, the ratio got worse during the 1985-90 and the ratio, thus, dropped to 36%. Even if the permitted FDI inflows in Turkey jumped from US$ 364 million in 1986 to US$ 655 million in 1987, the realised FDI inflows were only 18% of the permitted FDI inflows. The gap in 1987 was the biggest in Turkey's FDI history.

In general, there are mainly two reasons behind the arising gap between the actual and permitted FDI inflows in the literature. Firstly, the situation arises when a foreign investor takes permission to make an investment and the investor could not complete his investment within a year. Secondly, the situation arises if the permission is taken by the investor and the

investor backs down from making investment due to any reason (HMYSGM, 2002). During the 1990s, the gap between permitted and actual FDI inflows was wider than that in the 1980s on average. As shown in Table 8, the ratio of the realised FDI inflows to permitted FDI inflows dropped to 32% in 1995 and 24% in 1996 due to the negative impact of 1994 banking crisis and macroeconomic and political instability in Turkey. On the other hand, the permitted FDI inflows jumped from US$ 1.47 billion in 1994 to US$ 2.93 billion in 1995 because the term government was struggling to attract foreign capital such as FDI and foreign portfolio investment. Hence this forced the government to accelerate the permission of foreign projects in Turkey.

As a result, dramatic external Gulf Crisis in 1991, East Asian Crisis in 1997, Latin America in 1998, and Russian Crisis in 1999) and internal crisis (banking crisis in Turkey in 1994), ethnic problems, political and macroeconomic instability, the lack of provision of motivation and guarantees during the 1990s were the main reasons behind the delaying or cancelling of investments by foreign investors in Turkey[22].

---

[22] The main reason of the lack of provision of motivation and guarantees was the unwillingness of Turkish governments.

Table 8: FDI Inflow in Turkey (Million US $) (1990-1999)

Years	Permitted FDI inflow	Actual FDI inflow	*Actual FDI / Permitted FDI*	FDI inflow in Developing country	*The ratio of Turkey's actual FDI to LDC FDI Inflow*
1990	1861	684	*37%*	35087	*1.95%*
1991	1967	907	*46%*	39778	*2.28%*
1992	1819	911	*50%*	53128	*1.71%*
1993	2063	746	*36%*	76883	*0.97%*
1994	1477	636	*43%*	103687	*0.61%*
1995	2938	934	*32%*	115973	*0.81%*
1996	3836	914	*24%*	147077	*0.62%*
1997	1678	852	*51%*	190723	*0.45%*
1998	1646	953	*58%*	190751	*0.50%*
1999	1699	813	*48%*	228180	*0.36%*

Source: The Treasury Undersecretary (Columns in italic letters were calculated by the author)

The inward FDI potential index and inward FDI performance index in Table 9 show clearly the position of Turkey in the world in case of the foreign capital attractions throughout the 1990s. Throughout the period of 1988-1999, Turkey was ranked between 58th and 89th according to the Inward FDI Potential Index of UNCDAT as shown in Table 9. At the same period, Turkey found a position between 70th and 126th in the inward FDI performance index. These rankings clearly demonstrate that Turkey could not use its potential to attract an adequate amount of MNCs to invest in Turkey. Another interesting episode is the position of Turkey in the outward performance index. After the allowance of FDI outflows from Turkey, in other words since 1987, Turkey was ranked between 87th and 76th during the 1988-1994. Total net FDI outflow was around US$ 9 million which equal to 0.4% of the total net FDI inflows. Especially the 1994 banking crisis in Turkey triggered Turkish investors to invest abroad. While the net FDI outflows as a percentage of the net FDI inflow was 8% in 1994, the ratio reached to 90% in 2000. This became one of the reasons of the 2000 banking and 2001 economic crises in Turkey.

Table 9: Turkey's Inward FDI Potential and Performance FDI Scores and Ranking

	Inward FDI Potential Index Ranking	Inward Performance Index Ranking	Outward Performance Index Ranking
1988-1990	62	70	87
1989-1991	59	71	81
1990-1992	65	79	76
1991-1993	58	89	80
1992-1994	68	101	81
1993-1995	75	104	79
1994-1996	74	109	83
1995-1997	80	115	70
1996-1998	82	126	72
1997-1999	81	122	68
1998-2000	78	123	56
1999-2001	89	112	57

Source: UNCTAD

Apart from the gap between the actual and permitted FDI inflow in Turkey, the ratio of FDI inflows in Turkey to FDI inflows in developing countries was also on the downward trend during 1990s as seen in Table 6. While the developing countries were achieving high growth rates in FDI inflows in the 1990s, very limited FDI inflows had been directed to Turkey. In 1991, FDI inflows in Turkey accounted for 2% of total FDI inflows in developing countries. The ratio dropped to 0.97% in 1993, 0.81% in 1995, 0.45% in 1997 and 0.36 % in 1999. The main reasons behind the continuous downward trend in the ratio were both external and internal crises during the 1990s as explained before. Until the beginning of the 2000s, Turkey was not a member of the World Association of Investment Promotion Agencies (WAIPA) (Erdilek, 2003) so no official promotion has been available for foreign investors even though there was plenty empirical works which proved the importance of FDI inflows in developing countries. It is not astonishing that the Investment Support and Promotion Agency of Turkey was found only few years ago in 2007 (Erdilek, 2003).

The same situation had seen in the ratio of FDI inflow to GDP (current US$). Not surprisingly, the ratio had never been more than 1% from 1970 to 2000. However, there has been impressive growth in FDI inflows since 2001 despite the 2001 financial crisis. The ratio jumped to 2% in 2001 and then 4% in 2006 due to the sustainable growth in macroeconomic indicators, increases in the investment incentives and promotions, new FDI law and efficiently implemented privatisation policies. The ratio of Turkey's average FDI inflows to GDP was only 0.1%, 0.2% and 0.3% in the 1970s, in the 1980s and in the 1990s on average, respectively. However, the ratio increased 1.4 % during a 6 years period (from 2000 to 2006).

Table 10 : Top Ten FDI Recipient Country and Turkey (2003-2006) (Billion US $)

	2003			2004	
Rank	**Country**	**FDI**	**Rank**	**Country**	**FDI**
1	China	53.5	1	USA	135.8
2	USA	53.1	2	China	60.6
3	France	42.5	3	UK	56
4	Belgium	33.5	4	Belgium	43.6
5	Germany	32.4	5	Australia	36
6	Spain	25.8	6	Hong Kong	34
7	Ireland	22.8	7	France	32.6
8	Netherlands	21	8	Bermuda	25.5
9	UK	16.8	9	Spain	24.8
10	Switzerland	16.5	10	Mexico	22.4
53	Turkey	1.8	38	Turkey	2.9
	2005			2006	
Rank	**Country**	**FDI**	**Rank**	**Country**	**FDI**
1	UK	193.7	1	USA	175.4
2	USA	101	2	UK	139.5
3	France	81.1	3	France	81.1
4	China	72.4	4	Belgium	72
5	Netherlands	41.6	5	China	69.5
6	Germany	35.9	6	Canada	69
7	Belgium	33.9	7	Hong Kong	42.9
8	Hong Kong	33.6	8	Germany	42.9
9	Canada	28.9	9	Italy	39.2
10	Spain	25	10	Luxembourg	29.3
23	Turkey	9.8	18	Turkey	20.1

Source: *Foreign Direct Investment in Turkey (2007) and The Undersecretariat of Treasury*

The main difference between the AKP government and old ones is the perception of the importance of FDI and positive impacts of FDI to a host country. One of the most important regulations that the AKP government prepared is the preparation of a new and comprehensive FDI law because the FDI law (No.6224) did not satisfy the expectation of neither Turkey nor foreign investors. Therefore, a comprehensive and internationally acceptable FDI law was prepared and then came into force in June 2003[23]. Especially after 2002, the acceptance of new policies, related with structural reform in the finance sector, was accelerated by the AKP government (such as the No. 4875 FDI law in 2003, restructuring the banking system, the acceleration of privatisation and so on) with the leadership of Kemal Dervis. Furthermore, the government has regularly organised meetings with big company managers to get a better business environment in Turkey. These led to an increase in the ratio of Turkey's FDI inflows as a percentage of LDC's FDI inflows up to 4.5 % in 2007. Therefore, Turkey has started to be competitive for attracting FDI inflows in the global arena. The improvement of Turkey in terms of FDI inflow attraction is seen well in Table 10. Moreover, while Turkey was in 53rd position in the ranking in 2003, the volume of FDI inflows was only US$ 1.8 billion. In the following years, the position of Turkey in top FDI recipient countries reached 38th in 2004 (with attracting US$ 2.9 billion), 23rd in 2005 (with attracting US$ 9.8 billion) and 18th in 2006 (with attracting US$ 20.1 billion). In addition, according to the records of the World Investment Report 2008, four of the largest six mergers and acquisitions agreements in the finance sector in Balkans were appeared by the merger or acquisition of the banks in Turkey during 2006-2007. On the other hand, while Turkey was breaking its historical record level of FDI inflows by attracting US$ 22 billion in 2007, the position of Turkey in the global arena dropped to 25th. The FDI inflows to Turkey dropped from the historic record level in 2007 to US$ 18 billion in 2008 (the ranking of Turkey in the global arena was 20th in terms of FDI

---

[23]The more details of the new FDI law (No. 4875) were taken into account in the next section.

inflow, surprisingly), representing a 20 % decline. The growth of FDI inflow got worse in 2009 with attracting only US$ 7.6 billion in Turkey. Global economic crisis and external and internal tensions in Turkey are the reasons behind the dramatic fall in FDI inflows to Turkey.

2.3.3 FDI Legal Framework

Although the history of regulations about FDI goes back to the Ottoman Empire, a comprehensive FDI law firstly came into force in 1951. As explained in the previous section, first foreign capital entered to the Ottoman Empire with the bilateral trade agreement with Great Britain in 1838. After the establishment of the Republic of Turkey, the protection of value of Turkish currency law (No. 1667) in 1930 and the No.14 decree in 1947 came into force in Turkey. Some substance of the law and decree were related to FDI. According to the No.14 decree, foreign capital could enter the industry, agriculture and transportation sectors if a foreign investor gets permission from the Ministry of Finance in Turkey. The permission would be provided if the investor contributed to the economic development of Turkey. When democrat party came to power in 1950, the perspective of government totally changed, especially for foreign investors. This political change - from a nationalist perspective to a liberal one - led to significant changes in the investment environment in Turkey. As explained in the previous section, during the 1930s and the 1940s, the governments nationalised plenty foreign companies, instead of trying to attract foreign investors to invest in Turkey. The first law about the FDI was acknowledged on 08.09.1951 by the parliament and the law was called "foreign capital investment incentive law (No. 5821)". The law (No. 5821) allowed foreign investors to invest in industry, energy, mining, transportation and

tourism sectors in Turkey (Tuncer, 1986). In addition, the law allowed foreign companies or investors to transfer their 10% profit (Alpar, 1977).

On 18.01.1954, the foreign investment incentive law (No. 6224) came into force because pervious law - the foreign investment incentive law (No. 5821) - did not attract foreign investors to Turkey as expected. The improvements in the investment environment with the foreign investment incentive law (No. 6224) are as follows:

- Foreign investors would get same rights as domestic investors.

- There would be no limitation to transferring the profits of foreign investors.

- The permissions and controls would be provided by the committee of Foreign Investment Incentive.

- Foreign Investment must contribute the development of Turkey and must be made where the activity is possible because some sectors were not possible to make foreign investment. Industry, mining, energy, transportation and tourism were the sectors that foreign investors could make an investment

The FDI law (No. 6224) was more liberal relative to other developed and developing countries in 1954. However, there was still a long procedures list to complete in order to get permission to invest in Turkey. A foreign investor firstly had to apply to the Ministry of Trade (Tuncer, 1986). The decision would not take more than 15 days. If it was positive, the Execution Deputy Commission had the authority to cancel the decision within 30 days. Therefore, the permission of the Execution Deputy Commission was another difficulty for

making an investment by foreign investors to Turkey (Tuncer, 1986). Another limitation is a sectoral restriction for foreign investors. If the public or private company had a monopolistic position in its sector (such as telecommunication, water supply, electricity and gas supply sectors), the foreign investors cannot own more than 50% share of Turkish companies. Therefore, to get permission in these areas as a foreign investor was very difficult[24]. Apart from this limitation, the FDI law (No. 6224) did not allow the foreign investors to enter an existing partnership, to establish a company and to open a branch without getting the permission of the Undersecretariat of the Treasury. In other words, a getting permission and visa from the Undersecretariat of the Treasury would be compulsory to make an investment if an investor was foreign. Even, the existing foreign company had to apply for the permission of the Undersecretariat of the Treasury in the case of an increase in the capacity or share of a company, making a new investment, or buying new machines and acquisitions[25].

The decisions of 24.01.1980 demonstrated that foreign capital is vitally important for the development of Turkey. At the same direction of the decision, the provision of incentives for foreign investors increased and also the foreign capital decree was acknowledged on 25.01.1980. Moreover, the office of foreign capital was found at the same time. During 1980-85, there were distinctive increases in the permission of FDI inflows, especially in the service sector. For instance, while there were 4 foreign banks in Turkey in 1980, the number of the foreign banks in Turkey reached to 23 at the end of 1980s (Denizer, 1997). Some changes were done in the Foreign Capital Decree (No.8/168) in 1986 and 1992. Finally, the Foreign Capital Decree (No.95/6990) came into force on 07.06.1995.

---

[24] This limitation does not include in the new of FDI law (No. 4785).
[25] However, the new law (No. 4785) has abolished all the complicated bureaucracy barriers.

At the end of 2000 and the beginning of 2001, the erupting banking and economic crises forced the AKP government to make reforms in the economy. Thus, the Economic Policies report was issued by the government in 2001. According to the report, private sector and foreign investors would be encouraged. Moreover, the necessity of the stability of macroeconomic indicators, implementation of privatisation, FDI law and transparency in order to attraction foreign investment was underscored in this report. Thus, the new FDI law (No. 4785) came into force in 2003. The aims of the FDI law (No. 4785) are to encourage FDI investors and to achieve international standards in term of the legal structure of FDI.

The other improvements with implementation of the new FDI law (No. 4785) are as follows:

- The definition of FDI was changed. The new FDI definition refers to "establishing a new company or branch of a foreign company by foreign investor" (The Undersecretariat of Treasury, 2003, page 1) and "share acquisitions of a company established in Turkey (any percentage of shares acquired outside the stock exchange or 10% or more of the shares or voting power of a company acquired through the stock exchange)" The Undersecretariat of Treasury, 2003, page 1). Therefore Turkey had an internationally acceptable FDI definition.
- The achievement of equality between domestic and foreign investors.
- The minimization of nationalisation of foreign investor's investment.
- The allowance of the foreign investors to have their own property without any restriction like Turkish citizens.

- The abolishment of the limitation of importable products - which exists in Turkey - .

- The permission to foreign investors to employ foreign workers with a requirement of a work permit.

- The elimination of the minimum capital limit.

- The removal of the limitation of transferring foreign investors' profits,

- The removal of the sectoral restriction to make an investment by the foreign investors (IGEME, 2005).

2.3.4 Foreign-owned Companies and its Sectoral and Regional Distribution

The scope of the cumulative number of foreign owned companies in Turkey was upward during the 1980s. By 1980, as seen in Table 7, the cumulative number of foreign owned companies was only 78. Between 1980 and 1984, the number of new foreign-owned companies did not excess 70, annually. However, tremendous growth in the cumulative foreign owned companies, which was 42 % annually, was achieved from 1985 to 1990. The number of new foreign-owned companies was between 173 and 336 during the period. The trend of the cumulative number of foreign owned companies was upward from 1990 to 2003 even though the growth of number of foreign companies had reduced. From 1980 to 2003, the upward trend in the cumulative number of foreign owned company could be misleading because the number and growth of foreign affiliate companies in the Centre and East European countries had been more than that in Turkey. In 2009, the number of foreign owned companies reached to 23,620.

Table 11: Regional Distribution of Foreign-owned Companies in Turkey in 2007

Region	Number of Companies	Percentage of Total
Marmara	9086	60.8
Mediterranean	2273	15.2
Aegean	2146	14.3
Central Anatolia	1180	7.9
Black Sea	118	0.8
South Eastern Anatolia	103	0.7
Eastern Anatolia	49	0.3
Total	14955	100

Source: The Undersecretariat of Treasury

In case of the regional distribution of foreign-owned companies, Marmara is the most attractive region in Turkey. The cumulative number of foreign-owned companies in Marmara was 9,086, which was a more than 60% of total number of foreign-owned companies in Turkey, in 2006 as shown in Table 11 because Marmara is the most developed area and finance centre in Turkey. The following regions were Mediterranean, Aegean and Central Anatolia with 2273, 2146 and 1180 numbers of foreign-owned companies, respectively. Especially, the foreign owned companies in Black Sea, South Eastern Anatolia and Eastern Anatolia were 8%, 7% and 3% of total foreign owned companies in Turkey, respectively according to the Undersecretariat of Treasury's database. The main reasons for the small number of foreign companies in these regions are related to the Kurdish problem; the regions are isolated from government support and far from the capital (Ankara) and finance centre (Istanbul).

Table 12: Sectoral Distribution of the Foreign-owned Companies by Province in Turkey (1954-2007)

Sectors	Istanbul	Antalya	Ankara	Mugla	Izmir
Agriculture, hunting, fishing and forestry	69	58	17	13	33
Mining and quarrying	116	14	61	3	37
Manufacturing	2026	131	185	26	288
Electricity, gas and water supply	105	12	57	1	22
Construction	506	481	137	186	80
Wholesale and retail trade	3698	317	357	87	368
Hotels and restaurants	421	413	64	241	65
Transportation, storage and communications	959	225	61	124	68
Real estate, renting and business activities	1401	526	181	398	102
Other community, social and personal service activities	752	105	104	44	57
Total	10053	2283	1224	1123	1120
Service sector as a percentage of total	78%	91%	79%	96%	68%
Manufacturing as a percentage of total	20%	6%	15%	2%	26%
Agriculture, hunting, fishing and forestry as a percentage of total	1%	3%	1%	1%	3%
Mining and quarrying as a percentage of total	1%	1%	5%	0%	3%

Source: The Undersecretariat of Treasury

According to the Undersecretariat of Treasury database, Istanbul has been the most attractive province in case of FDI inflows. In 2007, the cumulative number of foreign affiliate companies was more than 10000. The following provinces were Antalya, Ankara, Mugla and Izmir with attracting 2283, 1224, 1123 and 1120 numbers of foreign companies, respectively. In Istanbul, there are more than 7842 foreign companies in the service sector. The followers, Antalya, Ankara, Mugla and Izmir, were far from Istanbul's performance with attracting 2079, 961, 1081, 762 numbers of foreign companies to its service sector respectively as shown in Table 12. The situation is not different in other sectors such as manufacturing, agriculture and mining. The foreign companies in the service sector were more than 90% of the total number of foreign companies in Antalya and Mugla in 2007. This means that almost all foreign companies are found in the service sector in these provinces. The ratio was 78% in

Istanbul. Surprisingly, the ratio of number of foreign companies in service sector in Mugla to the total is, is 96% much more than that in Istanbul, which is 78%. In all 5 provinces, less than 5% of the total number of foreign owned companies is directed to the agriculture and mining sectors in Turkey.

The large share of the FDI inflows to the Eastern and Central European countries have been realised by the European Union countries. This situation is not different in Turkey either. The majority of FDI inflows in Turkey have been directed from the European Union countries since the 1980s. The main reasons behind this are: (1) politic and economic integration, (2) distance between the EU and Turkey is not far to EU and (3) also information advantages of EU' MNCs about the sectors of Turkey. Hence, more than 75% of the Turkey's authorised FDI has been made by the European countries since the 1980s. The Netherlands, France, Germany, Belgium, the United Kingdom and Greece were conspicuous among the European countries. However, the contribution of the European Union countries in the total FDI inflow dropped to 68% while the share of FDI inflow, which was invested by American MNCs, increased up to 25% of the total FDI inflow in 2007 in Turkey. The FDI inflow to Turkey, which was realised by American and Asian countries, has not exceeded 30% since the 1980s because of the distance, the lack of relation and so on.

2.3.5   Sectoral and Regional Composition of FDI

2.3.5.1 Sectoral Composition of FDI in the World

Sectoral distribution of the world's FDI has evolved since WWII. The primary sector, traditionally including agricultural products, energy and mining, was a dominant sector in the FDI flows until end of WWII, especially in the developing countries. After WWII, the direction of the FDI flows shifted from the primary sector to the manufacturing sector in the world, especially developed countries. Even if the ratio of primary sector FDI to total FDI has reduced in the world, the amount of primary FDI (especially, petroleum, mining and quarrying sectors) has increased since the 1950s. The manufacturing sector had taken the biggest share of the world's FDI stock up to the middle of the 1980s. As shown in Table 13, while the share of the manufacturing sector in the world's FDI stock was almost 60% in 1970 in the developed countries, the share in the primary and the service sectors were around 16% and 24%, respectively. However, at the end of the 1980s, there was a tremendous alteration in the sectoral composition of the world's FDI stock as explained above. The structure of FDI flows, once again, started to change at the beginning of the 1980s in the world. The share of the service sector in the total FDI stock in the developed countries jumped from 23% in 1970 to 38% in 1980 and 48% in 1990. In developing countries, this situation is little different. The ratio of service FDI stock to total FDI stock increased from 23% in 1975 to 29% in 1990 in the developing countries (UNCTAD, 1993; UNCTAD, 2004).

Table 13: Sectoral Distribution of FDI Inflow Stock in the World (Billion US $)

Developed countries	1970	1975	1980	1985	1990		% 1970	% 1975	% 1980	% 1985	% 1990
Primary	12	17	18	39	94		16.44%	12.14%	6.72%	9.24%	9.11%
Secondary	44	79	148	195	439		60.27%	56.43%	55.22%	46.21%	42.54%
Tertiary	17	44	102	188	499		23.29%	31.43%	38.06%	44.55%	48.35%
Total	73	140	268	422	1032						
Developing countries	1970	1975	1980	1985	1990			1975	1980	1985	1990
Primary		7	17	31	46			20.59%	22.67%	24.03%	21.90%
Secondary		19	41	64	102			55.88%	54.67%	49.61%	48.57%
Tertiary		8	17	34	62			23.53%	22.67%	26.36%	29.52%
Total		34	75	129	210						

Source: UNCTAD

What is interesting in developing countries in term of the sectoral distribution of FDI is the share of the primary sector. While the share of the primary sector in the FDI stock was less than 10% in the developed countries, the share of primary sector in developing countries was more than 20%. Therefore, the structural change in the sectoral distribution of FDI flows in the developed countries was more distinctive than that in the developing countries during the 1980s. The reason behind the lately changing sectoral distribution of FDI flows in the developing countries were the late implementation of liberal policies, the lack of legal structure, the lack of infrastructure and so on.

The share of the service FDI in the world's inward FDI, which was around 65%, reached to a peak point, at the beginning of 2000 while the shares of primary and manufacturing sectors reduced to 5% and 30% respectively. Although there was a reduction in the share of the primary and the manufacturing sectors in the worlds FDI flows since the end of 1970s, the volume of the FDI flows in these sectors has increased in most of the countries (Dunning, 1993; UNCTAD, 1993 and 2004; Dicken, 1998).

The main reason behind the increase in the service FDI is the abolishment of restriction and bureaucratic barriers for foreign investors in the service sector because cultural, political or strategic reasons until the 1980s minimised the share of service sector in the world's FDI stock in both the developing and developed countries. The other reasons are: (1) the increases in demand in the sector; (2) the increase in the global privatisation process in the sector such as financial intermediaries, wholesale and retail trade, communication, telecommunication, electricity, water supply and construction (Daniels, 1993; UNCTAD, 2004) and (3) the increase in the number of multinational, relational and bilateral agreements covering FDI in the service sector (UNCTAD, 2004). Moreover, the increase in the number of outsourcing, franchising, licence agreement among firms and turnkey arrangement has led to an increase in the share of service FDI in the world's FDI stock (UNCTAD, 2004).

In the middle of the 1980s, especially the financial intermediaries (insurance and banking) and wholesale and retail trade were the dominant areas of service FDI taking 40% and 25% of the share, respectively. However, particularly construction, telecommunication, communication and transportation, electricity, water supply and business services sectors have increased their shares of service FDI since 1990s. Financial intermediaries and wholesale and the retail trade sectors FDI accounted for 29% and 18% of total service FDI in 2002, respectively (Daniels, 1993; Dunning, 1993; UNCTAD, 2004).

2.3.5.2 Sectoral Composition of FDI in Turkey

During the last 3 decades, more than 95% of the authorised FDI inflows in Turkey have been distributed into two sectors which are manufacturing and service. Thus, the authorised FDI inflows in the agriculture and the mining sectors had not exceeded 5% of the authorised FDI from 1980 to 2002 as shown in Table 14. While the manufacturing FDI accounted for 66% and 61% of total average authorised FDI in the 1980s and the 1990s respectively, the share of the service FDI within the authorised FDI inflows was 32% and 37% in Turkey. However, the share of service FDI jumped from 22% to 73% within 4 years (from 2003 to 2007) when the share of manufacturing FDI in dropped from 77% in 2003 to 27% in 2007. Throughout this period, financial intermediation was a leader sub-sector within the service FDI in Turkey. Followings were transportation, storage and communication and wholesale and retail trade sectors. However, what kind of changes happened in Turkey that FDI inflows in Turkey has changed its direction from the manufacturing to the service sectors and why the structural change started at the end of the 1990s instead of in the middle or at the end of the 1980s like other developing countries.

Table 14: Sectoral Distribution of Authorised FDI in Turkey

Sectors	1980-1989	1990-1999	2000-2002
Manufacturing	66%	61%	39%
Agriculture	2%	1%	3%
Mining	1%	1%	1%
Service	32%	37%	58%

Source: The Undersecretariat of Treasury

The reasons behind the increase in the share of the service FDI within the realised FDI inflow in Turkey since the end of the 1990s are similar to the reasons of changing the sectoral distribution of the world' FDI stock. The reasons are as follows:

- The reduction in the political and the bureaucratic barriers for foreign investors due to liberalisation. However, the liberalisation process started late in Turkey and therefore, the restriction for the foreign investors to enter the service sector was minimised (Yavan, 2006).

- The acknowledgement of the FDI law (No. 4785) in 2003 (Yavan, 2006).

- The reduction of entry cost in the service sector due to devaluation of TL as a result of the 2001 financial crisis.

- Especially after 2001, increases in demand in the service sector such as financial intermediaries, telecommunication, energy and communication.

- The privatisation of some public banks and companies (Denizer, 1997).

- The facilitation of the investment climate and macroeconomic stability.

- The reduction in the number of unhealthy financial intermediaries in Turkey (Denizer, 1997).

Table 15: Sectoral Distribution of FDI inflow in Turkey (Million US $)

	2003	2004	2005	2006	2007
Manufacturing Sector	539	329	829	2,100	5,113
Manufacturing as percentage of total	*77%*	*28%*	*10%*	*12%*	*27%*
Average of percentages					*30%*
Service Sector	156	855	7,699	15,533	14,015
Service sector as percentage of total	*22%*	*72%*	*90%*	*88%*	*73%*
Average of percentages					*69%*
Total	696	1,190	8,535	17,639	19,136

Source: The Central Bank of the Republic of Turkey

Service FDI in Turkey has been a leading sector since the beginning of the 2000s while Turkey's rivals - East European and West Asian countries - achieved this evolution at the end of 1980s and at the beginning of the 1990s. Therefore, manufacturing remained as a dominant sector in the FDI inflows until the beginning of the 2000s in Turkey. The main reason behind the late change in the sectoral distribution of FDI inflows in Turkey are as follows; bureaucratic and political barriers until end of the 1990s and the popularity of state companies until the 2001 financial crisis. Therefore, the implementation of privatisation was very difficult due to bureaucratic and political barriers and a nationalist perspective. From 1923 to 2001, public banks had been used by each Turkish government as an election investment so the sales of any state-owned companies to foreign enterprises were supported by neither the governments nor the community. Therefore the demand of goods and services of the foreign owned companies was very low. Moreover, the lack of a comprehensive FDI law until 2003 is another reason of why Turkey did not increase service FDI inflows during the 1980s and the 1990s. Finally, the failure of some financial intermediaries because of taking open position discouraged the foreign investors to make long-term investments in the service sector in Turkey. This is because FDI inflows to the service sector are more sensitive to risk or uncertainty in the finance sector than that to manufacturing or primary sectors.

Table 16: Financial Intermediaries FDI inflow in Turkey (Million US $)

Year	Fin. Int. FDI	% of Fin.int FDI in service FDI
2002	246	0.43
2003	51	0.07
2004	69	0.06
2005	4018	0.47
2006	6957	0.39
2007	11662	0.61
2008	6069	0.41
2009	666	0.11
2010	1584	0.25
Source: The Central Bank of the Republic of Turkey.		
Note: Fin. Int. represents financial intermediaries.		

Table 16 shows financial intermediaries FDI in Turkey. Neither the Central Bank of the Republic of Turkey nor the Ministry of Economics in Turkey has distinguished banking FDI from financial intermediaries FDI. That is why there is no banking FDI data available, specifically. In 2002, financial intermediaries FDI took 43% share of the service FDI in Turkey with US$ 246 million FDI inflows. However, in following years – 2003 and 2004- the share of financial intermediaries FDI in the service FDI reduced 7% and 6%, respectively. Because of positive macroeconomic indicators and high profitability in the Turkish banking sector, Turkey attracted US$ 4018 million (47% share of the service FDI), US$ 6957 million (39% share of the service FDI) and US$ 11662 million (61% share of the service FDI) in 2005, 2006 and 2007, respectively. However, current global crisis lead to reduction in financial intermediaries FDI in Turkey, as seen in Table 16.

2.4 Foreign Banking in Turkey

The banking history of Turkey goes back to the regression period of the Ottoman Empire. The first bank in Turkey, Istanbul Bank, was established in 1847. Ottoman Bank (Bank-I Ismanii Sahane) was established in 1863 and was the first foreign bank in Turkey (Ozdemir, 2003). The bank was French-British origin bank and run business in Turkey until 2007. The merger of Memleket Sandiklari and Eminyet Sandigi in 1888 formed the Ziraat Bank which has been one of the biggest public banks in the Turkish banking sector (Ozdemir, 2003). Until the establishment of the Republic of Turkey (1923), foreign owned banks were dominant in the Turkish banking sector in terms of assets. 13 foreign banks were running business in Turkey in 1924 and the ratio of the total deposits of these banks to the deposits in the Turkish banking sector was 78% although 18 domestic banks – including private and public banks - were holding 22 % of total deposit shares in the banking sector (Akguc, 2007). The main feature of these banks was to provide credits to the foreign owned companies in Turkey. During the 1920s, new local banks also were established in Turkey. In 1929, the total number of banks reached to 58 (15 of them were foreign origin banks) as a result of the contribution of the foundation government between 1924 and 1926. However, most of them faced bankruptcy at the end of the 1920s due to the global economic crisis in 1929. A part from that, the lack of capital to fund private sector projects could not change the lookalike of Turkey from agriculture-oriented country. Moreover, the reduction in profitability in the agriculture and trade sectors also contributed to the failure of these banks during the global crisis period. The total deposits in the foreign banks decline to 22% of total deposits in the banking sector in 1935 from 78% in 1924 as a result of global crisis and nationalisation movement in Turkey (Akguc, 2007). In this time period – 1924-1935 -, the main function of foreign banks was to finance internal and external trade activities. Until the establishment of

central bank of Turkey in 1931, ottoman bank took the responsibility of issuing bank notes to the domestic market from 1863.

Especially at the beginning of the post-WW II period, an increase in production led to an important jump in the spending in Turkey and thus the necessity of new banks had emerged. Therefore, there had been a distinctive increase in the number of new banks during the 1950s (Akguc, 1989). Other main reasons behind the increase in the number of new banks in Turkey were an increase in the returns from export and foreign credit, implementation of the FDI encouragement law and an increase in the savings due to the economic growth in Turkey (Akguc, 1989).

However, the number of foreign banks and the ratio of foreign banks assets to the total assets in the banking sector reduced systematically from 1929 to 1979. In 1960, there were 51 banks in Turkey, only 5 of which were foreign banks and the total share of foreign banks in the Turkish banking sector was 4.4%. The total assets that were held by foreign banks in the banking sector declined to 2.5 % in 1979 (Aydin, 2006). After the collapse of the Ottoman Empire, the first foreign capital to the banking sector penetrated in 1964 as a result of the investments of Bank of America and Banca D'America (Akguc, 1989). Then, In 1977 Arab-Turk bank was established in Turkey. The bank was a first foreign bank of Turkey in the republic period because 60% of the shares of the bank were holding by Libya and Kuwait investors.

The acknowledgment of new banking law (No. 7129) by the TBMM and the establishment of the Banks Association of Turkey in 1958 were important banking developments in the

banking history of Turkey. However, economic recession at the end of the 1950s and problems in the banking sector led to bankruptcy of some Turkish banks even if positive developments in the banking sector (Akguc, 1989 and Ocal, 1992). Throughout the 1970s, difficulties to open a commercial bank in Turkey made the banking sector more oligopolistic. Therefore, local banks closed down and a multi branch banking system emerged in Turkey (Aslan, 1982 and Parasiz, 2000). Moreover, for the first time, Turkey had faced hyper-inflation at the same time with the exchange rate crisis at the end of the 1970s. The existing shortage of foreign exchange in Turkey was worsened by the oil crisis in the world. In line with other developing countries, credit availability in Turkey was, therefore, dramatically reduced.

Prior to 1980, the financial sector in Turkey had suffered from tight finance and banking restrictions such as high tax burden - especially for financial earnings - , high reserve requirement, negative interest rate and high liquidity requirement. Moreover, the increase in the fiscal deficit had been tried to be financed by an increase in money supply and thus an inflation problem had emerged (Yeldan, 1997). As a result of these limitations over the finance system, some of the economic indicators turned its direction to negative and an inefficient banking sector emerged in Turkey.

The 1980's in Turkey mirror the reconstruction of the finance sector and the beginning of the integration of the Turkish economy with the global financial system. As a part of the liberalisation process in Turkey; interest rate control was removed; entry barriers into the banking sector especially for the foreign banks were minimised; opening foreign currency

account was allowed; the Istanbul stock exchange was reopened; and government controls on the finance sector were minimised.

Turkey's economic policies were inward looking and there was a comprehensive protection of the domestic market from 1960 to 1980. Therefore, the share of state-owned banks in the banking sector was more than 50% at the same time period (Denizer, 1998) and the banking sector was oligopolistic in Turkey due to the entry restrictions. Thus, competition among the Turkish banks was very limited. This condition was associated with the closure of considerable number of Turkish banks from 1960 to 1980. Since the end of the 1970s, banks in the developed countries have accelerated their investment to the developing countries where there is high economic growth in general and foreign capital is crucial element to achieve high economic growth. Thus, the share of foreign banks into the market has increased in the world, especially in the developing countries like Turkey. The acceleration of globalisation has contributed the development of sectors – especially banking sector- in the world since 1980. There were some changes happened in the banking sectors as a result of financial developments and technologic improvements. The rising importance of the banking sector in the Turkish economy and the liberalisation of the financial system were associated with rising incentives to foreigners in the finance sector in order to attract foreign banks to invest in Turkey throughout the 1980's. Thus, the number of foreign banks substantially increased. There were 42 banks in Turkey in 1980, only 4 of which were foreign banks. In 1990, the number of foreign banks in Turkey reached 23. Therefore, 19 new foreign banks entered the banking sector. Most of these banks entered Turkey throughout the period 1980-1985 and they were mostly of European and the United States origin. However, total assets that were held by foreign banks in the banking sector only increased from 3.1% in 1980 to 3.8% in 1990 (Denizer, 1997). New foreign banks in the market were mainly located in the 3

biggest cities in Turkey and preferred commercial banking rather than retail banking although there are no limitation to invest other cities and no limitation to fund customers via retail banking in Turkey. In this time period, the main reasons of these new foreign bank entries are the tenders of dam, transportation projects, telecommunication system investments, construction investments and large public investment tenders.

At the beginning of the 1990's, the Turkish economy, especially the finance sector, was struggling with liquidity problem. Until the recovery of the liquidity problem, Turkey in 1994 faced one of the most destructive crises in its history. As a result of the crisis, Turkish Lira (T.L.) lost its reputation and its value against US$ almost 170% from January 1994 to April 1994. In order to reduce uncertainty in the finance sector, the Turkish government started to provide a 100% insurance guarantee for deposits into the banks that had run a business in the banking sector. However, the guarantee encouraged both public and private banks - including foreigners - in Turkey to take more risk which was due mostly to borrowing with high interest rate and lending with taking an open position. Then, the new banking law - No. 4389 banking law - was prepared and came into force to fix the problems of unhealthy banks mainly in Turkey in June 1999. According to the law, the criteria of establishing a bank, opening a branch, taking over a bank by the Saving Deposit Insurance Fund (SDIF) and cancelling the licence of a bank in Turkey were reedited. In fact, the law facilitated the possible sale or merger of unhealthy banks under the control of SDIF (Denizer, 1997). Therefore, six unhealthy Turkish banks (Interbank, Egebank, Yurtbank, Sumerbank, Esbank, and Yasarbank) were taken over by the SDIF in 1999. Inefficient banking system at the end of 2000 triggered the banking crisis and as a solution, the exchange rate regime changed and a flexible exchange regime was implemented. The joining of these factors triggered the economic crisis in February 2001. Due to these reasons, foreign bank entries in Turkey had

not been accelerated and the share of bank assets that were held by foreign banks in Turkey remained below 6% until the middle of the 2000's. In order to reconstruct destroyed economy and finance system as a result of 2000 and 2001 crises, Transition to the Strong Economy program (TSEP) and the Restructuring Program for the Banking Sector (RPBS) were implemented. While the goals of TSEP were to accelerate privatisation of unhealthy public companies and to achieve economic and financial stability via reconstructing trust and confidence in the market, RPBS aimed to restructure unhealthy banks and public banks, to prepare world-wide acceptable banking regulation and to strengthen regulatory environment and finally strengthen private banking either domestic or foreign. At the reconstructing period, to benefit from know-how, technology, managerial skills and capital of foreign banks, the penetration of foreign banks to the market was facilitated. Moreover, the capital structure of domestic or private banks was strengthened based on Basel II criteria and the sales of TMSF banks were accelerated. The first sale of TMSF bank at the post 2001 crisis period was realised by the sale of Demirbank to HSBC bank with US$ 350 million. After this sale, the perspective of European banks over TMSF banks changed, positively (Steinherr et al., 2004).

Until the beginning of 2000s, due to high systemic risk in Turkey, the share of foreign bank in the Turkish banking sector remains below 5% and expected competitive banking system cannot be achieved despite foreign bank entries in the 1980s. However, positive macroeconomic indicators, achieving political stability, the acceleration of reforms especially in the finance sector, the foundation of the Coordination Council and Investment Advisory Council, new FDI law (No.6224) and the reduction in corporate tax led to achieve high growth rate in the banking sector in Turkey, except for the global crisis period (4th quarter of 2008 and 1st quarter of 2009). The ratio of the total banking assets to GNP in 2005 increased from 67% (US$ 300 billion) to 82% (US$ 536 billion) in 2009. The share of bank assets held

by the foreign banks in Turkey has jumped from US$ 8.15 billion (3.50% of the total banking assets) in 2005Q1 to US$ 84.24 billion (13.72% of the total banking assets) in 2010Q3 although the total number of foreign banks in the Turkish banking system declined to 17. Moreover, the difference at the post – 2001 period in the entry mode of foreign banks to Turkey changed. In this period, they have mostly preferred the share acquisition of domestic banks as the entry mode rather than to open a branch or representation in the banking sector.

2.5 References

[1] Aitken, B., G.H. Hansen and A. Harrison (1997). "Spillovers, Foreign Investment and Export Behaviour." Journal of International Economics **43**: 103–32.

[2] Aitken, B. and A. Harrison (1999). "Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela." American Economic Review **89**: 605-618.

[3] AK Party (2003). "AK Party Programme." **Turkish** "AK Parti Programi."

Available at: (20.07.2010)

http://www.akparti.org.tr/program.asp#top.

[4] Akguc, O. (2007). "Foreign Banks in Turkey." **Turkish** "Turkiye de Yabanci Bankalar" Muhasebe ve Finansman Dergisi **36:** 6-17

[5] Alfaro, L., C. Areendam, S. Kalemli-Ozcan, and S. Selin (2003). "FDI and Economic Grwoth: The Role of Local Financial Markets." Journal of International Economics **61**(1): 512-533

[6] Albuquerque, R. (2003). "The Composition of International Capital Flows: Risk Sharing Through Foreign Direct Investment." Journal of International Economics **61**: 353–383.

[7] Alpar, C. (1978). "MNCs and Economic Growth." **Turkish** "Çok Uluslu Sirketler ve Ekonomik Kalkınma." Second Edition, Ankara: AITIA Yay.

[8] Aydin N., D. (2006). "The implementations of Banking" **Turkish** "Bankacilik Uygulamalari" Eskisehir: Anadolu Universitesi AOF Yayinlari.

[9] Bhattacharya, M., C. Jong-Rong and V. Pradeep (2008). "Productivity Spillover in Indian manufacturing Firms" Discussion Paper, 30/08, Monash University: Business and Economics, Australia.

[10] Blomstorm, M. and N. E. Wolff (1989). "Multinational Corporations and Productivity Convergence in Mexico" National Bureau of Economic Research (NBER), Working Paper, **No:3141**

[11] Blomström M. and A. Kokko (1996). "The Impact of Foreign Investment on Host Countries: A Review of the Empirical Evidence" Stockholm School of Economics, NBER and CEPR.

[12] Borensztein, J., J. De Gregorio and J-W. Lee (1998). "How Does Foreign Direct Investment Affect Economic Growth?" Journal of International Economics **45**: 115-135.

[13] Bulutoglu, K. (1970). "Foreign Capital in Turkey." **Turkish** "100 Soruda Türkiye'de Yabancı Sermaye." Istanbul: Gerçek Yay.

[14] Caves, R. (1971). "International Corporations: The Industrial Economics of Foreign Investment" Economica **38**: 1-27.

[15] Caves, R. (1974). "Multinational Firms, Competition and Productivity in Host Country markets." Economica **41**: 176-193.

[16] Caves, R. (1996). "Multinational Enterprise and Economic Analysis." 2nd ed. Cambridge: Cambridge University Press.

[17] Daniels, P. W. (1993). "Service Industries in the World Economy." Oxford: Blackwell.

[18] De Gregorio, J. (2003). "The Role of Foreign Direct Investment and Natural Resources in Economic Development" Working Paper No 196. Central Bank of Chile, Santiago.

[19] Denizer, C. (1997). "The Effect of Financial Liberalization and New Bank Entry on Market Structure and Competition in Turkey" the World Bank WPNo: 1839.

[20] Dicken, P. (1998). "Global Shift: Transforming the World Economy." Third Edition, New York: Paul Chapman.

[21] Dumludağ, D. (2007). "PhD: Foreign Direct Investment in Developing Economies and Turkey; The Role of Institutions." Boğaziçi University.

[22] Dunning, J. H. (1988). "Explaining International Production." London: Unwin Hyman.

[23] Dunning, J. H. (1993). "Multinational Enterprises and the Global Economy." Wokingham, England: Addison-Wesley.

[24] Durham, J.B. (2004). "Absorptive Capacity and the Effects of Foreign direct investment and Equity Foreign Portfolio Investment on Economic Growth." European Economic Review **48**(2): 285-306.

[25] Enderwick, P. (1994). "Transitional Corporations and Human Resources", UNCTAD: Transitional Corporations and World Development: 215-249.

[26] Erdilek A. (2003). "A Comparative Analysis of Inward and Outward FDI in Turkey." Transnational Corporations **12**(3): 79-105.

[27] Ernst C. (2005) "The FDI – Employment Link in a Globalizing World: The Case of Argentina, Brazil and Mexico." Employment Strategy Papers, Employment Strategy Department.

[28] Feis, H. (1965). **"**The World's Banker (1870-1914), A Account of European Foreign Investment and the Connection of World Finance with Diplomacy before World War I." (IX Preface), New Haven: Yale University Press.

[29] Foreign Investment Advisory Service (FIAS) (2001). "Turkey: a Diagnostic Study of the Foreign Direct Investment Environment." (Washington, D.C.: FIAS), mimeo.

[30] Fu, X. and V.N Balasubramanyam (2005). "Exports, Foreign Direct Investment and Employment: The Case of China." in World Economy **28**: 607-625.

[31] Germidis, D. (1977). "Transfer of Technology by Multinational Corporations" Development Centre of Organization for Economic Cooperation and Development. Paris.

[32] Glass, A. J. and K. Saggi (1998). "FDI Policies under Shared Markets." Journal of International Economics **49**: 309-32.

[33] Glass, A. and K. Saggi (2002). "Multinational Firms and Technology Transfer." Scandinavian Journal of Economics **104**(4): 495-513.

[34] Global Business Council, (2001). "FDI Confidence Index."

Avialable at: (10.08.2012

http://www.atkearney.com/shared_res/pdf/GBPC_FDIfeb2001_S.pdf

[35] Grazia, I. (2005). "Transnational Corporations and International Production: Concepts, Theories and Effects." Northampton, UK: Edward Elgar Publishing Ltd

[36] Haddad, M. and A. Harisson (1993). "Are there Positive Spillovers from Direct Foreign Investment? Evidence from Panel Data for Morocco." Journal of Development Economics **42**: 51-74

[37] Hanink, D. M. (1997). "Principles and Applications of Economic Geography." New York John: Wiley & Sons.

[38] He, J. (2006). "Pollution Haven Hypothesis and Environmental Impacts of Foreign Direct Investment: The Case of Industrial Emission of Sulfur Dioxide (SO2) in Chinese provinces." Ecological Economics **60**(1): 228-245.

[39] Head, K. and Ries, J. (2001). "Overseas Investment and Firm Exports." Review of International Economics **9**(1): 108-122.

[40] Hunya, G. (1998). "Relationship between FDI, Privatisation and Structural Change in CEECs." paper prepared for the Conference on Privatisation, Corporate Governance and the Emergence of Markets in Central-Eastern Europe, FIT, Berlin.

[41] IGEME (Undersecretariat of the Prime Ministry for Foreign Trade Export Promotion Centre) (2005). "Foreign Investment in Turkey."

Available at: [www.igeme.org.tr/english/turkey/pdfView.cfm?sec=tr&secID=1&subID=4]

[42] Javorcik, B. (2004). "Does Foreign Direct Investment Increase the Productivity of Domestic Firms? In search of spillovers through backward linkages." American Economic Review **94**: 605-627.

[43] Kasaba, R. (1993). "Treaties and Friendships: British Imperialism, the Ottoman Empire, and China in the Nineteenth Centur." Journal of World History **4**(2): 215-241.

[44] Lensink, R. and O. Morrissey (2001). "Foreign Direct Investment: Flows, Volatility and Growth in Developing Countries." Research Report 01E16, University of Groningen, Research Institute SOM (Systems, Organisations and Management).

[45] Lipsey, R. E. (1999). "The Role of Foreign Direct Investment in International Capital Flows."NBER Working Paper**7094**: Cambridge, MA.

[46] Lipsey, R. E. (2001). "Foreign Direct Investors in Three Financial Crises "NBER Working Paper**8084**: Cambridge, MA.

[47] Liu, Z. (2002). "Foreign Direct Investment and Technology Spillover: Evidence from China." Journal of Comparative Economics **30**: 579–602.

[48] Markusen, J. (1983). "Factor Movements and Commodity Trade as Complements." Journal of International Economics **14**(3-4): 341-356.

[49] Moosa, I. A. (2002). "Foreign Direct Investment: Theory, Evidence and Practice." New York: Palgrave Macmillan.

[50] Nickell, S. (1996). "Competition and Corporate Performance." Journal of Political Economy **104**(4): 724-46.

[51] Nunnenkamp, P. (2004). "To What Extent Can Foreign Direct Investment Help Achieve International Development Goals?" The World Economy **27**(5): 657-677.

[52] OECD (1999). "OECD Benchmark Definition of Foreign Direct Investment"

Available at: (15.07.12)

http://www.oecd.org/dataoecd/10/16/2090148.pdf

[53] Ongun, M. T. (2001). "Foreign Capital and Foreign Debts." **Turkish** "Yabancı Sermaye ve Dıs Borçlar." Sahinöz, A. (ed.) Türkiye Ekonomisi Sektörel Analiz, Ankara: Imaj Yay.

[54] Ozdemir, D. and Darby, J. (2009). "One Less Barrier To Foreign Direct Investment in Turkey." European Urban and Regional Studies **16**(1): 87-99.

[55] Ozdemir, Z. (2003). "The Structure of Balance Sheet in the Turkish Banking System." **Turkish** "Bilanco Yapisi Itibariyla Turk Bankacilik Sistemi." Sosyal Siyaset Konferanslari Kitap 50.

[56] Pamuk, S. (1987) "The Ottoman Empire and European Capitalism, 1820-1913." First Edition, New York: Cambridge University Press.

[57] Rhee, J. and T. Belot (1989). "Export Catalysts in Low-income Countries." World Bank Working Paper. World Bank.

[58] Sjöholm, F. (1999). "Technology Gap, Competition and Spillovers from Foreign Direct Investment: Evidence from Establishment Data." Journal of Development Studies **36**(1): 53-73.

[59] Smarzynska, B. K. (2002). "Does Foreign Direct Investment Increase the Productivity of Domestic Firms?: In Search of Spillovers Through Backward Linkages." Policy Research Working Paper **No. 29**. The World Bank, Washington, D.C.

[60] Steinherr, A., A. Tukel, and M. Ucer (2004). "The Turkish Banking Sector: Challenges and Outlook in Transition to EU Membership." CEPS EU-Turkey Working No. 4.

[61] Tezel, Y. S. (1994), "Economic History from 1923 to 1950." **Turkish** "Cumhuriyet Dönemi Iktisat Tarihi (1923-1950)." Third Edition, Istanbul: Tarih Vakfı Yurt Yay.

[62] The Undersecretariat of Treasury (2003). "Foreign Direct Investment Law."

Available at: (15.07.09)

http://www.treasury.gov.tr/irj/go/km/docs/documents/Treasury%20Web/Legislation/Foreign%20Direct%20Investment%20Legislation/FDI%20Law.pdf.

[63] Tuncer, B. (1986). "The Problem of Foreign Investment in Turkey." **Turkish** "Türkiye'de Yabancı Sermaye Sorunu." Ankara: S.B.F. Yayınları.

[64] Turkyilmaz, M. (2009). "Developments in Foreign Capital Regulations in Turkey and its Politic and Economic Impacts." **Turkish** "Turkiye'de Yabanci Sermaye Iliskin Hukuksal Duzenlemelerin Tarihsel Gelisimi ve Konuya Iliskin Siyasal ve Ekonomik Nedenler."

Available at: (15.07.09)

http://www.turkhukuksitesi.com/makale_142.html

[65] UNCTAD, (1993). "World Investment Report 1993: Transnational Corporations and Integrated International Production." New York: United Nations Publications.

[66] UNCTAD, (1994). "World Investment Report 1994: Transitional Corporations, Employment and the Workplace" New York: United Nations Publications.

[67] UNCTAD, (1998). "World Investment Report 1998: Trends and Determinants." New York: United Nations Publications.

[68] UNCTAD, (1999). "World Investment Report 1999: Foreign Direct Investment and the Challenge of Development." New York: <u>United Nations Publications</u>.

[69] UNCTAD, (2004). "World Investment Report 2004: The Shift towards Services." New York: <u>United Nations Publications</u>.

[70] Uras, G. (1981). "Foreign Capital Investment in Turkey." **Turkish** "Türkiye'de yabancı sermaye yatırımlari." Ankara: <u>DPT Yay</u>.

[71] Wang, J. and M. Blomström (1992). "Foreign Investment and Technology Transfer: A Simple Model." <u>European Economic Review</u> **36**: 137-55.

[72] Wei, S. (2001). "Domestic Crony Capitalism and International Fickle Capital: Is There a Connection?" <u>International Finance</u> **4**(1): 15-45.

[73] Xing, Y. and C. D. Kolstad (2002). "Do Lax Environmental Regulations Attract Foreign Investment?" <u>Environmental and Resource Economics</u> **22**: 1–22.

[74] Yavan, N. (2006). "PhD Thesis: Location Selection of FDI in Turkey." **Turkish** "PhD: Turkiye'de Dogrudan Yabanci Yatirimlarin Lokasyon Secim Uzerine Bir Arastirma." Ankara University, Ankara.

[75] Yilmaz, L. (2006). "The Newness of No. 4875 FDI Law." **Turkish** "4875 Sayili Dogrudan Yabanci Yatirimlar Kanunu'nun Getirdigi Yenilikler." Istanbul Ticaret Universitesi Sosyal Bilimler Dergisi 10: 173-190.

[76] Zhang, K. H. and S. Song (2000). "Promoting Exports: The Role of Inward FDI in China." China Economic Review **11**(4): 385-396.

Chapter 3: Theory of Multination Corporation

Dervis Kirikkaleli

Stirling Management School, Division of Economics, University of Stirling, FK9 4LA

Email: dervis.kirikkaleli@stir.ac.uk

Telephone: +44 (0) 759 100 5766

3.1 Abstract

The rising magnitude of investments of MNEs has encouraged researchers to grow their interest in the consequences and causes of FDI. Over time, the wave has led to the development of a number of theories to explain the pattern of FDI in the world. In other words, this trend encourages researchers to investigate the factors that motivate investors to invest abroad. The main aims of this chapter are to evaluate the evolution of existing theories of MNEs, including the theories of multinational banking and to reveal their lack of power to explain the direct investments of MNEs. The nature of FDI is one to one related with MNCs and the theory of FDI is part of the theories of MNC because most direct investments are realised by MNCs. These theories are monopolistic advantage theory, product cyclic theory, currency areas and exchange rate theories, oligopolistic advantage theory, transaction cost theory and Dunning's eclectic paradigm.

3.2 Introduction

The rising magnitude of investments of MNEs has motivated researchers to investigate the consequences and causes of FDI. Over time, the rising magnitude of such investment has led to the development of a number of theories to explain the investment of MNEs. The main aim of this chapter is to evaluate the existing theories of MNEs, including the theories of multinational banking and reveal their lack of power to explain the direct investments of MNEs. FDI refers to expanding the home country firm to the foreign market or markets. The nature of FDI is one to one related with MNEs and the theory of FDI is part of the theories of MNE because most direct investments are realised by MNEs. These theories are monopolistic advantage theory, product cyclic theory, currency areas and exchange rate theories, oligopolistic advantage theory, transaction cost theory and Dunning's eclectic paradigm. Mainly, these questions are answered by these theories:

- Why do local companies invest abroad?

- How are multinational enterprises competitive against host country companies?

- When do foreigners invest abroad?

- Why do multinational enterprises prefer direct investment instead of licensing or exporting?

- Where is the most appropriate place for MNCs to run business?

The last three decades mirror many changes in the financial sector in the world due mainly to the globalisation of finance sectors. Up to the 1980s, developing countries kept their entry requirements as strict as possible against foreign banks. Since they realised that foreign banks can save host countries' banking sector via providing credits either public or private sectors,

governments in the most of the developed and developing countries have started to remove restrictions on foreign bank entries. In the same direction with the globalisation process, multinational bank activities have gradually risen in developing countries. Similar to the theory of MNEs, The rising magnitude of investments of multinational banks has encouraged researchers to grow their interest in the consequences and causes of international banking. This pattern raises some questions about the factors that motivate banks to be multinational. The theory of foreign investment in banking sector is called international or multinational banking theories in the literature. The main aim of this theory is to explain why multinational bank invest abroad. In general, the theory of multinational enterprise is used to explain the pattern of multinational bank investments in the world. Therefore, the theory of multinational banking is one to one related with the theory of multinational enterprise. The first attempt to explain multinational banks were made by Grubel (1977). He used almost same way of Kindleberger' FDI theory. Moreover, Aliber (1976) used international trade and industrial organisation theories to explain foreign investment in banking sector. More comprehensively, Williams (1997) combined both the internalisation and eclectic theories to understand reasons behind the investments of multinational banks abroad.

In the neoclassic theory, direct investment of a local company abroad under perfect competition, however, does not take place because the investment to the host country is more likely to be more costly than the domestic investment of the local company due to the lack of information about the society, culture, economy and politics in the host country. Therefore, the theory recommends firms to export its products abroad.

Prior to Stephan Hymer's approach[26] (Hymer, 1960 and 1976), the initial works of economists did not contribute to the theory of FDI because there was no difference among the types of international capital flows. In other words, FDI and FPI flows were motivated by the same factors (Forsgren, 2009). The neoclassic theory assumes that MNEs are motivated by the differences in the rate of return among countries and all countries are perfectly competitive (see, Iversen (1936) and Dunning and Rugman (1936)). Another assumption of the hypothesis is that countries cannot experience FDI inflow and outflow at the same time. Therefore, capital flows direct from a country where the rate of return is low relative to another country where the rate of return is high with respect to the theory (Moosa, 2002). For instance, the theory was partially reliable as US' MNEs had increased their investment to European countries where the rate of return was higher than its domestic market throughout the 1950s. However, this situation changed and the theory began to be weak to explain the investments of MNEs at the beginning of 1960s. While the US market was relatively more profitable than the markets of European countries, the investments of US origin MNCs accelerated to European countries throughout the 1960s (Hufbauer, 1975). Furthermore, while the US' MNEs were investing in European countries during the 1950s, especially UK origin MNEs mostly invested in the US market where the interest rate was relatively low. Therefore, such theory had not been appropriate to explain the direct investment of MNCs. Another problem in this theory is that the reported profit was used to calculate the rate of return instead of using expected or actual profit to calculate the rate of return to explain FDI. Realised profit and profit earned throughout a year (which was used to test the hypothesis) may not be equal. The neoclassic theory also assumed that technological developments of countries were homogeneous, only capital and labour were taken into account as an input. In this situation, less developed countries where technological development was also low, would

---

[26] The approach of Stephan Hymer is explained in the following section.

attracted high-tech FDI similar to developed countries, but in real life, this situation mostly has not happened. Not surprisingly, the attempt of Agarwal (1980) and Weintraub (1967) to prove the hypothesis failed.

Aliber (1976) used neo-classic theory to explain multinational banking investments in the world. According to him, the activities of banks in competitive advantage countries are relatively more. Based on this perspective, the rate of return is a main factor to select the good and services of banks. Therefore, banks, which have a competitive advantage, have more change to run business abroad, profitably. Reducing cost of banking and increasing market share of a bank are likely to run business profitably relative to other banks in the host market. Moreover, he also pointed out that in order to reduce the uncertainty in the market, the bank will likely to internalise itself and prefer to invest abroad. However, this perspective is criticised by Williams (1997) because such theory did not take into account administration cost, risk-return balance in the finance markets, and interest rate as an important factor effecting the decisions of multination bank while taking investment decision abroad.

One scholar - Tobin (1969) – criticised the difference rate of return theory and he concluded that the risk factor should be taken into account as an explanatory factor even though rate of return is an important explanatory factor to make investment decision abroad. According to him, MNEs may prefer to minimize risk per unit of return instead of high rate of return.

As a result, the increase in the share of FDI into the international capital flows since the 1950s and the rising investment of the US origin MNEs abroad where rate of return was

relatively lower have made the portfolio theory inadequate to explain the direct investment of MNCs. This circumstance encouraged researchers to use different explanatory variables to explain the pattern of FDI or the behaviour of MNEs.

3.3 Monopolistic Advantage Theory

The study of the Canadian scholar -Stephen Hymer- is widely accepted to have formed the root of modern FDI theory and contributed to the development of FDI theories (Hymer, 1960 and 1976). Up to Stephen Hymer's approach, there was no distinction between FDI and FPI as explained in the previous section. In other words, his approach rejected the approach of the neoclassical theory to direct investments of MNEs. This is because MNEs could not only be motivated by rate of return differentials among countries. Therefore, even if FDI is a kind of capital flow, the determinant of FDI in host and home countries might be different than that of FPI. He answered the questions of why do local enterprises invest abroad? And how do local enterprises run business profitably in a host country despite the disadvantages such as lack of information about the market, society, culture and politics of the host country?

According to the neoclassical theory, profit maximisation is a most important motive for MNCs as explained in the previous section. Stephen Hymer (1960 and 1976) asserted that profit maximisation can be achieved by the MNEs if such corporations obtain managerial skills, technology, patents, brand name against host country companies. Accordingly, the answer is clear "possessing firm-specific advantage by the MNEs is the reason behind achieving their objectives in the host market". Most researchers (whose research area is

multinational or international business) have confirmed that a firm or industry level market imperfection – which partly comes from firm-specific advantages – is a necessary element to encourage MNEs to invest abroad. Therefore, Stephen Hymer's approach to explain the direct investment of MNEs revealed "ownership-specific advantage" which is also called firm-specific advantage for the first time. In other words, FDI takes place when market structure is imperfect. Market imperfection mainly comes from the firm-specific advantage such as product differentiation, marketing skills, patent, technology, managerial skills, internal and external economies of scale. In addition, host country restrictions on market entry or output can make a market imperfect as well[27].

More importantly, Stephen Hymer (1960 and 1976) also distinguished the difference between FDI and FPI. He used the "control" issue to distinguish these two forms of international capital flows. According to him, a foreign investor has control over host countries enterprises, if the investor owns at least 25 % of the equity of the host countries enterprise. In this situation, FDI takes place. However, a portfolio investor does not have control over the host countries enterprise (Grazia, 2005). Furthermore, he also pointed out that market structure is another important determinant of FDI because MNEs achieve a higher rate of return from its investment if market imperfection exists in the market.

---

[27]Monopolistic advantages are unique for foreign investors and domestic enterprises cannot benefit from such advantages. In addition, competitive market assumptions do not exist in a market where MNEs are located. On the other hand, Hymer (1960 and 1976) described that likelihood costs of investing abroad are gathering information, fluctuation of exchange rate or government interventions. Moreover, cultural, economic, political and legal differences between host and home countries, creates extra costs to the MNEs in the world.

Similar to Hymer (1960 and 1976), the perspective of Grubel (1977) underlined that foreign banks in a host market needs to have some advantages against its host country' rivals. The lack of such advantages is likely to discourage such banks to make investment abroad (Bain et al., 2003). The multinational banking theory of Grubel (1977) focused on analytically different three types of banking which are multinational wholesale banking, multinational retail banking and multinational service banking. He tried to understand which factors allows banks to penetrate into a foreign environments and being able to compete against host countries' rivals.

Apart from the ownership-specific advantage, Hymer (1960 and 1976) concluded the thesis that if market imperfection does not existing in a market, this will create problems for the MNEs and these enterprises should solve these problems. The problems are the confliction and competition in the market. The elimination of conflicts in the host country is an important determinant of FDI. The episode emerges, if competitors exist in a host market or if competitors try to enter the host market. The confliction could be eliminated when MNEs acquire a rival firm or firms in the host country. Therefore, the power of MNCs over the host market will increase. Second, MNEs encourage two or more companies to merge. Therefore, these companies will transform to one company.

Caves (1971 and 1982) developed the Hymer's monopolistic advantage theory by combining it with the industrial organisation hypothesis. As explained above, direct investment abroad involves some extra costs to the MNEs. The costs come from political, culture, social, legal system, language and other differences between host and home countries. Therefore, a firm in order to take an investment decision, especially abroad, must have some firm specific

advantages such as brand name, managerial skills and so on. Therefore, the firm will overcome the costs of being foreign in a host country. For example, KFC has plenty direct investment world-wide. One reason that KFC prefers direct investment instead of selling its advantage via licensing is to protect the formulas, methods or ways used to produce its unique products. These advantages are difficult to sell by the company because these advantages belong to the company and it is difficult to transfer and value. Graham and Krugman (1991) used the hypothesis to describe the pattern of US FDI flows. In addition, under the industrial organisation hypothesis, the difference between vertical and horizontal FDI was identified by Caves (1971 and 1982)[28].

The unspecified explanation of Hymer (1960 and 1976) to the ownership – specific advantage was criticised by Hymer's followers because Hymer (1960 and 1976) did not explained clearly how such advantages were generated by the MNCs. Moreover, the positive impacts of investment and strategy on the generation and development of such advantages were not taken into account. Furthermore, Hymer's monopolistic advantage theory explains only why local companies invest abroad, but his theory does not explain why companies prefer one country instead of other countries to invest. Moreover, Cantwell (2000) and Yamin (2000) heavily criticised the Hymer's monopolistic advantage theory because according to them, Hymer did not discuss how a firm can run business efficiently in a host market?

---

[28]Vertical FDI occurs where MNEs change its production type in a foreign market. MNEs prefer vertical FDI whenever MNCs face difficulty to enter foreign market and try to find to prevent strategic uncertainty. High risk perception, competitiveness and low technologic development are the reasons minimized the entry of vertical FDI to the host countries. The main reason behind the occurring vertical FDI in the world between WWII and 1980 was to reach necessary raw material for the factories of MNEs in its home countries. Horizontal FDI – is another type of FDI - occurs where the production type of MNEs in a host country is same as that in a home country. MNEs, which prefer horizontal type of investment, do not share its unique technology, managerial skills with domestic companies and these enterprises minimize negative impacts of tariff on MNCs' export.

In conclusion, Hymer (1960 and 1976) pointed out that FDI takes place when a firm possesses firm – specific advantages and such advantages are not being possessed by other firms in the market. MNEs cannot cope with the costs of running business abroad without possessing firm – specific advantages.

3.4 Product Cycle Theory

The monopolistic advantage theory was developed by Vernon (1966). He combined the monopolistic advantage theory with the product cycle theory to explain the pattern of FDI flows. Moreover, Vernon (1966) answered the question of why national companies of the US preferred FDI instead of exporting. The product cycle theory[29] added "time" into the monopolistic advantage theory and also took into account technology differences among countries. According to the theory, there are three stages of the production process which are "new product", "maturing product" and "standardised product" respectively. Vernon (1966) asserted that high-tech products initially produce in a country where technology is developed and the profit margin is high. Afterwards, the production shifts to newly-industrialized countries and developed countries. At the final stage, the high-tech product is standardised and the production shifts to a country where the cost of production is low such as developing countries.

The first stage of production – new product stage - initially began with the innovation of a high-tech product and the theory assumed that the product is not accessible by other companies in the home country. Therefore, a company prefers the domestic market where a

---

[29]The product cycle theory also aimed to explain increasing export from some developing and newly industrialized countries.

country is developed or industrialized and the level of technological development is high, for the production and sale of its product. The production continues in the market even if the production cost is high in the market relative to developing countries. Hereby, the company has monopolistic power in the market. Throughout the stage, neither FDI nor trade take place. In the second stage, the rival company or companies in the local market, where the production takes place, will likely try to copy or even to develop the product. Therefore, the company needs to get a patent for its product versus the reaction of its rival companies. Over time, other companies, however, reach the technological development of the company to produce similar products in the market. Therefore, the company may lose its monopolistic advantage. This stage is called "maturing product". The company loses its monopolistic advantage, but investing abroad in order to produce the product cheaply or exporting the product, once again, put the company one step ahead against its rivals in the market. In the third stage, the product and its technology are standardised and the company does not need skilled labour to produce the product. Moreover, in order to be competitive in the market where the price starts to be elastic, the company has to keep its product price low. Beside, investing abroad becomes more profitable instead of exporting. Then the company moves its factory to a developing country, where labour is cheap and raw materials are abundant, in order to reduce the cost of production. Thus, international production takes place. Reducing market share due to standardising product technology is the reason behind preferring to invest abroad.

As previous FDI theories, Vernon's product cycle theory has some weak sides. Vernon's product cycle theory has explained only some sectors of realised world-wide FDI. Realised FDI flows in textile, electronics automotive and plastic sectors can be explained by the theory. The theory ignores strategic-asset and efficient seeker-FDI and does not explain the

direct investment of technology-intensive MNCs (see, Dicken (1998) and Buckley and Casson (1976).

Vernon developed and reformulated his product life cycle theory with a changing international environment in 1974 and 1979. Reducing the technological development gap between the US and other developed countries, he, therefore, perceived that product life cycle theory did not completely explain the investments of MNEs. He developed his theory by taking into account oligopolistic treatment (Vernon, 1979). Two things were mainly changed relative to the early approach. One is related to the cost issue. Not only labour cost but also other types of costs were included in the hypothesis. His new model also tried to explain world-wide FDI flows instead of only direct investments of US origin MNCs. As a result, the income level and the cost of production in the host markets are the main determinants of investments of MNEs in accordance with the product cycle approach.

3.5 Oligopolistic Reaction Theory

Caves (1971) postulated that FDI emerges if the market structure is oligopolistic instead of monopolistic. In an oligopolistic market, firms have to react to any kind of its rivals' reaction in order to survive or be competitive in accordance with the oligopolistic reaction approach. Caves (1971), Aharoni (1966), Knickerbocker (1973), and Lall and Streeten (1977) argued that the reaction of other firms cannot be explained by the theory of profit maximization and ownership specific advantage. Moreover, Knickerbocker (1973) developed "follow the leader" theory combining it with the defensive FDI approach. He pointed out that the best market structure is an oligopoly in order to benefit from the ownership specific advantage. Furthermore, he stated that the product concentration of MNEs is increased by the

oligopolistic reaction. In an oligopolistic market, direct investment of a firm will encourage its rivals to invest in the same foreign market because if the rivals do not follow the leader company – which invests first to the foreign market, the rivals will lose their competitive position in its home market. In the literature, this strategy is called "follow the leader"[30]. Thus, spoilage balance in a home market will be offset. Knickerbocker (1973) identified the investment of the leader company as aggressive and the investments of the followers as defensive.

However, Knickerbocker (1973) did not answer the question of why does the "leader" company invests abroad? This is a weak side of this theory. In addition, Buckley and Casson (1976) criticised the approach of the oligopolistic reaction theory because the approach also existed in the previous FDI theories. Besides, the theory is very complex and it is very difficult to model such theory to get empirical results.

3.6 Currency Areas and Exchange Rate Theories

Another significant step in the development of a theory of the MNEs was taken by the currency areas and exchange rate theories. The power of domestic currency, for the first time, was taken into account as an explanatory factor of direct investments of MNEs by Aliber (1970). The aim of Aliber (1970) is to investigate the advantage of MNEs over the local companies because he puts forward that the advantage, which is especially to exist in strong

---

[30] For example, assume that three companies are dominant in an industry sector in country A. The companies names are called "X, Y and Z" respectively. If the company X decides to invest country B, other companies know that the investment of company X will affect its rivals negatively and company X will be able to reduce its production cost and to find a chance to control country B market. Therefore, the likelihood of exporting the products of company Y and Z to country B will minimize. Even, company X may improve its technology, managerial skill and knowhow via such investment. Thus, the company Y and Z have only one chance in this situation in order to be competitive. The chance is direct investment to country B.

currency area, is not specific to a firm but also other firms in the same area. Therefore, the power of domestic currency is the main reason behind emerging direct investments of MNEs in accordance with Aliber (1970). He asserted that a firm, where the domestic currency is strong, becomes "investor" or "source of FDI", whilst a firm in a poor domestic currency or country with poor domestic currency can be only "investment receiver". This is because the firm in the strong currency areas has more chance to borrow in the domestic or global area at a lower interest rate relative to the firm in the weak currency area. Thence, the firm in the strong currency area benefits from the differences between interest rates.

Apart from the importance of domestic currency, Aliber (1970) emphasised that market structure is also fundamental to attract FDI inflows. According to Aliber's hypothesis, whilst the overvaluation of currency is a factor behind outward FDI, the devaluation of currency is a main reason to attract inward FDI. In 1980, one scholar – Agarwal (1980) – proved that the overvaluation of currency is a main factor influencing FDI outflow. Agarwal (1980) also stated that appreciating domestic currency forces domestic companies to invest abroad because appreciating currency makes domestic firms less competitive to export. Therefore, FDI takes place. In other words, depreciating domestic currency reduces the assets price for especially foreign investors, vice versa. Other supporters of Aliber's hypothesis, Froot and Strein (1991), found a relationship between US $ and FDI inflow by using US data and they concluded that existing market imperfection makes the cost of borrowing more expensive than domestic borrowing due to the information imperfection in the finance sector. Therefore, firms that belong to a weak currency area cannot be a source of FDI.

More recently, James (2008) investigated the reasons behind FDI in Malaysia using time series techniques. He concluded that reducing the Malaysian currency values leads to larger

direct investments of MNEs to Malaysia. Therefore, his result is consistent with the currency areas and exchange rate theories. Moreover, Azrak and Wynne (1995) and Ramirez (2006) found similar results.

On the other hand, this theory has some weaknesses. The hypothesis used by Aliber (1970) and Agarwal (1980), cannot be used to explain FDI flows among same currency areas (Lisando, 1991). The last 3 decades, some researchers have found out that exchange rate is not one of the significant determinants of FDI.

3.7 Transaction Cost Theory (Internalisation Approach)

Initially, Coase (1937) described transaction cost, which was developed further by McManus (1972), and then Buckley and Casson (1976) within the framework of international investment. According to McManus (1972), internalisation is a key issue for transaction cost and a foreign subsidiary of MNCs should be operated under central control in order to minimize cost. Buckley and Casson (1976) asserted that internalisation of a firm can minimize or eliminate some kinds of marketing cost. Uncertainty in clients, intermediate goods and time lags are some of reasons behind why a firm should be internalized.

Dunning (1977) accepted Buckley and Casson' internalisation approach as a first comprehensive international investment approach. The theory answered the question of why companies or investors – who had firm specific advantages - prefer to invest abroad instead of selling their firm specific advantage through licensing, exporting or making portfolio investment. Therefore, with the theory, the determinant of FDI shifted from country based

factors to firm based factors. According to the internalisation approach, a firm should minimize its dependency on other firms in term of its production. In order to obtain this type of system, the firm must be internalized. In other words, the firm must have power over its intermediate goods. If the firm supplies its necessary raw materials or intermediate goods abroad for its final goods, the internalisation of the firm will also make the firm "multinational" (Buckley and Casson, 1976).

Production stages are the most vital part of this theory. These stages are the processing of raw material, delivery of the intermediate good and production of the final good. Assume that a firm invests in research and development to improve existing products or to produce new products. The firm has to be sure of the sale of the products and marketing in the future whenever a product develops or is ready for sale. If these activities will not satisfy the expectation of the firm, the firm must set up its own marketing and sale departments. Therefore, the firm is internalized. Moreover, if the price of the intermediate product is much higher than the anticipation of the buyer, this situation also encourages the buyer to produce necessary intermediate goods within the firm or to take over the seller; this is called "forward integration". This situation arises especially while determining the price of knowledge-intensive assets. Furthermore, if there is a delay in the delivery of an intermediate good, once again, a firm which buys intermediate goods from supplier should be internalized because the delay may lead to the reduction of reputation of the firm or the failure of the firm.

For example, assume that petrol is a necessary intermediate good for the production of company A. High transaction cost or uncertainty in a supply market are likely to increase the cost of purchasing necessary petrol for producing final goods and even may be concluded as

a failure of company A. However, acquiring the petrol company by company A or opening new company in this sector eliminates the possible uncertainty in the supply side. This situation is different in a case of seller's perspective. Assume that the buyer firm's "sale agent" does not agree about the price of product, commission rate or promotion. This situation forces the seller to establish its own sale and marketing organisations even though this increases the seller's expenses. This type of internalisation is called "forward vertical integration".

For instance, US origin technology-intensive companies licensed its know-how to Japanese local companies. The expectation of the return of these companies from the licensing activity was long term. However, as time passed, Japanese companies improved their know-how, which is licensed from US companies, until the licensing contract finished. At the end, Japanese companies became the exporter. Even, some of the Japanese companies engaged in FDI in the US market. This situation demonstrates how internalisation is significant for the future of firms.

In this theory, changing profit and income taxes from one country to another may accelerate the internalisation period of domestic firms. Bucklet and Casson (1976) point out that companies engage in international production if markets assimilate foreign companies. They concluded that MNCs select investment locations depending on the rate of return; in other words, MNCs are willingly to engage in foreign markets until the cost of investing abroad exceeds the benefits (Casson, 1979 and Buckley, 1983). Whenever companies invest abroad and become multinational, the companies will use their enterprises in the home county to minimize possible losses of ownership-specific advantages. Thus, up to where marginal cost

equals marginal benefit, the internalisation process and direct investment of companies will continue (Moosa, 2002).

Some authors, as in other multinational enterprises theories, criticised the internalisation theory. Firstly, they criticised that to get an empirical outcome is not possible because the theory is very general. Another one is that FDI could not be tested directly via the theory (Moosa, 2002).

3.8 The Eclectic Paradigm

The eclectic paradigm was exposed by Dunning in 1977. Such paradigm has detailed the theory of FDI comprehensively. The paradigm has used a variety of theories in order to explain the pattern of FDI flows in the world. These theories are trade theory, firm theory, industrial organisation theory, location theory and internalization theory. As explained by Dunning (1977), transferring intermediate goods to worthy final goods is the main objective of firms. Inputs could be categorized under two clusters which are "accessible inputs" and "inaccessible inputs". The first type of input is input which is freely accessible company-specific advantages by other firms. Although obtaining different inputs among companies (such as distance to markets, labour cost, legal system, market size and so on) or obtaining different endowments among countries explain why domestic companies prefer to be "multinational", freely accessible country – specific and company-specific advantages minimize possible advantages to invest abroad or to be multinational.

Focus point in most of the multinational enterprise theories is the second type of inputs which is unique and inaccessible inputs of MNEs. These inputs are know-how, technology, product innovation, brand name, patent, size of firm, managerial skill, to obtain special raw material or low input cost due to economic of scale and market imperfection. Moreover, purchasing unique input of another firm by MNEs can be categorised under the second types of inputs. These inputs are also called ownership specific advantage or firm specific advantage[31]. However, the advantages can not only be special advantages for the MNEs but these advantages may be also obtained by other firms in the home market while other firms (including MNEs) in the world do not possess the advantages.

Dunning's eclectic paradigm also takes into account country based factors as an important determinant of FDI which is called "location specific advantage" (Rugman, 1979). The latter can either encourage or discourage foreign investors. Obtaining firm specific advantages only provides profit to MNCs from its direct investment but where a company should invest is another important issue. Local companies need to decide where they should invest; such a decision relates with Dunning's location specific advantage theory. Location advantages are input price, market size, economic growth, infrastructure, regulations and so on. For instance, while producing textile and electronic equipment created additional advantages to Japanese companies in 1970s and 1980s, British origin companies had a comparative advantage in the production of food and tobacco products (Dunning, 1980). Furthermore US origin companies had a comparative advantage in the production of transportation equipment whereas German companies had a comparative advantage in the production of chemicals (Dunning, 1979).

---

[31]Ownership specific advantage is advantage that an investor could maximize its profit in a host country if such advantages are obtained.

These location specific advantages of these countries are also partly mirroring the current firm-specific advantages of their companies.

On the other hand, MNEs have a unique advantage that domestic companies do not possess these are as followed; MNEs can:

- Diversify their risk by investing in different locations.

- Protect themselves against any exchange rate fluctuations by transferring their liquid assets from one currency to another.

- Minimize the possibility of strikes.

- Access workers easily.

- Reduce negative impacts of country or industry based problems (Dunning, 1977)

Up to that point, firm specific advantages and host country advantages are taken into account as a determinant of FDI. Firm specific advantages by firms demonstrate which firms should need to run its business in foreign markets. Location specific advantages determine where firms should invest to produce its products, if not; export will be the best option for the firms. According to Buckley and Davies' estimation, the volume of total licensing was only one-tenth of the total FDI in the world in the middle of the 1970s. Therefore, why did firms- who possess at least the firm specific advantage - mostly prefer to run its business abroad, in other words, internalising its advantages instead of externalising its advantages via licensing or making portfolio investment?

Dunning (1977 and 1979) answered the question with using internalisation theory which is the last stage of eclectic paradigm. Although possessing unique inputs provides some benefits

to the firm, possible externalising its advantages via selling or licensing is likely to minimize its benefits to the firm in accordance with the internalisation theory. Therefore, the firm should internalise itself. In other words, the firm should neither sell nor licence its unique advantages to foreign firms. The internalisation of the unique advantages

- eliminates the cost of licensing

- avoids government interventions

- takes advantage of the market imperfection

- avoids high transaction cost

- minimizes uncertainty in customers and suppliers.

The benefits of the internalisation of supplier or buyer are different. In the perspective of buyers, a firm should be internalised if there is uncertainty about the cost and availability of input or there is a delay in the delivery of intermediary products. In the perspective of sellers, a firm should be internalized (1) if price discrimination in market does not exist, (2) if the firm considers that the control of licensed product quality or service is difficult or costly and (3) if controlling a licensed advantage is costly.

The Dunning's eclectic paradigm predicts which company, industry or country attracts FDI. Dunning expected that the three parts of OLI will change during the period. Even, there are interactions among the three parts of OLI. Dunning (1977 and 1979) underscored that the main FDI-determinant of one country may not be an important determinant of another country.

The three possibilities of Moosa (2002) clearly show how Dunning's eclectic paradigm works. Moosa assumed that a company has an ownership-specific advantage and has demand for its specific product. He demonstrated how a company's decision will change with changing situations.

- The company licences its product, if the benefits of internalization of the product is less profitable than that of licensing and if the favourable factors of location exist in a demander's country.

- In a home country, the company will expands and will export demander foreign market if the internalisation of the product to the company is beneficial to the company and if the favourable factors of location exist in a demander's country.

- As a last possibility, the company will engage in FDI, if the internalisation of the product is beneficial for the company and the factors of location are favourable to invest abroad.

As explained by Dunning (1993), foreign investors are motivated by mainly three factors, which are the local advantage of the host country, ownership-specific advantages and "the presence of superior commercial benefits in an intra-firm as against an arm's-length relationship between investor and recipient" (UNICAD 1998, page 89) . According to UNCTAD (1998), the local advantage of a host country is the most significant one for attracting foreign investors. It is divided into three clusters, which are economic

determinants, business facilitation, and the policy framework for FDI. Since the 1980s, the importance of each determinant of FDI has changed over time due to the changing expectations of the investors (Dunning, 1997).

Gray and Gray (1981) and Yannopoulos (1983) used Dunning's eclectic theory to explain international banking. Initial attempt of Gray and Gray (1981) focused on same structure of Eclectic theory –OLI-. According to Gray and Gray (1981), the first requirement to invest abroad or to be multinational bank is to obtain ownership specific advantage which is (1) to have high credibility in a market, (2) to have efficient and productive work-force, (3) to have a brand name, (4) to have human and financial capital, (5) to obtain superior banking strategies and managerial skills and (Mutinelli and Piscitello, 2001 and Kim, 1993). Other two components of Eclectic theory in international banking are internalisation and location-specific advantages. In international banking, information plays an important role while taking an internalisation decision of banks because it is difficult for banks to control information between clients and banks. Location advantages are another important factor which determines where banks should invest. These advantages in the banking sectors are (1) to reach skilled labour, (2) to enter growing markets, (3) to reach high foreign exchange reserve locations and (4) to service banks' customers abroad (geographic distribution) (Gray and Gray, 1981 and Mutinelli and Piscitello, 2001). Moreover, (5) relatively less strict regulations in a banking sector and (6) high concentration in developing country' banking sector are other important location specific advantages in banking sector (Kim, 1993). Therefore, the locations specific advantages of Turkey are growing market, skilled labour, liberal banking system, and high profitability as a result of high concentration in the banking sector.

As a result, the change in the pattern of FDI and the increase in the share of FDI into the total private capital flows have encouraged researchers to investigate the determinants of direct investments of MNEs, specifically. Therefore, such factors have led to the development of a number of theories to explain FDI over time. These theories are the difference in rate of return, monopolistic advantage theory, product cycle theory, currency areas and exchange rate theories, oligopolistic advantage theory, transaction cost theory and Dunning's eclectic paradigm. Mainly, these questions are answered by these theories; why do local companies invest abroad? How are multinational companies competitive against host country companies? When do foreigners invest abroad? Why do multinational enterprises prefer direct investment instead of licensing or exporting? Where is the most appropriate place for MNEs to run business?

However, what we know is that each country has unique economic, social, political and cultural conditions. Therefore, factors to attract foreign direct investment are likely to change from one country to another. Moreover, the determinant of direct investment in a service sector in a host market may be different than that in the manufacturing sector. Therefore, each sector may have different key factors to attract FDI. The flip side of the coin, the impact of the direct investment on the host market can be different from one country to another. Moreover, service FDI may contribute host countries' economy more than manufacturing FDI. In conclusion, each country should be investigated specifically to identify the impact and determinant of MNEs. In this framework, two way linkages (1) between foreign bank penetration and banking variables (2) between foreign bank penetration and host country risk in Turkey is investigated in this thesis using time-series models. Moreover, the internal

relationship among the private capital flows, which are foreign direct investment, foreign portfolio investment and foreign bank penetration, is explored using the multivariate VAR approach.

3.9 References

[1] Agarwal, J. P. (1980). "Determinants of Foreign Direct Investment: A Survey." Weltwirtschaftliches Archiv **116**: 739-773.

[2] Aharoni, Y. (1966). "The Foreign Investment Decision Process" Division of Research, Graduate School of Business Research, Harvard University, Boston.

[3] Aliber, R. Z. (1970). "A Theory of Direct Foreign Investment" in Charles P. Kindleberger, ed., The International Corporation: A Symposium, Cambridge: MIT Press.

[4] Azrak, P. and K. Wynne (1995). "Protectionism and Japanese Direct Investment in the United States." Journal of Policy Modeling **17**: 293-305.

[5] Bain, E., J. Fung and I Harper (2003). "Multinational Banking: Historical, Empirical and Case Perspectives." Edited by A.W. Mullineux and V. Murinde. UK and USA: Edward Elgar

[6] Blomstrom, M., M. Zejan and A. Kokko (2000). "Foreign Direct Investment: Firm and Host Country Strategies." London: MacMillan Press.

[7] Buckley, P. J. and M. Casson (1976). "The Future of the Multinational Enterprise" London: MacMillan Press.

[8] Buckley, P. J. (1983). "Macroeconomic Versus International Business Approach to Direct Foreign Investment: a Comment on Kojima's Approach" Hitotsubashi Journal of Economics **24**(1): 95-100.

[9] Campos, N. F. and Y. Kinoshita (2008). "Foreign Direct Investment and Structural Reforms: Evidence from Eastern Europe and Latin America" IMF Working Papers, **No.906**: 1-38.

[10] Cantwell, J. (2000) 'A Survey of Theories of International Production." In the Nature of the Transnational Firm, London: Routledge.

[11] Caves, R. (1971). "International Corporations: The Industrial Economics of Foreign Investment" Economica **38**: 1-27.

[12] Dörrenbächer C. (2000). "Measuring Corporate Internationalisation: A Review of Measurement Concepts and their Use" Intereconomics **35**(3): 119-126.

[13] Dunning, J. H. (1977). "Trade Location of Economic Activity and the Multinational Enterprise. A Search for an Eclectic Approach" in The International Allocation of Economic Activity. Edited by B. Ohlin, P. O. Hesselborn, and P. J. Wiskman, London: MacMillan.

[14] Dunning, J. H. (1979)."Explaining Changing Patterns of International Production: in Defense of the Eclectic Theory." Oxford Bulletin of Economics and Statistics.

[15] Dunning, J. H. (1980). "Toward an Eclectic Theory of International Production: Some Empirical Tests." Journal of International Business Studies **11**(1): 9-13.

[16] Dunning, J. H. (1993). "Multinational Enterprises and the Global Economy." Wokingham: Addison-Wesley.

[17] Dunning, J. H. (1997). "Re-evaluating the Benefits of Foreign Direct Investment, in Alliance Capitalism and Global Business." London: Routledge.

[18] Dunning, J. H. and S. M. Lundan (2008). "Multinational Enterprises and the Global Economy." Second Edition, Cheltenham: Edward Elgar.

[19] Dunning, J. and A. Rugman (1985). "The Influence of Hymer's Dissertation on the Theory of Foreign Direct Investment." <u>American Economic Review</u> **75**(2): 228-232.

[20] Forsgren, M. (2009). "Theories of the Multinational Firm. A Multidimensional Creature in the Global Economy." Cheltenham: <u>Edward Elgar</u>.

[21] Gray, J. and P. Gray (1981). "The Multinational Bank: A Financial MNC?" <u>Journal of Banking and Finance</u> **5**(1): 33-63.

[22] Grazia Ietto-Gillies, (2005). "Transnational Corporations and International Production: Concepts, Theories and Effects." Cheltenham: <u>Edward Elgar</u>.

[22] Grubel, H. G. (1977). "A Theory if Multinational Banking". <u>Banca Nazionale del Lavoro</u> **123**:349-363

[23] Hymer, S. (1960). "The International Operations of National Firms: A Study of Direct Foreign Investment." PhD Dissertation. <u>MIT Press</u>.

[24] Hymer, S. (1976). "The International Operations of National Firms: A Study of Direct Foreign Investment." Boston: <u>MIT Press</u>.

[25] Hufbauer, Gary C. (1975). "The Multinational Corporation and Direct Investment." in Peter B. Kenen, eds., International Trade and Finance, Cambridge: Cambridge University Press.

[26] Iversen, C. (1936). "International Capital Movements" Oxford: Oxford University Press.

[27] James B. A. (2008). "Determinants of Foreign Direct Investment in Malaysia." Journal of Policy Modeling **30**: 185-189.

[28] Kehal, H. S. (2004). "Foreign Investment in Developing Countries." New York: Palgrave Macmillan.

[29] Kim T. (1993). "International Money and Banking." London: Routledge.

[30] Kindleberger, C. P. (1969). "American Business Abroad: Six Lectures on Direct Investment." New Haven: Yale University Press.

[31] Kinoshita, Y. and Campos, N. (2001). "Agglomeration and the Locational Determinants of FDI in Transition Economies." CUNY and University of Newcastle, mimeo.

[32] Knickerbocker F. T. (1973). "Oligopolistic Reaction and Multinational Enterprise." Boston: Harvard University.

[33] Lall, S. and Paul S. (1977). "Foreign Investment, Transnationals and Developing Countries." London: Macmillan.

[34] Lipsey R. E. and B. Swedenborg (1999). "Wage Dispersion and Country Price Levels." NBER Chapters, in: International and Interarea Comparisons of Income, Output, and Prices, National Bureau of Economic Research.

[35] McManus, J. C. (1972). "The Theory of the International Firm", In G. Paquet (ed.), The Multinational Firm and the Nation State, Don Mills Ontario: Collier-Macmillan.

[36] Moosa I. A. (2002). "Foreign Direct Investment: Theory, Evidence and Practice." London: Palgrave.

[37] Mukherjee, A. and K. Suetrong (2007). "Unionisation Structure and Strategic Foreign Direct Investment." GEP Research Paper Series 22, University of Nottingham.

[38] Mutinelli, M. and L. Piscitello (2001). "Foreign Direct Investment in the Banking Sector: the Case of Italian Banks in the 90s." <u>International Business Review</u> **10**(6): 661-685.

[39] Ramirez, M. D. (2006). "Economic and Institutional Determinants of Foreign Direct Investment in Chile: A Time Series Analysis 1960–2001." <u>Contemporary Economic Policy</u> **24**: 459–471.

[40] Razin, A., E. Sadka, and C. Yuen (1996). "A Pecking Order Theory of Capital Inflows and International Tax Principles." <u>CEPR Discussion Papers 1381</u>.

[41] Rugman, A. M. (1979). "International Diversification and the Multinational Enterprise." Lexington: <u>D.C. Heath</u>.

[42] Rugman, A. M. (1982). "New Theories of the Multinational Enterprise." London, Croom Helm and New York: <u>St. Martin's</u>.

[43] Tobin, J. (1969) "A General Equilibrium Approach to Monetary Theory." <u>Journal of Money, Credit, and Banking </u>**1**:15–29.

[44] UNCTAD, (1998). "World Investment Report 1998: Trends and Determinants." New York: United Nations Publications.

[45] U.S. Department of Commerce, Bureau of the Census (1937a). Census of Manufactures.

[46] U.S. Department of Commerce, Bureau of the Census (1937b). Maps of Selected Industries Reported at the Census of Manufactures.

[47] Weintraub, R. (1967). "Studio Empirico Sulle Relazioni di Lugo Andare Tra Movimenti di Capitali e Rendimenti Differenziali." Rvisita Internalizionale di Scienze Economiche e Commerciali **14**: 401-415.

[48] Williams, B. (1997). "Positive Theories of Multinational Banking: Eclectic Theory versus International Theory." Journal of Economic Surveys **11**: 71-100.

[49] Vernon, R. (1966). "International Investment and International Trade in the Product Cycle." Quarterly Journal of Economics **80**(2): 190-207.

[50] Yamin, M. (2000). "A Critical Re-evaluation of Hymer's Contribution to the Theory of the Transnational Corporation." in the Nature of the Transnational Firm, London: Routledge.

[51] Yannopoulos, G. (1983). "The Growth of Transnational Banking." Edited by M.Casson.

London: George Allen and Irwin.

Chapter 4: Foreign Bank Penetration and Domestic Banking System: Empirical Evidence from Turkey Based on VAR Approach

Dervis Kirikkaleli

Stirling Management School, Division of Economics, University of Stirling, FK9 4LA

Email: dervis.kirikkaleli@stir.ac.uk

Telephone: +44 (0) 759 100 5766

4.1 Abstract

In this study, I aimed to investigate the short run and long run relationship, if it exits, between foreign bank penetration (FBP) and determinants of bank performance namely, domestic bank assets, domestic credit and banking profitability in Turkey using quarterly data from 1994Q1 to 2009Q4, while controlling DGDP and 2001 financial crisis. Using a VAR model, and the Johansen co-integration test, I examined the long run relations between FBP and bank performance. However, I could not detect any long run relationship between DFBP and domestic bank assets and between DFBP and domestic credit. Using Granger causality, impulse response function, and variance decomposition, I examined the short run dynamics. The outcome of the Granger causality test indicates that there is unilateral causality which runs from domestic bank assets to DFBP at 10% level. Moreover, I also found feedback causality between DFBP and domestic credit at 5% level. By employing impulse response functions, my findings reveal that rising foreign bank assets in Turkey tend to increase domestic bank assets and credit availability in short run, vice versa. Surprisingly, no

significant impact of foreign bank penetration on profitability in the banking sector is observed.

4.2 Introduction

The last two decades mirror many changes in the financial sector in developing countries due mainly to the globalisation of finance sectors. In the same direction with the globalisation process, FDI and multinational bank activities have gradually risen in developing countries. Rising foreign bank activities in developing countries have motivated researchers to investigate foreign banks comprehensively. The share of banking sector assets held by foreign banks in the developing countries, on average, increased to almost 40% in 2005 from 22% in 1996. Moreover, total credit provided by foreign banks in the developing countries jumped to 26% of GDP in 2008 from 10% in 1996. In other words, a high growth rate was achieved in credit provision by foreign banks and share of foreign banks in developing countries. Overseas banks have played a significant role in domestic banking sectors in the developed and developing countries (Claessens et al., 2008). Supporters of this pattern have underlined the positive impact of foreign bank penetration on capital ratio, efficiency and competition, credit availability, managerial skills, technology, and innovation capacity. However, others have taken into account the flip side of the coin by blaming foreign bank penetration as a main reason behind the destabilisation of the domestic banking system. Empirical studies have revealed that the positive impact of foreign bank penetration on the domestic banking system predominated (Cull and Peria, 2010). Due to this, politicians in the world have tried to encourage foreign banks to take advantage of them since the beginning of the 1980's. Therefore, this also made the determinants of foreign bank penetration an

interesting area to research. As time passes, both empirical and theoretical findings in this context have risen.

This study aims to reveal the long run and short run relationship between foreign bank penetration and bank performance (namely, domestic bank assets, domestic credit and bank profitability), while controlling GDP and 2001 financial crisis in Turkey. In this perspective, my hypotheses are as follows:

Hypothesis 1: Rising domestic bank assets are associated with increasing foreign bank assets and vice versa.

Hypothesis 2: There is positive linkage between credit availability and foreign bank penetration.

Hypothesis 3: Although the impact of profitability on foreign bank penetration is positive, reverse relationship is negative.

In the first model, there is unilateral causality which runs from domestic bank assets to DFBP at 10 % level. I found that in the short run, there is a positive relationship between DFBP and domestic bank assets by analysing the impulse response functions. In the second model, my findings indicate that there is bilateral causality between DFBP and domestic credit at 5% level. While rising foreign bank assets in Turkey are associated with higher credit availability in the domestic market, domestic credit in the market has positive impact on the DFBP in the short run, as expected. In line with the literature, the sign of the relationship between DFBP and domestic credit is positive in the second model as I expected. Finally, my study reveals that no Granger causality between profitability and DFBP is found. The response of DFBP to one standard deviation shock in PRO is significant and positive at 3rd quarter. The reverse effect is surprisingly positive but not statistically significant.

This study is organised as follows. Section 4.3 provides an overview of the existing literature on the concept. Section 4.4 discusses developments in the banking sector of Turkey since the 1980's. Section 4.5 and 4.6 presents the data and empirical methodology that is used in this study, respectively. Section 4.7 reports the empirical findings from the VAR models. Lastly, section 4.8 concludes.

4.3 Literature Review

The on-going negotiation between the EU and Turkey about the integration of Turkey into the EU and the gradual rise of the share of banking assets to GNP have made Turkey a more interesting country to investigate and opened new debate on the Turkish banking sector.

Although the performance of foreign and domestic banks in Turkey was heavily investigated by Osman (1995)[32], Ertugrul and Zaim (1999)[33], Isik and Hassan (2002)[34], Yildirim (2002)[35], Demir et al. (2005)[36], Ozkan-Gunay and Tektas (2006)[37], Aysan and Ceyhan (2008)[38],

---

[32] Using a non-parametric frontier technique, the primary purpose of the paper of Osman (1995) is to investigate the impact of liberal policies on the Turkish banking system after the 1980's. His findings reveal that financial liberalisation policies improved the allocative and technical efficiency of Turkish banks.

[33] Similar to the finding of Osman (1995), Ertugrul and Zaim (1999) found that financial reforms in Turkey seem to have positive impact on the Turkish banking system using the Data Envelope Analysis (DEA) approach.

[34] Isik and Hassan (2002) aim to analysis the efficiency in the Turkish banking system over the period of 1988-1996. Their finding, not surprisingly, mirrors that foreign banks are more efficient than domestic banks.

[35] Yildirim (2002) also evaluate the banking efficiency in Turkey using the DEA approach over the period of 1988-1999. He concluded that chancing the ownership of commercial banks directly affects the performance of them. Moreover, consistent with the finding of Denizer et al. (2007), he finds that the Turkish banking sector struggles from scale inefficiency.

[36] Demir et al. (2005) assess the efficiency of Turkish banks, comparing the pre and post liberalisation periods. Their study reports that the technical efficiency of banks in Turkey had been affected by bank ownership, loan quality and bank profitability.

[37] Using the DEA approach, Ozkan-Gunay and Tektas (2006) aim to investigate the technical efficiency of commercial banks over the peroid of 1990-2001.

[38] Aysan and Ceyhan (2008) use a panel fixed effects regression technique to assess the performance of banks in Turkey. Their finding shows that (1) rising bank capitalisation is associated with more efficient banking system

Denizer et al. (2007)[39] and Fukuyama and Matousek (2011)[40], the short run and long run relationship, if it exists, between banking performance and foreign bank penetration has not been explored. More specifically, the objective of this paper is threefold. First, I aim to investigate the relationship between domestic bank assets and foreign bank penetration in the long run and short run in Turkey. The second objective of this paper is to detect the long run and short run relationship, if it exists, between domestic credit and foreign bank penetration. To investigate relationship between foreign bank penetration and banking profitability, if it exists, is a final objective of this paper.

4.3.1 Foreign Bank Penetration and Domestic Banks

Knickerbocker (1973) developed the "follow the leader" theory combining it with the defensive FDI approach. According to his approach, in an oligopolistic market, direct investment of a firm will encourage its rivals to invest in the same foreign market, because if the rivals do not follow the leader company – which invests first into the foreign market-, the rivals will lose their competitive stature in its home market. However, how foreign bank penetration affects the behaviour of domestic banks in the host country and how rising (or falling) domestic assets in the bank system will affect the location choice of the foreign bank has not been deeply explored. Regarding domestic bank assets, only one study - Engwall et

---

but rising the number of branches has the opposite effect on efficiency; (2) there is a complementary relationship between efficiency and loan ratio.

[39] Another study - Denizer et al. (2007) - uses DEA approach to assess banking efficiency in Turkey, comparing the pre and post liberalisation periods over the period of 1970-1994. The main two findings are as follows; (1) decline in efficiency as a result of the liberalisation program in Turkey and (2) existing scale problems in the banking sector. They also underline that the main reason behind the declining efficiency is raising macroeconomic and financial instability.

[40] More recently, Matousek and Fukuyama (2011) investigate the efficiency of the Turkish banking sector between 1991 and 2007 using a two-stage network model. Their most interesting finding is that in Turkey foreign banks do not have a higher efficiency score than others banks in the sector.

al. (2001) - analyse the impact of the foreign bank assets on domestic bank assets in the Nordic countries and they found that rising (or falling) foreign bank assets were associated with higher (or lower) domestic bank assets in Norway, Sweden and Finland. However, this hypothesis did not hold in Denmark. Otherwise, there is still big question mark about the possible impact of domestic bank assets on foreign bank penetrations. In other words, the reaction of foreign banks when the domestic bank assets rise (or fall) has not been investigated in Turkey. Therefore, this study also aims to fill this gap. Hypothesis 1 considers that the impact of domestic bank assets on foreign bank penetration is positive and the reverse impact is also positive.

4.3.2 Foreign Bank Penetration and Domestic Credit

Similar to Hypothesis 1, Hypothesis 2 considers that rising foreign bank penetration in Turkey is associated with increasing credit availability and vice versa. Availability of credit to the private sector is crucial for financial development and economic growth in both developed and developing countries. Even, credit availability has been used widely as a proxy for financial development in empirical papers. Therefore, it is also important to know the impact of foreign bank penetration on domestic credit for politicians because the one of the main reason behind the motivation of politicians to attract foreign banks interest is its possible impact on credit availability in their host markets. Overseas bank penetration to a host country has been associated with better financial conditions, but this finding mostly indicates that foreign banks are less willing to lend to domestic companies, especially small ones, than domestic banks do. This may arise due to the lack of information and difficulty and cost to gather information about small companies in the host markets.

Although some studies – Bleger and Rozenwurcel (2000), Goldberg (2000), Berger et al. (2001), Satta (2004), Clarke et al. (2005), Jeon et al. (2006), Main (2006), Clarke (2006) and Detragiache et al. (2008) compare the credit provision of domestic and overseas banks to the domestic market in a specific country or group of countries, the dynamic relationship between foreign bank penetration and credit availability has remained unexplored. The findings of Berger et al. (2001) reveal that small companies in Argentina has a lesser chance of getting credit from foreign and large banks relative to large companies. Moreover, Mian (2006) finds that foreign banks in Pakistan are less willingly to lend to opaque businesses relative to domestic banks. The findings of Bleger and Rozenwurcel (2000) show that between 1996 and 1998, foreign bank penetration led to the reduction of bank credits to small enterprises to 16% from 20% in Argentina. Goldberg (2000) by analysing banking sectors in Mexico and Argentina find that the loan growth of overseas banks was much more than that of domestic banks in these countries. Furthermore, the overseas banks contributed positively to both the volatility of lending and credit. They also point out that credit growth of foreign banks in these countries did not change dramatically throughout the domestic crises at the end of the 1990's.

Clarke (2006) investigates the effect of foreign bank penetration on domestic market credit availability using the surveying technique in 38 transition and developing countries. He points out that domestic credit is positively affected by foreign bank penetration. However, his findings also indicated that the contribution of foreign banks to credit provision for small and medium companies is less than that of domestic banks. Jeon et al. (2006) analyse the Korean banking system and compare the performance of the domestic and foreign banks in the market to answer the question of how foreign banks contributed to the stabilisation of the Korean economy. They conclude that the total lending those foreign banks provided to the

Korean economy declined when the financial crisis erupted in 1997. However, there was no reduction in won-denominated loans. Apart from that, they find that after the Asian crisis, the volume of total loans that domestic banks provided did not decline. Satta (2004), using bank data between 1991 and 2001, investigates credit availability of foreign banks to small enterprises in Tanzania. The finding of Satta (2004) indicates that foreign banks that financed small enterprises are insignificant relative to domestic banks. The author advises the Tanzanian government to prepare a new policy to encourage overseas banks to expand their lending to small enterprises in Tanzania. Cross-country level evidence of Detragiache, Tressel and Grupta (2008) also supports the idea that foreign bank penetration is associated with less credit provision. This evidence is based on 89 low income countries for the period of 1999-2002.

A different finding in the issue comes from Clarke et al. (2005) who conclude that large foreign banks in Chile and Colombia lent more to small and medium size enterprises than domestic banks. Moreover, medium and large foreign banks in Argentina and Chile achieved higher growth of lending to small enterprises relative to medium and large domestic banks during the period of 1997-2000. In most cases, the evidences indicate that foreign banks are less willing to lend to domestic companies, especially small ones, than domestic banks are. This may arise due to lack of information and difficulty and cost to gather information about small companies and because different economic, financial, political and social factors among countries.

4.3.3 Foreign Bank Penetration and Profitability

As mentioned in the previous section, Hypothesis 3 is related to profitability in the banking sector in Turkey. Hypothesis 3 considers that although the impact of profitability on foreign bank penetration is positive, the reverse relationship is negative. The substantial rise of foreign bank assets in the world has received considerable attention by both researchers and politicians. In common with both empirical and theoretical researches, profitability in a host country is a main driving factor of foreign banks. The main empirical findings about the impact and determinant of foreign bank penetration are presented in Table 17. Claessens et al. (2001) investigate the impact of foreign bank penetration on domestic banks using almost 8000 banks from 80 countries for the period of 1988-1995. They find that foreign banks tend to run businesses more profitably relative to domestic banks and the rising of foreign banks in these markets tends to reduce host banking sector's profitability. Denizer (2000) examines the effect of foreign banks on the banking sector in Turkey using annual data sets from 1980 to 1997. His findings reveal that foreign bank penetration is inversely related to the return on assets. Zajc (2002) aims to find the effect of overseas banks on the performance of domestic banks in six European transition countries. His findings indicate that overseas banks tend to reduce profitability and raise the cost of indigenous banks.

The study of Lensink and Hermes (2004) proposes to develop the study of Claessens (2001). They find that foreign bank penetration does not have a strong impact on the domestic profitability at lower levels of economic development. Furthermore, at higher levels of economic development of host countries the impacts are not clear because foreign bank penetration is either associated with falling profitability in the banking sector or not associated with any change in profitability. Using a panel data of 17 Thai banks over the

1990-2002 period, Okuda and Rungsomboon (2004) assessed the effect of foreign bank penetration on the Thai banking sector. Their findings indicate that rising competition in the domestic banking sector due to the penetration of foreign banks has a negative impact on domestic banks in the short run; foreign bank penetration reduces domestic profitability and increases overhead expenses.

Apart from the impact of foreign bank penetration to the host country, Facarelli and Pozzolo (2000) and Bumin (2007) investigate the possible effects of profitability on foreign bank penetration via investigating the factors influencing the location choice of overseas banks. The empirical result of Facarelli and Pozzolo (2000)'s paper using 260 banks data from OECD countries indicates that profitability resulting from an expected growth is one of the main factors influencing the location choice of foreign banks, especially for subsidiaries. Moreover, integration between the host and home markets plays a role on the decision of foreign banks. Bumin (2007) tries to identify the key factors determining foreign banks in Turkey using data from January 2003 to June 2006. His findings indicate that profitability in the banking sector is the main factor influencing foreign banks. Furthermore, economic growth, potential demand for the banking services are other determinants of foreign banks in Turkey. However, none of these papers in this section investigated two way linkages between foreign bank penetration and profitability using the same data set. I aim to fill this gap for Turkey via investigating the long run and short run dynamics between profitability and foreign bank penetration.

Table 17: Determinant and Impact of Foreign Bank Penetration

Profitability and Foreign Bank Penetration				
Author(s)	**Profitability as a significant determinant of foreign bank** penetration	**Impact of foreign bank penetration on domestic profitability**	**Period**	**Data**
Claessens et al. (2001)	None	(Negative)	1988-1995	80 countries
Denizer (2000)	None	(Negative)	1980-1997	Turkey
Zajc (2002)	None	(Negative)	1995-2000	Six European transition countries
Lensink and Hermes (2004)	None	Fail to find impact	1990-1996	Same data set that used by Claessens et al. (1998)
Okuda and Rungsomboon (2004)	None	(Negative)	1990-2002	Thailand
Facarelli and Pozzolo (2000)	(Positive)	None	1994-1997	OECD countries
Bumin (2007)	(Positive)	None	Jan. 2003-June 2006	Turkey
Credit and Foreign Bank Penetration				
Author(s)	**Credit as a significant determinant of foreign bank** penetration	**Impact of foreign bank penetration on domestic credit**	**Period**	**Data**
Goldberg et al. (2000)	None	(Positive)	1995Q2-1999Q2	Argentina and Mexico
Clarke (2006)	None	(Positive)	-	38 transition and developing countries
Domestic Banks and Foreign Bank Penetration				
	Domestic bank assets as a significant determinant of foreign bank penetration	**Impact of foreign bank penetration on domestic bank assets**	**Period**	**Data**
Engwall et al. (2001)	None	(Positive)	-	Norway, Sweden, Finland and Denmark

4.4 Data

The time series variables used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 69 observations. The time series data were used in this paper are collected from the Central Bank of the Republic of Turkey and The Banks Association of Turkey. The time series variables used in the models are shown below;

FBP: Total assets held by foreign banks in the banking sector. Holding 50% share acquisition by a foreign bank or foreign investor in a host country is accepted as a minimum requirement to have an important influence on the management of acquired bank in Turkey. In other words, acquiring 50% or more shares of domestic bank are recorded as a foreign bank in most of the countries. However, FDI arises when a foreign investor acquires 10% or more shares of domestic company and obtains, moreover, managerial control on domestic company. Therefore, there is a difference between banking FDI and total assets of foreign banks.

In this paper, I accepted that FBP measured as the total value of foreign bank assets. It is important to know the relationship between FDI and foreign bank activities before to select foreign bank assets as a proxy for foreign bank penetration. Nigh et al. (1986) and Goldberg and Johnson (1990), as expected, found positive relationship between US FDI and foreign activities of US banks. Similar to Nigh et al. (1986) and Goldberg and Johnson (1990), Focarelli and Pozzolo (2000) found positive relationship between non-bank FDI and bank choice of location in the OECD countries. In addition, the study of Miller and Parkhe (1998)

reveal that there is correlation between non-bank FDI and bank FDI. Grosse and Goldberg (1991) and Esperanca and Gulamhussen (2001) used aggregate foreign bank assets while examining the determinants of foreign bank penetration, same as I used. It is well-known that lending to the private sector depends on the supply and demand for loans[41]. As FDI in the banking sector raises the credit provision to the host market. Thus, this will increase total assets. In other world, this will increase the size of the balance sheet and therefore FDI affects FBP.

PRO: Return on assets after tax in the banking sector was used as a proxy for profitability in the banking sector. The raw data were used because some observations for the variable are negative.

CREDIT: Total domestic credit provided by banks, including both domestic and foreign banks in Turkey. The variable also was expressed in its logarithmic transformation.

DB: Total assets in the banking sector, excluding the foreign ones in the Turkish banking sector. The variable was expressed in its logarithmic transformation.

GDP: nominal GDP is used as a control variable since it is believed that GDP is an important determinant of FDI, FBP and FPI. The findings of Buch (2000), Brealey and Kaplanis (1996) and Yamori (1996) Herrero and Peria (2005) underlined that GDP in host countries seems most important factor that affects the location decision of multinational banks. Similar to these findings, the study of Luca and Spatafora (2012) implies that rising GDP is associated with higher capital flows in developing countries.

---

[41] While demand for loans is simply affected by real GDP, prices, interest rate and so on, supply for loans is affected by loan demand, loan rate and so on.

DUM2001: DUM2001 is a dummy variable and used as a control variable since it is believed that financial crisis in 2001 led to significant changes in the Turkish banking sector.

**Table 18. Descriptive Statistics for the Variables of FBP, PRO, CREDIT and DB**

	FBP	PRO	CREDIT	DB
Mean	8.900	1.191	10.769	11.852
Median	8.600	1.298	10.479	11.741
Maximum	11.280	5.023	12.401	13.049
Minimum	7.357	-3.249	9.755	10.739
Std. Dev.	1.212	1.572	0.774	0.671
Skewness	0.797	-0.831	0.868	0.294
Kurtosis	2.427	4.309	2.379	1.926
Jarque-Bera	8.266	12.881	9.788	4.307
Observations	69	69	69	69

Note: the data bases on 64 observations (1994Q1-2009Q4)
Source: The Bank Association of Turkey

Descriptive statistics for FBP, PRO, CREDIT, and DB variables are demonstrated in Table 18. The FBP variable shows variation, ranging from 7.36 to 11.28. Moreover, there is also variation in the DB, CREDIT, and PRO variables, ranging from 10.74 to 13.05, from 9.76 to 12.40, and from -3.25 to 5.02, respectively. Table 18 also provides information about the distribution of the variables by using Skewness, Kurtosis, and Jarque-Bera techniques. Whereas FBP, CREDIT, and DB variables are positively skewed, the PRO variable is negatively skewed. Regarding Kurtosis, the distribution of FBP, CREDIT and DB variables has large tails (more peaked) while the distribution of the PRO variable has small tails (flatter). In addition, the result of the Jarque-Bera test reveals that the distribution of FBP, CREDIT variables, and PRO variables is normal but the null hypothesis that DB is normal distribution cannot be rejected with a $\chi^2 = 4.307$ (p-value = 0.116).

Figure 3 shows the total assets of foreign banks in Turkey, between 1994 and 1996, the growth of foreign bank assets was very small. Although it is difficult to see in Figure 3, 8.5 % quarterly growth was achieved in foreign bank assets between 1996 and 2000, and then from 2000 to 2003 the growth was negative due to economic and banking crisis. Since the end of 2003, except Q4-2008, and Q1 -2009, foreign bank penetration has accelerated because of positive macroeconomic indicators, high profitability in the banking sector, new FDI law and reduction in corporate tax. Figure 4 and 5 present credit availability and total assets in the Turkish banking system. Both Figures have similar pattern with Figure 3 as expected because of using accumulated data and expected positive linkage between FBP and these variables. Figure 6 shows profitability in the Turkish banking sector from 1994 to 2009, based on quarterly data. Such variable, in general fluctuated between 1 % and 3 %, except 1994 (economic crisis period) and from Q3 2000 to Q2 2002 (when banking and economic crisis were erupted).

Figure 3: Total Assets of Foreign Banks (US Billion $)
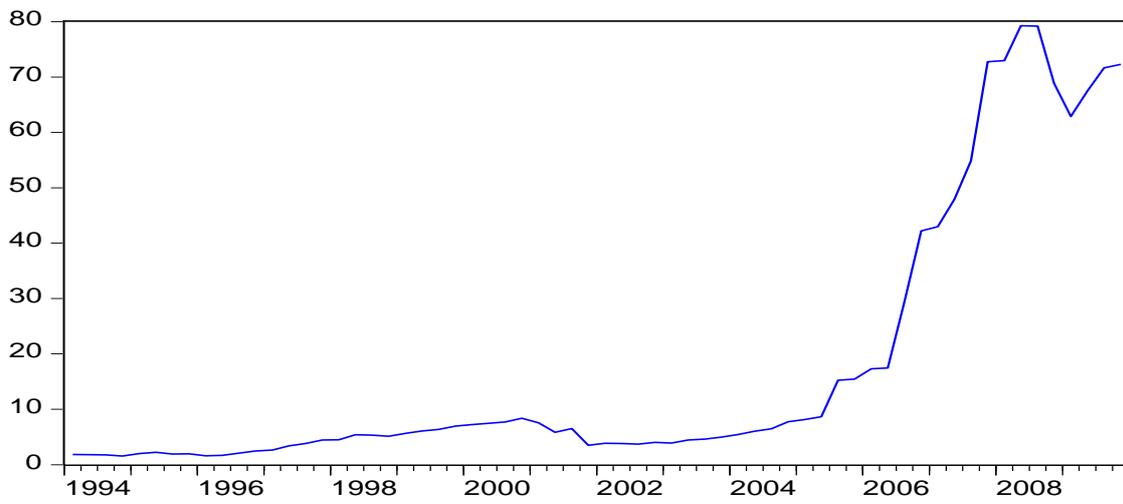
Source: The Bank Association of Turkey

Figure 4: Total Credit in the Banking Sector (US Billion $)
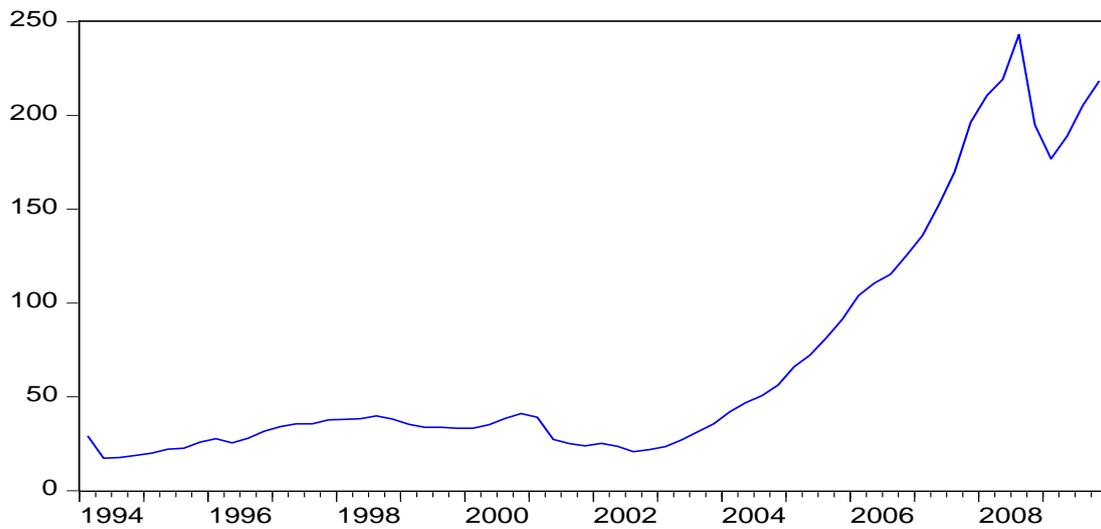
Source: The Bank Association of Turkey

Figure 5: Total Assets in the Banking Sector (US Billion $)
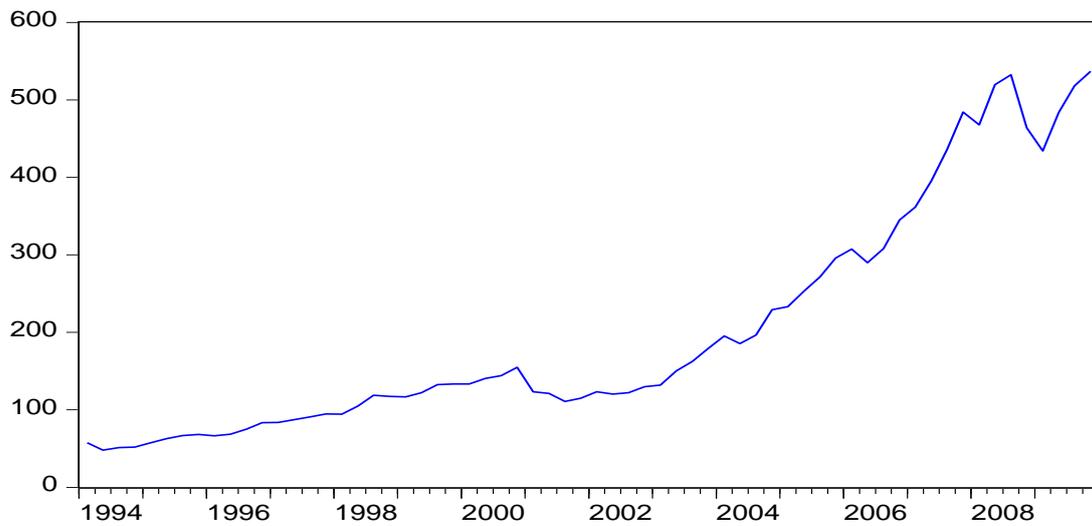
Source: The Bank Association of Turkey

Figure 6: Return on Assets in the Banking Sector
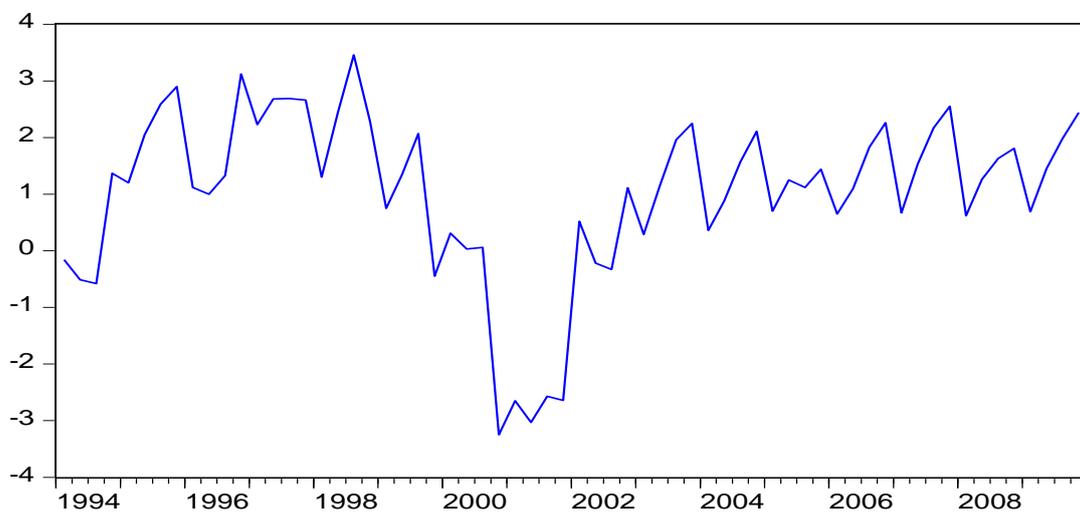
*Source: The Bank Association of Turkey*

4.5 Methodology

Although numerous numbers of papers investigated either determinant or impact of foreign bank penetration in developed or developing markets in the short run as explained in the section 4.3.1, 4.3.2 and 4.3.3, the long run linkage between foreign bank penetrations and banking variables has not been explored. What is well known is that governments have been motivated by positive impacts of foreign capital on their markets. However, dynamic relationship – in short run and in long run – has not been investigated using same data set. It is important for academicians and politicians to know the short run and long run relationship between foreign bank assets and bank variables to have comprehensive view about the concept. Therefore, this paper is likely to open new debate on this subject, not only in the Turkish banking system. In this empirical study, I tested the short run and long run relationship, if it exits, between foreign bank penetration and determinants of bank performance (namely, total bank assets, domestic credit and banking profitability) in Turkey), while controlling DGDP and 2001 financial crisis. The first step is to determine whether the variables have a unit root or not. The early paper – Dickey and Fuller (1979)[42] - investigates how to test unit root in the time series variables. Then, Phillips and Perron (1988) develop another unit root test which is called PP unit root test. The main difference between the ADF and PP tests arises in a case of heteroskedasticity and serial correlation. The results of these tests may be significantly different because of different ways to correct serial correlation when the sample size is finite. Moreover, the PP and ADF tests have low power when AR root is close to 1 (Cochrane, 1991). Thus, the alternative hypothesis may be accepted wrongly when the sample size is small (DeJong et al., 1992). The conventional PP and ADF tests are still the most popular unit root tests in macroeconomic and financial modelling despite these

---

[42] Dickey and Fuller (1979) are advice to the readers for more details about the concept.

weaknesses of such tests. However, as suggested by Zivot and Wang (2005), to overcome these problems, more efficient unit root tests - Ng-Perron (2001) and ERS point optimal (1996) - were used to detect whether the banking variables have unit root, in other words, are non-stationary. The fluctuation of time series data around a trend or an intercept reflects stationarity of time series. The nature of time series data treats as a non-stationary time series because of trending, wandering around an intercept and wandering around a trend. Another problem in the unit root tests appears in a case of break. Perron (1989, pp. 1) underlined that "standard tests of the unit root hypothesis against trend stationary alternatives cannot reject the unit root hypothesis if the true data generating mechanism is that of stationary fluctuations around a trend function which contains a one-time break". In other words, Perron (1989) argued that although a time series variable is I(0), the result of unit root tests may indicates that such variable is I(1) if there is a break in trending data (see, Perron, 1989). Thus, stationarity processes with breaks are easily mistaken from unit root processes.

The PP test of Perron and Ng (1996) was developed by Ng and Perron (2001) using the GLS detrending procedure of ERS. The unit root test is constructed by four test statistics which are MZα, MZt, MSB, and MPT. In my models, only MZα test statistic was employed and its results are shown in Table 19. The MZα test statistic is defined as; MZα = (T^{-1} $(y_T^d)^2$- f_0)/(2$_K$) where K=$\sum_{t=2}^{T}(y_{t-1}^d)^2/T^2$, the statistics MZ$\alpha$ is a more effective version of Zα of the PP in terms of size and power.

Another unit root test that is used in this paper is the ERS point optimum. The latter, was developed by Elliott et al. (1996), and is based on the quasi-differencing regression which is defined as; d (v_t|a) = d (z_t|a)'ɰ (a) +e$_t$; where d (v_t|a) and d (z_t|a) are quasi- differenced data for v_t and z_t, respectively. Moreover, e$_t$ is the residual term and ɰ (a) is the coefficient to be

estimated in the quasi-differencing regression. While the null hypothesis tested is $\alpha = 1$, the alternative hypothesis tested is $\alpha = \bar{a}$ where $\bar{a} = 1 - 7/T$ when z_t contains only a constant, and $\bar{a} = 1 - 13.5/T$ when z_t contains both a constant and a trend. The test statistic in the ERS point optimum to test Ho is defined as; $P_T = (SSR\,(\bar{a}) - (\bar{a})\,SSR\,(1)) / f_o$ where f_o, at frequency zero, is an estimator for the error spectrum.

The lag length specification is another important issue for macroeconometric and financial modelling. In the literature, there is no criterion that gives perfectly consistent result better than others. Schwarz (SC) and Akaike (AIC) information criterions are widely used information criterions in the macroeconometric and financial modelling. To select optimal lag for my models, the VAR Lag Order Selection Criteria was applied to determine specific lag for the models. SC, AIC, Hannan-Quinn (HQ) information criterions, final prediction error (FPE) and sequential modified LR test statistics (LR) were employed to select optimal lag[43]. It is no surprise to have multiple optimal lags for the models using 5 different information criterions. My decision was made based on the most appropriate optimal lag for the VAR models where there was no autocorrelation, no serial correlation and no heteroskedasticity. Therefore, different lags for the VAR models were selected based on different information criterions.

Once it is found that the time series variables are at the same integration order I (1), the next step is to check for the variables whether there is a cointegration relationship(s) (or equilibrium(s)) among the variables in the long run or not. As suggested by Johansen (1988), Johansen and Juselius (1990), and Johansen (1996), the Johansen cointegration test is performed for I (1) variables in order to determine whether cointegration exists among the

---

[43]See Akaike (1976), Schwarz (1978), Hannan and Quinn (1979), and Tong (1979) for details about the information criterions.

variables using the trace and maximum eigenvalue tests. It is worthy to mention that the 3rd model of Johansen cointegration test for the models were preferred following the suggestion of Johansen (1991). The 3rd model allows linear deterministic trends in data and includes only the intercept.

This paper also employed the VAR based the Granger causality test, which is also called block exogeneity wald test, to investigate causal relationship in the short run between foreign bank penetration and determinants of bank performance, namely DDB, DCREDIT and PRO. The Granger causality is a test to find (i) whether X variable Granger causes the Y variable and (ii) whether Y variable Granger causes the X variable. If the Y variable does not cause X, the parameters of X on the lagged Y are jointly zeros (Granger, 1969). The general equation of the VAR based Granger causality test for my models are shown below;

eq.(1);

$$\text{DFBP}_t = \beta_1 + \sum_{i=1}^{n} \alpha_1 \text{DDB}_{t-i} + \sum_{i=1}^{n} \mu_1 \text{DFBP}_{t-i} + \sum_{i=1}^{n} \infty_1 \text{DGDP}_{t-i} + \sum_{i=1}^{n} \rho_1 \text{DUM2001}_{t-i} + e_t$$

eq.(2);

$$\text{DDB}_t = \beta_2 + \sum_{i=1}^{n} \alpha_2 D\text{DB}_{t-i} + \sum_{i=1}^{n} \mu_2 \text{DFBP}_{t-i} + \sum_{i=1}^{n} \infty_2 \text{DGDP}_{t-i} + \sum_{i=1}^{n} \rho_2 \text{DUM2001}_{t-i} + e_t$$

eq.(3);

$$\text{DFBP}_t = \beta_3 + \sum_{i=1}^{n} \alpha_3 \text{DCREDIT}_{t-i} + \sum_{i=1}^{n} \mu_3 \text{DFBP}_{t-i} + \sum_{i=1}^{n} \infty_3 \text{DGDP}_{t-i}$$

$$+ \sum_{i=1}^{n} \rho_3 \text{DUM2001}_{t-i} + e_t$$

eq.(4);

$$\text{DCREDIT}_t = \beta_4 + \sum_{i=1}^{n} \alpha_4 \text{DCREDIT}_{t-i} + \sum_{i=1}^{n} \mu_4 \text{DFBP}_{t-i} + \sum_{i=1}^{n} \infty_4 \text{DGDP}_{t-i}$$

$$+ \sum_{i=1}^{n} \rho_4 \text{DUM2001}_{t-i} + e_t$$

eq.(5);

$$DFBP_t = \beta_5 + \sum_{i=1}^{n} \alpha_5 PRO_{t-i} + \sum_{i=1}^{n} \mu_5 DFBP_{t-i} + \sum_{i=1}^{n} \infty_5 DGDP_{t-i} + \sum_{i=1}^{n} \rho_5 DUM2001_{t-i} + e_t$$

eq.(6);

$$PRO_t = \beta_6 + \sum_{i=1}^{n} \alpha_6 PRO_{t-i} + \sum_{i=1}^{n} \mu_6 DFBP_{t-i} + \sum_{i=1}^{n} \infty_6 DGDP_{t-i} + \sum_{i=1}^{n} \rho_6 DUM2001_{t-i} + e_t$$

Where n denotes the numbers of lag which were determined by the information criterions, β_{1-6}, α_{1-6}, ∞_{1-6} and ρ_{1-6} are parameters for estimation, and e_t and u_t are residual terms. I detect whether there is causal relationship among the variables using the VAR Granger causality technique. The only criteria to perform VAR Granger causality test is to have stationary variables because if the time series variables have unit root, the wald (χ^2) test statistic will be worthless and VAR stability will not meet. Therefore, in the VAR models, the first differences of FBP, DB, CREDIT and GDP variables were used whereas the level of the PRO variable was used. As in the Johansen cointegration test, the same exercises were performed to determine the optimal lag length for the VAR models. However, the sign of relationship among the variables and how long these impacts will remain effective or change over time cannot be investigated by the outcomes of the Granger causality test. Therefore, to get information about this, I also performed the generalised impulse response function and variance decomposition as suggested by Koop et al. (1996) and Pesaran and Shin (1998)[44].

The conventional impulse response (Sims, 1980) is heavily criticised due to the orthogonality assumption. The conventional impulse response, which is based on Choleski factorization of Vector Autoregression, is sensitive to variable order. The conventional impulse response was developed by Pesaran and Shin (1998) and Koop et al. (1996). The developed version of

---

[44] See, Koop et al. (1996) and Pesaran and Shin (1998) for further details about the concept.

impulse response function, is called "generalised impulse response function" in the system is indifferent of the ordering of the variable. The effect of the X variable on the Y variable or the effect of changing the X variable on the Y variable can be evaluated over specific time by the impulse response function (Hill et al., 2008). In other words, the magnitude of the effect of the innovation is investigated by the outcome of the impulse response technique (Ramirez, 2006; Pesaran and Shin, 1998). In all models, the impulse response at 5% level was accepted as significant at a point where both the confidence bands are above or below the horizontal line. Since the aim of this paper is to investigate the relationship between foreign bank penetration and determinants of bank performance, in response to a shock to the X variable by the X variable was not investigated.

Apart from the impulse response function, I applied the variance decomposition technique to get information about the percentage of the movement in the endogenous variables that are because of their own innovations, against innovations to the other variables. In other words, the technique was performed to test exogeneity of the variables. Using the Monte Carlos simulation with 1000 replications, the lower and upper error bounds in the variance decompositions were calculated in the models.

4.6 Empirical Findings

Before performing restricted or unrestricted VAR models, the stationarity of time series variables is detected by the Ng-Perron (Ng and Perron, 2001) and ERS Point Optimal (Elliott et al 1996) unit root tests. The results regarding the outcome of the unit root tests are presented in Table 19. These tests are performed to find out the order of integration for the FBP, PRO, CREDIT, and DB variables. For the first variable - FBP -, integration of order

zero I (0) is not found because the calculated Ng-Perron MZ_α test statistics which are 1.773 (the model with an intercept) and -2.392 (the model with a trend and an intercept) are greater than 5% critical values of -8.10 (the model with an intercept) and -17.30 (the model with a trend and an intercept), respectively. The results of the ERS point optimum test are in line with the results of the Ng-Perron in terms of FBP in both cases; (1) the model with an intercept and (2) the model with an intercept and a trend. Therefore, the variable has unit root at the integration of zero order. In other words, the variable has a higher integration order. At the first difference, I (1) of FBP, all test statistics (the model with an intercept and the model with a trend and an intercept) are less than its critical values at 1% and 5% levels. Thus, the null hypothesis cannot be rejected and the variable is integrated of order 1. Regarding DB and CREDIT variables, Table 19 indicates that the variables are integrated of order 1. This is literal because of the behaviours and trends of these variables[45]. The time series data of DB, CREDIT and FBP wanders around a trend and this is one of the main indicators of non-stationary time series. This is due to using the accumulated foreign bank assets, accumulated domestic bank assets and total domestic credit. With respect to PRO variable, the result is complex, because although the calculated Ng-Perron test statistic (the model with an intercept) and the calculated ERS– Point Optimal test statistics (the model with an intercept and the model with a trend and an intercept) indicate that the variable has unit root, the calculated Ng-Perron test statistic (the model with an intercept) is -3.968 which is greater than 5% critical values of -8.10. However, I accepted the PRO variable as stationary after examining its trend over time since the time series data of PRO clearly fluctuates around an intercept. Consequently, whilst FBP, DB, and CREDIT variables were I (1), the PRO variable was accepted I (0). It is worthy to mention that the findings in $MZ\alpha$ are in line with other test

---

[45] The nature of time series data treats as a non-stationary time series because of trending, wandering around an intercept and wandering around a trend while the fluctuation of time series data around a trend or an intercept reflects stationarity of time series.

statistics of Ng Perron (2001). Therefore, in the VAR models, the first differences of FBP, DB, and CREDIT variables were used while the level of PRO was performed.

Table 19: Unit Root Test for the Variables of FBP, PRO, CREDIT and DB

	Ng-Perron (MZ_α) [a]		ERS Point Optimal [b]	
	C	**C & T**	**C**	**C & T**
FBP	1.773	-2.392	81.944	38.850
DFBP	-22.880**	-33.478**	0.747**	2.685**
PRO	-3.968	-24.825**	1.533**	3.739**
DPRO	N.A	N.A	N.A.	N.A.
CREDIT	0.713	-4.314	29.876	25.459
DCREDIT	-28.157**	-28.889**	0.882**	3.244**
DB	1.827	5.377	143.11	20.113
DDB	-31.526**	-31.940**	0.814**	2.913**

Note: C and C&T denote constant and constant and trend, respectively. D initial letter denotes the first difference of time series variables. The integration order for the logged GDP is one using ERS Point Optimal and KPSS tests. The finding regarding GDP is not shown in Table 19 because the aim of the paper only investigates relationship between the banking variables and the variable used as a control variable.
**, *, and [y] denote statistically significant at 0.01, 0.05, and 0.10 levels, respectively.
[a] including only constant, one-sided test of the Ho that the variable has unit root; critical values are equal to -5.70, -8.10, and -13.80 at 10%, 5%, and 1% levels, respectively
[a] including a constant and a trend, one-sided test of the Ho that the variable has unit root; critical values are equal to -14.20, -17.30, and -23.80 at 10%, 5%, and 1% levels, respectively
[b] including only constant, one-sided test of the Ho that the variable has unit root; critical values are equal to, 4.008, 3.023, 1.900 at 10%, 5%, and 1% levels, respectively
[b] including a constant and a trend, one-sided test of the Ho that the variable has unit root; critical values are equal to 6.777, 5.689, 4.235 at 10%, 5%, and 1% levels, respectively

The next step is to check for the time series variables whether there is a cointegration relationship(s) (or equilibrium(s)) among the variables in the long run or not[46]. For the Johansen cointegration test, the optimal lag length - lag (4) - for the first model, where I investigate relationship between DDB and DFBP, was determined by LR, FPE and AIC

---

[46] Granger (1988), Johansen (1988), Kunst and Neusser (1990), Johansen and Juselius (1990), and Johansen (1996) are recommended to the readers for more details about the cointegration test.

information criterions. Both the trace and maximum eigenvalue tests in the first model indicate that the null hypothesis of the no cointegration between DFBP and DDB cannot be rejected at 5% level. Therefore, I could not detect any long run relationship between foreign bank penetration and domestic bank assets. The situation is not different in a case of model 2 where I investigate relationship between DFBP and DCREDIT. Hence, there is no cointegration equation between foreign bank penetration and domestic credit. This is a surprising result because the importance of credit availability on foreign bank penetration cannot be underestimated in a host market and vice versa. Even, in the cointegration models, control variables are not being added and still there is no cointegration equation in model 1 and 2. This may be appeared because such variables are not truly integration of order 1. As Perron (1989) argued, stationarity processes with breaks are easily mistaken from unit root processes. Therefore, although a time series variable is I(0), the result of unit root tests may indicates that such variable is I(1) if there is a break in trending data (see, Perron, 1989). After investigating the pattern of CREDIT and DB variables over time, it is obvious to find a break in 2001 when the financial crisis erupted in Turkey. However, I am proceeding with the estimation assuming the data are integrated I(1) processes and this is an approximation for stationary processes with multiple breaks. Therefore, the variables, like CREDIT and DB, are assumed I(1) in all models.

Table 20: Johansen Cointegration Test

Unrestricted Cointegration Rank Test (Trace and Maximum Eigenvalue)					
Model 1.	Lag(1)				
Hypothesized	Eigenvalue	Trace	0.05	Max-Eigen	0.05
No. of CE(s)		Statistic	Critical Value	Statistic	Critical Value
None	0.108	7.401	15.494	7.36	14.264
At most 1	0.000	0.037	3.841	0.03	3.841
Model 2.	Lag(2)				
Hypothesized	Eigenvalue	Trace	0.05	Max-Eigen	0.05
No. of CE(s)		Statistic	Critical Value	Statistic	Critical Value
None	0.115	8.010	15.494	7.994	14.264
At most 1	0.000	0.015	3.841	0.015	3.841

Note: Trace and Max-eigenvalue tests indicate no cointegrating equation in all models at 0.05 level. The first differences of FBP, DB, and CREDIT variables were used while the level of PRO was performed.
* denotes rejection of the hypothesis at the 0.05 level.
**MacKinnon-Haug-Michelis (1999) p-values.

This paper employed the VAR based Granger causality test to investigate the short run causal relationships between foreign bank penetration and banking variables, while controlling DGDP and 2001 financial crisis. The results regarding short run causal relationships presented in Table 21 are based on Chi-sq. In the first model, I test whether DFBP Granger cause DDB and (ii) whether DDB Granger cause DFBP. The null hypothesis that DFBP does not Granger cause DDB cannot be rejected with a $\chi^2 = 1.474$ (p-value = 0.688)[47]. This implies that changes in foreign bank penetration do not significantly lead to changes in domestic bank assets. This is probably due to the dominancy of domestic banks in the banking sector in Turkey. The share of foreign bank assets in the banking sector has not exceeded 18%.

---

[47] The optimal lag length – lag (1) – of the first model was determined by LR, FPE and AIC information criterions because the optimal lag length of other information criterions led to serial correlation and/or autocorrelation. For the second and third models, the same procedures were followed to determine the optimal lag length for the VAR models.

Therefore, the dominancy of domestic banks in the banking sector is likely to minimize any reaction of them against foreign bank penetration to the market. Moreover, the result of the first model in Table 21 also shows that DDB Granger cause DFBP at 10% level with a $\chi^2 =$ 2.889 (p-value=0.089). The results also suggest that at 10% level there is unilateral causality which runs from DDB to DFBP, which implies that the changes in domestic bank assets significantly lead to changes in foreign bank penetration. As expected, the reaction of foreign banks against possible changes in a host country is more certain and quick than that of domestic banks because foreign banks are relatively more sensitive in case of unexpected changes in the market.

Table 21 shows the existence of causality from DCREDIT to DFBP with a $\chi^2 = 11.848$ and from DFBP to DCREDIT with a $\chi^2 = 6.312$[48]. Thus, there is bilateral or feedback causality between DCREDIT and DFBP at 5% level. In other words, foreign bank penetration leads to change in domestic credit availability, and vice versa. To find bilateral causality in the second model among the variables is not surprising, because foreign banks contribute to the credit availability of host countries either direct by providing credits to the domestic sectors or indirect by affecting the credit availability of domestic banks to the domestic market.

On the other hand, I could not, surprisingly, detect any causal relationship between PRO and DFBP at 5% level in Turkey. The lack of causality from foreign bank penetration to banking profitability is not consistent with pervious empirical findings. This is because rising foreign bank assets in Turkey were not associated with a higher number of banks.

---

[48] In the second model, all information criterions gave same optimal lag length which is lag (2). It is worth mentioning that this estimates the joint effects of $DFBP_{t-1}$ and $DFBP_{t-2}$ on DCREDIT.

Table 21: VAR Based Granger Casualty (Block Exogeneity Wald Test)

	Independent variable	Granger cause	Dependent variable	DoF	χ^2	P-value	Decision 5% level	10% level
Model 1	**DDB**	→	**DFBP**	1	2.887	0.089	X	√
	DFBP	→	**DDB**	1	1.474	0.688	X	X
Model 2	**DCREDIT**	→	**DFBP**	2	11.848	0.003	√	√
	DFBP	→	**DCREDIT**	2	6.312	0.042	√	√
Model 3	**PRO**	→	**DFBP**	2	2.814	0.244	X	X
	DFBP	→	**PRO**	2	1.873	0.391	X	X

Note: → *indicates the direction of Granger causality while DoF and χ2 denote the degree of freedom and Chi-sq, respectively. The first differences of FBP, DB, and CREDIT variables were used while the level of PRO was performed. Since the aim of this paper is to investigate the relationship between DFBP and banking variables (namely DDB, DCREDIT and PRO), the findings between banking variables and control variables and the findings between DFBP and control variables are not presented in Table 21.*

However, the results of the Granger casualty test cannot answer the questions of the sign of relationship in all models and how long possible impacts will remain effective or change over time. To answer these questions for my models, I apply the generalised impulse function and variance decomposition techniques, controlling DGDP and periodic dummy (DUM2001) variables. Figures 7 to 12 report the response of banking variables to a shock to the foreign bank penetration, and vice versa. Since the aim of this paper is to investigate the relationship between foreign bank penetration and banking variables, in response to a shock to the X variable by the X variable was not investigated.

Response to Generalized One S.D. Innovations ± 2 S.E.

**Figure 7: Response of DDB to DFBP**
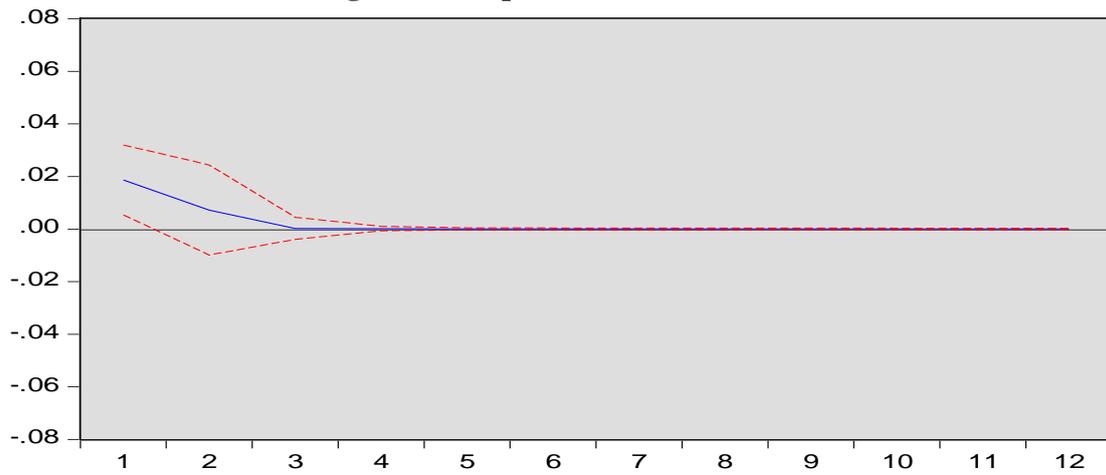
Figure 8: Response of DFBP to DDB
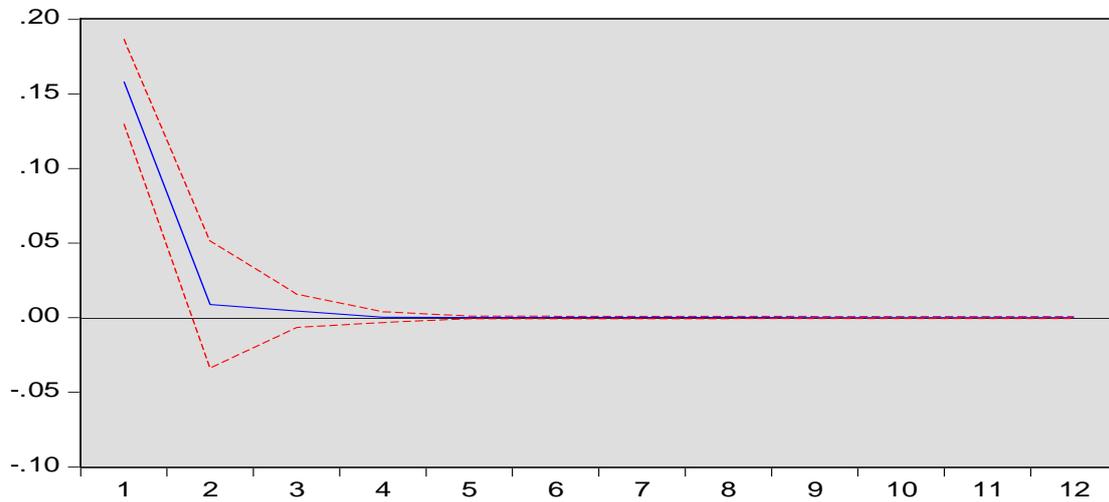
Figure 9: Response of DCREDIT to DFBP
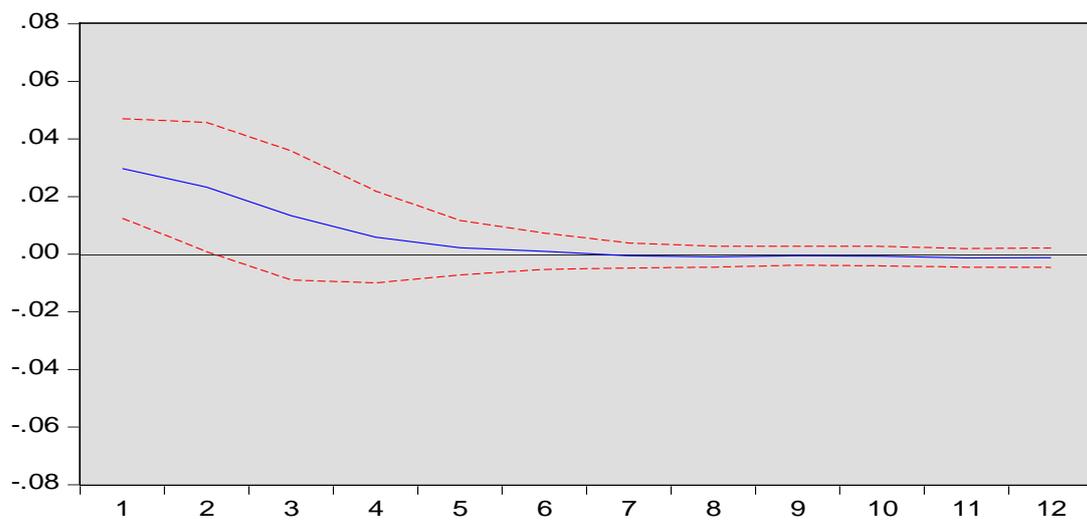
Figure 10: Response of DFBP to DCREDIT
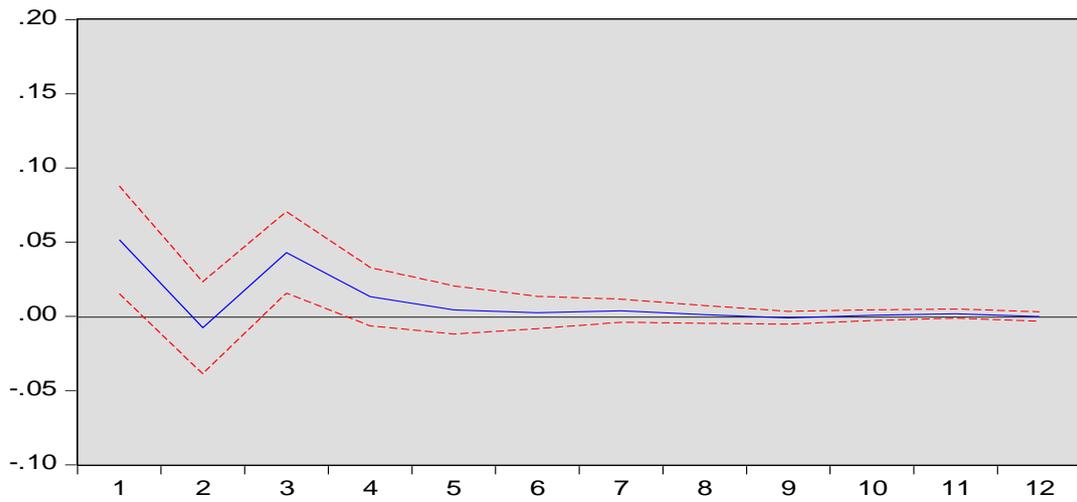
Figure 11: Response of PRO to DFBP
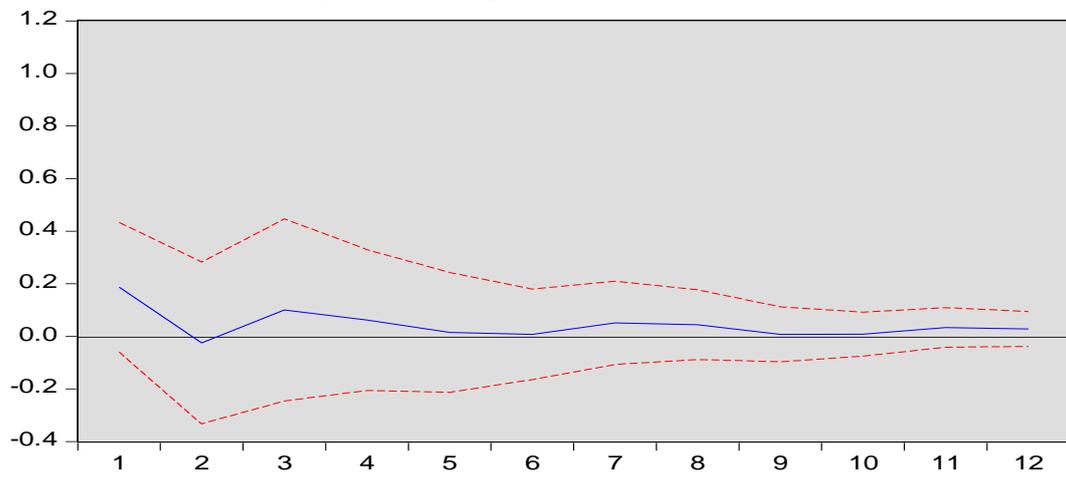
Figure 12: Response of DFBP to PRO
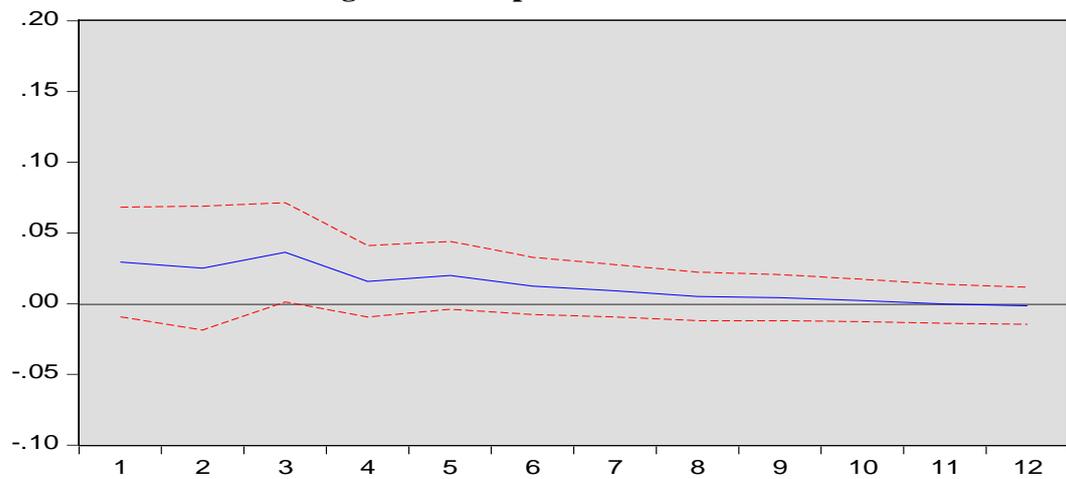
Using a twelve quarter period, the study also investigated the likely effects of shocks to the variables within twelve quarters. Figure 7 illustrates that in response to initial shock to DDB by DFBP is positive and significant but the effect of shocks dies away after the 2nd period. The effects of shocks in both figures are consistent with the cointegration results because the effects of shocks die away after the 2nd quarter. Thus, in Turkey, rising domestic bank assets contribute to foreign bank penetration in the short run. The result of variance decomposition in case of model 1 shows that shock to DFBP is influenced by DDB (14.475%) at 12 quarter period. On the other hand, DDB appears more independent and the shock to DB, thus, only accounts for 8.471% of variation in DFBP after controlling DGDP and 2001 financial crisis.

Table 22: Variance Decomposition

Model 1					
Variance Decomposition of DDB:			**Variance Decomposition of DFBP:**		
Period	**DDB**	**DFBP**	**Period**	**DDB**	**DFBP**
1	56.225	7.675	1	11.055	80.982
6	54.130	8.478	6	14.482	76.861
12	54.087	8.471	12	14.475	76.819
Model 2					
Variance Decomposition of DCREDIT			**Variance Decomposition of DFBP:**		
Period	**DCREDIT**	**DFBP**	**Period**	**DCREDIT**	**DFBP**
1	69.668	17.698	1	11.538	81.033
6	44.083	18.104	6	16.553	65.257
12	42.944	17.669	12	16.484	64.734
Model 3					
Variance Decomposition of PRO:			**Variance Decomposition of DFBP:**		
Period	**PRO**	**DFBP**	**Period**	**PRO**	**DFBP**
1	93.638	3.590	1	3.234	84.359
6	93.434	2.225	6	11.846	74.656
12	92.799	2.346	12	12.177	75.050

Note: Cholesky Ordering: DFBP DDB DCREDIT PRO. Since the aim of this paper is to investigate the relationship between DFBP and banking variables (namely DDB, DCREDIT and PRO), the possible impacts of control variables on the banking variables and DFBP and the reverse impacts are not presented in Table 22.
Standard Errors: Monte Carlo (1000 repetitions)

Figure 8 shows that the reverse line is initially significant and positive. Therefore, rising foreign bank penetration in Turkey leads to an increase of domestic bank assets in Turkey. This is in line with the finding of Engwall et al. (2001). However, the significant shock dies away after the 1st period.

In the second model, the effect of a positive shock in DFBP is significantly positive for DCREDIT at 1st and 3rd quarter periods, suggesting that the available domestic credit in the market has positive impact on the foreign bank penetration but just for the short run. Regarding variance decomposition in the second model, whereas the shock to DCREDIT is accounted for 17.669% of variation in DFBP, the shock to DFBP is explained by DCREDIT (16.484%) at the end of the 12 quarter period after controlling DGDP and 2001 financial crisis. The initial reverse response is significant and positive in Figure 9, implying that the foreign banks are important for domestic credit in the short run in Turkey. Therefore, rising foreign bank assets in the banking sector are associated with higher credit availability to the domestic market[49]. This is consistent with the findings of Goldberg et al. (2000) and Clarke (2006). On the other hand, the figure also shows that the effect of shocks takes 3rd quarter to disappear.

In terms of the profitability in the banking sector, the findings are quite interesting; Figure 12 shows that the response of DFBP to one standard deviation shock in PRO is initially positive but not statistically significant. The response is only significant in 3rd quarter. The result is not consistent with the existing literature because Okuda and Rungsomboon (2004), Denizer (2000), Zajc (2002) Claessens et al. (2001) conclude that rising foreign assets in the banking sector tends to reduce host banking profitability. However, in Turkey, rising foreign bank

---

[49]Apart from actual foreign credit to the domestic market, rising foreign bank penetration in a host country might also force domestic banks to increase domestic credit in order to be competitive against the foreign banks.

assets are not mostly associated with higher numbers of banks in the banking sector especially throughout the last two decades. 20 foreign banks were running business in Turkey at the end of 1992 where the total asset of these banks in the banking sector was US$ 2.37 billion. However, the total asset of these banks jumped US$ 75.09 billion at the end of 2009 even though the number of foreign banks in Turkey declined to 17. These numbers indicate that although there was a substantial jump in the foreign bank assets in Turkey, the number of foreign banks that operate in Turkey declined. Moreover, the total number of banks in Turkey also declined from 69 in 1992 to 62 in 2009. Therefore, rising foreign assets in the banking sector was not associated with higher competition. Therefore, it is literal that rising foreign assets in Turkey are likely to increase profitability due to declining competition in the banking sector. The reverse effect is not statistically significant at 1st quarter. For the banking profitability, the contribution of DFBP to PRO variability ranges between 2.225% and 3.590% throughout 12 quarter periods. With respect to PRO, DFBP accounts for 3.234% and 12.177% of its future variability.

As a part of the diagnostic tests, I applied the numbers of diagnostic tests, such as serial correlation LM, "portmanteau" test of Ljung and Box and VAR residual heteroskedasticity, to test the stability of the VAR models. My evidences, presented in Table 23 to 24 in the appendix, show that there is no heteroskedasticity, no autocorrelation, and no serial correlation in my models. In addition, the inverse roots of AR characteristic polynomial were performed to detect the stability of the VAR models and the results of this test are presented in Figure 13 in the appendix. The findings in Figure 13 are found to be satisfactory for all models.

4.7 Conclusion

The study, using a VAR techniques and the Johansen co-integration test, examined the short run and long run dynamic relations between DFBP and determinants of bank performance, namely domestic bank assets, profitability and total domestic credit), while controlling DGDP and 2001 financial crisis. The time series variables are based on quarterly data from 1992Q4 to 2009Q4. To detect whether the time series variables have unit root or not, I performed newly developed and efficient unit root tests - Ng-Perron and ERS point optimal -. The results of such tests showed that whilst FBP, DB and CREDIT variables are integrated of order 1, the PRO variable is I (0). Thus, I checked the long run relationship between DFBP and DDB and between DFBP and DCREDIT using the Johansen cointegration test. However, I could not detect any long run relationship in the first and second models using the trace and maximum eigenvalue tests.

In the first model, I found that there is unilateral causality which runs from DDB to DFBP at 10% level. Moreover, in response to initial shock to DFBP by DDB is significantly positive. Therefore, rising domestic bank assets in Turkey tends to contribute positively to foreign bank penetration. The reverse line initially is positive and significant as well. Such result in the reverse line is in line with the finding of Engwall et al. (2001). However, Engwall et al. (2001) investigated only one way impact – from foreign bank assets to domestic bank assets in the Nordic countries. In addition, my finding also reveals that domestic bank assets in model 1 appear more exogenous than foreign bank assets.

The result regarding block exogeneity wald test also indicates for the second model that there is bilateral causality between DFBP and DCREDIT. By analysing the impulse response function, foreign bank penetration is important for credit availability in Turkey in the short run. This finding is consistent with the finding of Clarke (2006). The reverse line is positive and significant at 1st and 3rd quarter periods, suggesting that available domestic credit in the market has positive impact on foreign bank penetration. This direction of a positive impact is also consistent with the existing literature and rational because it is well-known that financial development is an important factor to attract foreign banks to host markets. Table 22 shows that foreign bank penetration appears more independent than domestic credit in model 2.

Regarding the relationship between profitability in the banking sector and foreign bank penetration, my findings are quite interesting. The Granger causality test in Table 21 showed that although no causal relationship between DFBP and PRO was detected at 5% and 10% levels. More interestingly, the response of DFBP to one standard deviation shock in PRO is initially statistically significant and positive at 3rd quarter. Such a finding is not in line with the existing literature because rising foreign bank assets in a host market tends to reduce profitability because of increasing competition as a result of an increase in the number of banks in the same market but in Turkey this situation is different. Although foreign bank assets have significantly risen since the beginning of globalisation period, the number of foreign banks and domestic banks has declined because of mergers and acquisitions. The reverse effect is also statistically significant and positive as expected. This is rational because in common with empirical and theoretical research, profitability in a host market is main driving factor of foreign banks. It is worth mentioning that none of the shocks in Figures 7 to 12 seem to have permanent impacts on the variables and the effect dies out within a few quarters in all models.

4.8 References

[1] Akaike, H. (1976). "Canonical correlation analysis of time series and the use of the information criterion. In system Identification: Advances and Case studies Editors: R. K. Mehra and D. G. Laintiotis." <u>New York Academic Press</u>: 27-96.

[2] Akguc, O. (1989). "Turkish Banking System in 100 Questions" **Turkish** "100 Soruda Turkiye'de Bankacilik" Second Edition, Istanbul: Gercek Yayinevi.

[3] Arslan, Y. (1982). "Turkish Banking System (1923-1981)." **Turkish** "Cumhuriyet Doneminde Turk Banka Sistemi (1923-1981)." Istanbul: Der Yayinevi.

[4] Aysan, A. F. and S. P. Ceyhan (2008). "What Determines the Banking Sector Performance in Globalized Financial Markets? The case of Turkey."<u>Physica A: Statistical Mechanics and its Applications</u> **387**: 1593–1602.

[5] Bayraktar, N. and Y. Wang (2004). "Foreign Bank Entry, Performance of Domestic Banks and the Sequence of Financial Liberalization." <u>China Journal of Finance</u> **2** (2).

[6] Boni, J. P., I. Hasan, et al. (2005). "Bank Performance, Efficiency and Ownership in Transition Countries."<u>Journal of Banking & Finance</u> **29**(1): 31-53.

[7] Brooks, C. (2002). <u>Introductory Econometrics for Finance</u>. Cambridge, Cambridge University Press.

[8] Bumin, M. (2007). "The Determinants of Foreign Banks Entry to the Turkish Banking Sector." <u>Banks and Bank Systems</u> **2**(4): 84-92.

[9] Claessens, S., A. Demirguc-Kunt, et al. (2001). "How Does Foreign Entry Affect Domestic Banking Markets?." <u>Journal of Banking and Finance</u> **25**: 891–911.

[10] Claessens, S., T. Gurcanlar, et al. (2008). "Foreign Bank Presence in Developing Countries 1995-2006: Data and Trends." Mimeo,

[11] Clarke, G. R. G., R. Cull, et al. (2006). "Foreign Bank Participation and Access to Credit across Firms in Developing Countries" <u>Journal of Comparative Economics</u> **34**(4): 774–795.

[12] Cochrane, J. H. (1991). "A Critique of the Application of Unit Root Tests."<u>Journal of Economic Dynamics and Control</u> **15**(2): 275-284.

[13] Cull, R. and M. S. M. Peria (2010). "Foreign Bank Participation in Developing Countries ; What Do We Know about the Drivers and Consequences of This Phenomenon?" <u>Policy Research Working Paper</u> WPS5398.

[14] DeJong, D. N., J. C. Nankervis, et al. (1992). "The Power Problem of Unit Root Tests in Time Series with Autoregressive Errors."Journal of Econometrics **53**(1-3): 323–343.

[15] Demir, N., S. F. Mahmud, et al. (2005). "The Technical Inefficiency Effects of Turkish Banks After Financial Liberalization." The Developing Economies **48**: 396–411.

[16] Demirguc-Kunt, A., R. Levine, et al. (1998). "Opening to Foreign Banks: Issues of Stability, Efficiency, and Growth." in Proceedings of the Bank of Korea Conference on the Implications of Globalization of World Financial Markets

[17] Demirguc-Kunt, A. and H. Huizinga (1999). "Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence." World Bank Economic Review1

[18] Denizer, C. (1998). "Foreign Entry in Turkey's Banking Sector:1980-1997." Mimeo, World Bank.

[19] Denizer, C., M. Dinc, et al. (2007). "Financial Liberalization and Banking Efficiency: Evidence from Turkey." Journal of Productivity Analysis **27**: 177-195.

[20] Denizer, C. A. (2000). "Foreign Entry in Turkey's Banking Sector: 1980-97." the World Bank WPNo: 2462

[21] Detragiache, E. and P. Gupta (2008). "Foreign Banks in Poor Countries: Theory and Evidence." Journal of Finance **63**(5): 2123-60

[22] Dickey, D. A. and W. Fuller (1979). "Distribution of the estimators for autoregressive time series with a unit root."Journal of American Statistical Association **74**: 427-431.

[23] Elliott, G., T. Rothenberg, et al. (1996). "Efficient Tests for an Autoregressive Unit Root." Econometrica **64**(4): 813-836.

[24] Engwall, L., R. Marquardt, et al. (2001). "Foreign Bank Penetration of Newly Opened Markets in the Nordic Countries" Journal of International Financial Markets11: 53–63.

[25] Ertugrul, A. and O. Zaim (1999). "Economic Crises and Efficiency in Turkish Banking Industry."METU Studies in Development **26**(1-2): 99-116.

[26] Esperanca, J. P. and M. A. Gulamhussen (2001). "(Re)Testing the 'Follow the Customer' Hypothesis in Multinational Bank Expansion." Journal of Multinational Financial Management **11**(3): 281-293.

[27] Focarelli, D. and A. F. Pozzolo (2005). "Where do Banks Expand Abroad? An Empirical Analysis."Journal of Business **78**(6): 2435-2464

[28] Knickerbocker, F. T. (1973). <u>Oligopolistic Reaction and Multinational Enterprise</u>.Boston Harvard University.

[29] Matousek, R. and H. Fukuyama (2011). "Efficiency of Turkish Banking: Two-stage System Variable Returns to Scale Model.", <u>Journal of International Financial Markets, Institutions & Money</u> **21**(1): 71-91.

[30] Goldberg, L. G. and R. Grosse (1992). "Location Choice of Foreign Banks in the United States."<u>Journal of Economics and Business</u> **46**(5): 367-379

[31]Goldberg, L.G. and D. Johnson (1990). "The Determinants of US Banking Activity Abroad." <u>Journal of International Money and Finance</u> **9**: 123-137.

[32] Goldberg, L. S., B. G. Dages, et al. (2000). "Foreign and Domestic Bank Participation in Emerging Markets: Lessons from Mexico and Argentina " <u>NBER Working Paper</u>No. w7714.

[33] Granger, C. W. J. (1969). "Investigating Causal Relations by Econometric Models and Cross-spectral Methods." <u>Econometrica</u> **37**(3): 424–438.

[34] Granger, C. W. J. (1988). "Some Recent Developments in a Concept of Causality." Journal of Econometrics **39**(1-2): 199-211.

[35] Grosse, R. and L. Goldberg (1991). "Foreign Activity in the United States: An Analysis by Country of Origin." Journal of Banking and Finance **15**(6): 1092-1112.

[36] Haas, R. T. A. d. and I. P. P. v. Lelyveld (2004). "Foreign Bank Penetration and Private Sector Credit in Central and Eastern Europe "Journal of Emerging Market Finance **3**(2): 125-151.

[37] Hannan, E. J. and B. G. Quinn (1979). "The Determination of the Order of an Autoregression." Journal of the Royal Statistical Society **41**(2): 190–195.

[38] Hill, R. C., W. E. Grifiths, et al. (2008). Principles of Econometrics, John Wiley & Sons.

[39] Isik, I. and M. K. Hassan (2002). "Technical, Scale and Allocative Efficiencies of Turkish Banking Industry." Journal of Banking and Finance **26**: 719–766.

[40] Jeon, Y., S. M. Miller, et al. (2006). "Do Foreign Bank Operations Provide a Stabilizing Influence in Korea?" The Quarterly Review of Economics and Finance **46**: 82–109.

[41] Johansen, S. (1988). "Statistical Analysis of Cointegrating Vectors." <u>Journal of Economic Dynamics and Control</u> **12**: 231-254.

[42] Johansen, S. (1991). "Estimating and Resting Cointegration Vectors in Gaussian Vector Autoregressive Models." <u>Econometica</u> **59**: 1551-1580.

[43] Johansen, S. (1995). "Likelihood Based Inference in Cointegrated Vector Autoregressive". <u>The Scandinavian Journal of Economics,</u> **99**(2): 351-354.

[44] Johansen, S. and K. Juselius (1990). "Maximum Likelihood Estimation and Inference on Cointegration with Applications to the Demand for Money." <u>Oxford Bulletin of Economics and Statistics</u> **52**(2): 169-210

[45] Kamil, H. and K. Rai (2009). "The Global Credit Crunch and Foreign Banks' Lending to Emerging Markets: Why Did Latin America Fare Better?" <u>International Monetary Fund</u> WP/10/102.

[46] Koop, G., M.H. Pesaran and S. Potter (1996). "Impulse Response Analysis in Nonlinear Multivariate Models." <u>Journal of Econometrics</u> **74**(1):119-147

[47] Lensink, R. and N. Hermes (2004). "The Short-term Effects of Foreign Bank Entry on Domestic Bank Behaviour: Does Economic Development Matter?" Journal of Banking and Finance **28**(3): 553–568.

[48] Lin, X. and Y. Zhang (2009). "Bank Ownership Reform and Bank Performance in China" Journal of Banking & Finance **33**(1): 20-29.

[49] Miller, S. R. and A. Parkhe (1998). "Patterns of Expansion of U.S. Banks' Foreign Operations." Journal of International Business Studies **29**(2): 359-390.

[50] Morgan, D. P. and P. E. Strahan (2003). "Foreign Bank Entry and Business Volatility: Evidence from U.S. States and Other Countries." NBER Working Paper No. w9710.

[51] Ng, S. and P. Perron (2001). "Lag Selection and the Construction of Unit Root Tests with Good Size and Power."Econometrica69(6): 1519–1554.

[52] Ng, S. and P. Perron (2005). "A Note on the Selection of Time Series Models." Oxford Bulletin of Economics and Statistics **67**(1): 115-134.

[53] Nigh, D., Cho, K. R. and S. Krishnan (1986). "The Role of Location-Related Factors in U.S. Banking Involvement Abroad: An Empirical Examination." Journal of International Business Studies **17**: 59-72.

[54] Ocal, T. (1992). "Turkish Banking System." **Turkish** "Turk Banka Sistemi." Ankara: Ankara Iktisadi ve Ticari Ilimler Akademisi Yayinlari.

[55] Okuda, H. and S. Rungsomboon (2004). "The Effects of Foreign Bank Entry on the Thai Banking Market: Empirical Analysis from 1990 to 2002." CEI Working Paper Series No. 2004-20.

[56] Osman, Z. (1995). "The Effect of Financial Liberalization on the Efficiency of Turkish Commercial Banks."Applied Financial Economics **5**(4): 257–264.

[57] Ozkan-Gunay, E. N. and A. Tektas (2006). "Efficiency Analysis of the Turkish Banking Sector in Precrisis and Crisis Period: a DEA Approach." Contemporary Economic Policy **24**(3): 418–431.

[58] Parasiz, I. (2000). "Money, Banking and Finance Markets" **Turkish** "Para Banka ve Finansal Piyasalar." Seventh Edition, Bursa: Ezgi Kitabevi Yayinlari.

[59] Perron, P. (1989). "The Great Crash, the Oil Price Shock, and the Unit Root Hypothsis." Econometrica **57**(6): 1361-1401.

[60] Perron, P. and S. Ng (1996). "Useful Modifications to Unit Root Tests with Dependent Errors and Their Local Asymptotic Properties." Review of Economic Studies **63**: 435-465.

[61] Pesaran, M. H. and Y. Shin (1998). "Generalised Impulse Response Analysis in Linear Multivariate Models." Economics Letters **58**: 17-28.

[62] Ramirez, M. (2006). "Is Foreign Direct Investment Beneficial for Mexico? An Empirical Analysis, 1960-2001." World Development **34**(5): 802-817.

[63] Satta, T. A. (2004). "The Influence of Foreign Bank Entry on Lending to Small Firms in Tanzania." The Journal of Policy Reform **7**(3): 165-173.

[64] Sims, C. A. (1980), "Macroeconomics and Reality", Econometrica 48(1):1-48

[65] Tong, H. (1979). "Final Prediction Error and Final Interpolation Error: a Paradox?" I.E.E.E Transactions on Information Theory **25**(6): 758 -759.

[66] Yeldan, A. E. (1997). "Financial Liberalization and Fiscal Repression in Turkey: Policy Analysis in a CGE Model with Financial Markets." Journal of Policy Modelling **19**(1):79-117.

[67] Yildirim, C. (2002). "Evolution of Banking Efficiency within an Unstable Macroeconomic Environment: the case of Turkish Commercial Banks." Applied Economics **34**(18): 2289–2301.

[68] Zajc, P. (2003). "The Effect of Foreign Bank Entry on Domestic Banks in Central and Eastern Europe " Paper for SUERF colloquium.

[69] Zivot, E. and J. Wang (2005). Modelling Financial Time Series with S-PLUS. New York, Springer.

4.9 Appendix

Table 23: VAR Residual Serial Correlation LM Tests

Lags	Model 1 LM-Stat	Prob	Model 2 LM-Stat	Prob	Model 3 LM-Stat	Prob
	Null Hypothesis: no serial correlation at lag order h					
1	2.964	0.563	2.157	0.706	7.212	0.125
2	0.789	0.939	0.846	0.932	2.056	0.725
3	1.563	0.815	2.113	0.714	4.104	0.392
4	2.053	0.725	1.328	0.856	8.032	0.090
5	0.198	0.995	3.790	0.435	6.240	0.181
6	2.576	0.631	3.526	0.473	4.223	0.376
7	4.268	0.370	4.683	0.321	1.157	0.885
8	7.866	0.096	4.446	0.348	6.272	0.179
9	4.066	0.397	2.902	0.574	2.232	0.693
10	1.195	0.878	0.330	0.987	5.503	0.239
11	0.051	0.999	3.980	0.408	0.466	0.976
12	0.645	0.957	0.401	0.982	1.298	0.861

Probs from chi-square with 4 df.

Table 24: VAR Residual Heteroskedasticity Tests

No cross terms (only levels and squares)					
Model 1		**Model 2**		**Model 3**	
Chi-sq	**Prob**	**Chi-sq**	**Prob**	**Chi-sq**	**Prob**
35.218	0.505	30.358	0.173	7.572	0.817
Includes Cross Terms					
Model 1		**Model 2**		**Model 3**	
Chi-sq	**Prob**	**Chi-sq**	**Prob**	**Chi-sq**	**Prob**
74.584	0.679	56.644	0.065	9.551	0.847

Figure 13: Inverse Roots of AR Characteristic Polynomial
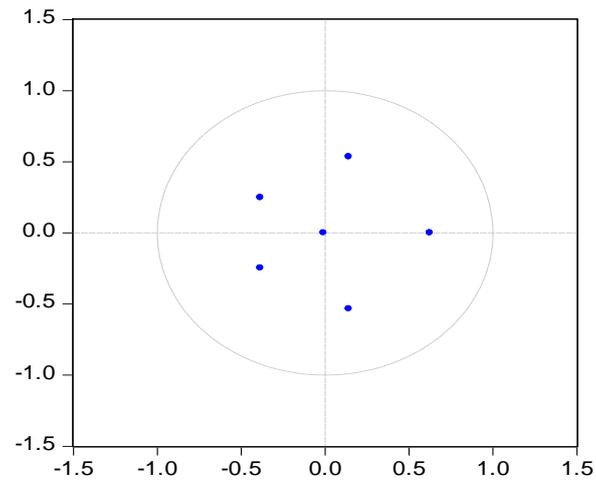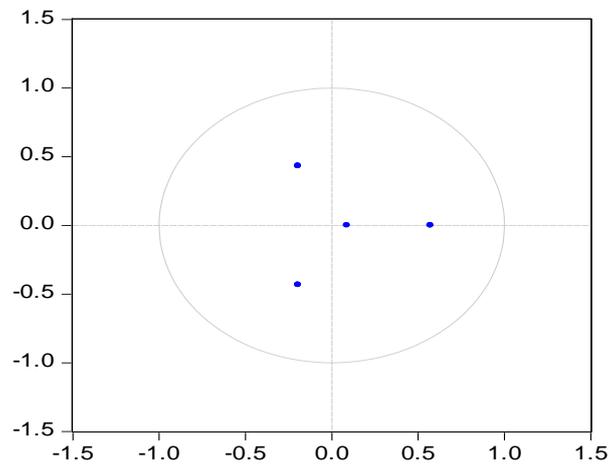
Model 1
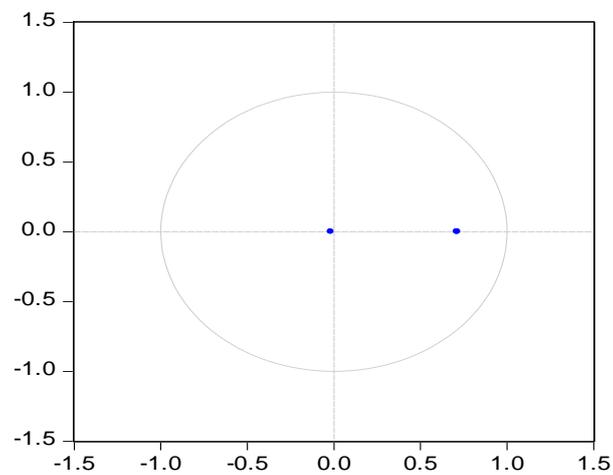
Model 2

Model 3

4.9.1 Data Appendix

This appendix describes the data source used in my empirical models. The time series variables used in the models are shown below;

4.9.1.1 FBP

» **Definition:** Total assets held by foreign banks in the banking sector. Holding 50% share acquisition by a foreign bank or foreign investor in a host country is accepted as a minimum requirement to have an important influence on the management of acquired bank in Turkey. In other words, acquiring 50% or more shares of domestic bank are recorded as a foreign bank in most of the countries.

» **Source:** The Banks Association of Turkey (2011), the data are available at 20.12.2010

https://www.tbb.org.tr/en/banks-and-banking-sector-information/data-query-system/financial-tables/41

» **Measure:** In this paper, I accepted that foreign bank penetration measured as the total value of foreign bank assets. Because the total value of foreign bank assets holds the lion shares of banking FDI. As I did, Grosse and Goldberg (1991) and Esperanca and Gulamhussen (2001) are used aggregate foreign bank assets while examining the determinants of foreign bank penetration. The variable was expressed in its logarithmic transformation.

» **Period:** The FBP variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

4.9.1.2 PRO

» Definition: Return on assets in the banking sector was used as a proxy for profitability in the banking sector.

» Source: The Banks Association of Turkey (2011), the data are available at 08.09.2010

https://www.tbb.org.tr/en/banks-and-banking-sector-information/data-query-system/financial-tables/41

» Measure: The raw data were used because some observations for the variable are negative.

» Period: The PRO variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

4.9.1.3 CREDIT

» Definition: Total domestic credit was provided by banks in Turkey.

» Source: The Banks Association of Turkey (2011), the data are available at 08.09.2010

https://www.tbb.org.tr/en/banks-and-banking-sector-information/data-query-system/financial-tables/41

» Measure: The CREDIT variable was expressed in its logarithmic transformation.

» Period: The CREDIT variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

4.9.1.4 DB

» Definition: Total assets in the banking sector, excluding the foreign ones in Turkey.

» Source: The Banks Association of Turkey (2011), the data are available at 08.09.2010

https://www.tbb.org.tr/en/banks-and-banking-sector-information/data-query-system/financial-tables/41

» **Measure:** The DB variable was expressed in its logarithmic transformation.

» **Period:** The DB variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

4.9.1.5 GDP

» **Definition:** Nominal GDP is used as a control variable since it is believed that GDP is an important determinant of FDI, FBP and FPI. The findings of Buch (2000), Brealey and Kaplanis (1996) and Yamori (1996) Herrero and Peria (2005) underlined that GDP in host countries seems most important factor that affects the location decision of multinational banks. Similar to these findings, the study of Luca and Spatafora (2012) implies that rising GDP is associated with higher capital flows in developing countries.

» **Source:** the Central Bank of the Republic of Turkey (2011), the data was available at 05.08.2013

http://evds.tcmb.gov.tr/yeni/cbt-uk.html

» **Measure:** The GDP variable was expressed in its logarithmic transformation.

» **Period:** The GDP variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

4.9.1.6 DUM2001

» **Definition:** DUM2001 is a dummy variable and used as a control variable since I believe that financial crisis in 2001 led to significant changes in the Turkish banking sector.

» Source: The dummy variable is generated by the author.

» Measure: The raw data were used.

» Period: The DUM2001 variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

Chapter 5: The Linkage between Foreign Bank Penetration and Host Country Risks:

The Case of Turkey

Dervis Kirikkaleli

Stirling Management School, Division of Economics, University of Stirling, FK9 4LA

Email: dervis.kirikkaleli@stir.ac.uk

Telephone: +44 (0) 759 100 5766

5.1 Abstract

In this paper, I purpose to examine the two-way linkage between FBP and country risk (namely, political risk, economic risk and financial risk) in Turkey using quarterly data from 1992Q4 to 2009Q4. My findings indicate that one cointegrating vector is detected between DFBP and political risk in model 1 and between DFBP and economic risk in model 2 whereas I failed to find any long run relationship between DFBP and financial risk using the Johansen co-integration test. I found one error correction term significant and positive in vector error correction in model 1 and 2, implying that in the long run, foreign bank penetration contributes to economic and political stability. Moreover, I investigated the short run causality based on VAR approach between DFBP and financial risk but I failed to find any significant causality in the VAR model, even at the 10% level. The results of impulse response functions reveal that surprisingly there is no significant relationship between foreign

bank penetration and host country risk variables in the short run in Turkey while controlling GDP and 2001 financial crisis

5.2 Introduction

Since the early 1980's, the perspective of host countries to foreign banks has changed significantly. At the same time, foreign bank participation increased, initially in developed countries, and the wave, then, spread to the developing countries due to liberalisation of financial sectors. This wave has encouraged researchers to analyse multinational banks and they have mostly tried to answer two questions; (i) why do banks invest abroad? And (ii) what is the impact of multinational banks on host countries? Therefore, the impact and determinant of foreign bank penetration in developing and developed countries have attracted considerable attention by researchers.

In the case of country risk[50], Turkey, like other Middle Eastern countries, is in a high-risk environment. When it comes to political and financial risk, Turkey is still a highly volatile country despite current economic and financial developments. This is because of existing regional instability, external problems, high inflation, and high current account deficit and so on. The position of Turkey is relatively better concerning economic risks. However, current economic, financial and political risk factors are not that bad compared to 1990s[51] and early 2000s[52].

---

[50] Country risk arises because of differences in economics, political, social and financial conditions between host and home countries in general.

[51] As a result of internal crisis (economic crisis in 1994) and external crises (Gulf crisis in 1991, East Asian crisis in 1997, Latin America in 1998, and Russian crisis in 1999), Turkey was been in the very high risky environment.

[52] Turkey also experienced banking crisis in November 2000 and economic crisis in February in 2001 .

In Turkey, after the banking and economic crises of the early 2000's, financial globalisation has accelerated and the importance of banking sector in the economy substantially increased from 2005 to 2009. The ratio of the total banking assets to gross national product (GNP) in 2005 increased from 67% (US$ 300 billion) to 82% (US$ 536 billion) in 2009. Achieving macroeconomic stability, the acceleration of reforms especially in the financial sector - the foundation of the Coordination Council and Investment Advisory Council, new FDI law (No.6224) - and the reduction in corporate tax have contributed to the high growth rate in banking sector in Turkey, except the global crisis period (4th quarter of 2008 and 1st quarter of 2009). Consistent with this process, multinational bank activities have increased in Turkey. The share of bank assets held by the foreign banks in Turkey has jumped from US$ 8.15 billion (3.50% of the total banking assets) in 2005Q1 to US$ 84.24 billion (13.72% of the total banking assets) in 2010Q3[53]. These numbers clearly show how Turkey attracted foreign banks interest despite the current global crisis. There is, however, little empirical literature for foreign banks in Turkey despite this current pattern. Specifically, what has not been investigated in detail is the two-way linkage between foreign bank penetration and host country risks in the empirical literature. My main aim is to reveal such a link using a bivariate Vector Error Correction (VEC) and Vector Autoregression (VAR) models.

My findings indicate that there is a cointegrating equilibrium in model 1 and 2 while I could not detect any long run relationship in model 3 using the Johansen cointegration test. In Turkey, foreign bank penetration has significant impact on economic and political risk in the long run. However, I failed to find any short run causality between foreign bank penetration and financial risk in model 3. By analysing impulse response functions, my findings also

---

[53] The ratios are calculated by the author. However, the raw data of total assets and GDP are collected from the Bank Association of Turkey and the Central Bank of Republic of Turkey database.

reveal that; (i) there is a negative relationship between political risk and foreign bank penetration; (ii) In model 2, rising foreign bank penetration is associated with less economic risk and the reverse effect, but, is close to zero throughout 12 quarters; (iii) finally, no relationship between foreign bank penetration and financial risk is observed.

This study is organised as follows. Section 5.3 provides existing literature on the concept. Section 5.4 presents the data and empirical methodology that is used in this study, respectively. Section 5.5 reports the empirical findings from the time series models. Lastly, conclusions are presented in section 5.6.

5.3 Literature Review

Country risk simply refers to unanticipated vulnerability in one or a combination of political, economic and financial risks that occur either by host country enterprises or host country government (Erb et al., 1996)[54]. This clearly mirrors how the performance, policies and implementation of host country governments are of importance in attracting foreign investment. Country risk is likely to affect the location choice of multinational banks because the return and the future of the investment of multinational banks partially depend on these factors. Whilst some researchers have found a significant negative effect of rising country risk – or any sub country risk factor- on multinational bank penetration in host countries, others have failed to find any impact of such risk on the location choice of multinational banks.

---

[54] However, investing abroad is also diversifying across markets and lending patterns and so reducing other risks. There may be a reduction in total risk or the returns may outweigh the increased risk.

On the one hand, foreign bank participation to the host market is likely to affect political, economic and financial stability, especially in developing countries where sectors are not well developed. This is the most important issue for governments because the reason behind the attraction of multinational banks is its positive impacts to the host market. However, existing theoretical and empirical findings about the impact of multinational banks on economic and financial stability is very limited. Moreover, the impact of foreign banks on political stability in the host countries has not been explored, deeply. To fill this gap and to identify the impact of country risk factors on foreign bank penetration in Turkey, I investigate the two-way linkage between country risk – political, economic and financial risks, – and foreign bank penetration.

5.3.1 Political Risk and Foreign Bank

Hypothesis 1 considers that there is a significant linkage between political stability and foreign bank penetration. Political risk, one of the important sub elements of country risk, includes government stability, bureaucratic quality, internal and external conflicts, ethnic problems and so on. Some empirical papers - Root and Ahmed (1979), Wheeler and Mody (1992), Loree and Guisinger (1995), Jun and Singh (1996), and Ngowi (2001) - underline the importance of the political risk for multinational companies. It is clear that unexpected changes in one of the political risk factors are likely to affect the investment decision of multinational banks. Apart from that, substantially rising foreign bank participation or possible dominancy of foreign banks in a host country may affect political stability, either positively or negatively.

Papaioannou (2005) investigates the location decision of multination banks in 19 countries using quarterly data from 1984 to 2002. His study reveals that although financial, economic, and political risks have a significant impact on multinational bank penetration, political risk is found to be the most significant one. Such risk influences more than 50% of the variability in foreign bank flows. Furthermore, while EU law harmonisation, size and institution quality have a significant positive impact on the location decision of foreign banks, corruption and distance have negative and significant effects. Similar to the findings of Papaioannou (2005), country risk is observed to have a significant and negative impact on the location choice of German multinational banks by Wezel (2004), Goldberg and Grosse (1994), Focarelli and Pozzolo (2000) and Barth et al. (2004). They also argue that foreign banks are likely to invest in a country where restrictions on foreign bank penetration are low. Moreover, Barth (2001) points out that using strict regulation for foreign banks in a host country is likely to trigger banking crises. Contrary to these empirical evidences, García-Herrero and Peria (2005) fail to find any significant effect of country risk on foreign bank penetration. Consistent with García-Herrero and Peria (2005), the impact of country risk has not been found to be a significant factor for the location decision of foreign banks in Italy by Magri et al. (2004). Therefore, these findings in this section do not provide clear picture about the impact of political instability on the location choice of multinational banks.

Although numerous papers investigate whether or not political risk is a significant factor influencing the investment of multinational banks, the impact of foreign banks on political stability in the host countries has not been explored in depth. What we know is that multinational banks are likely to affect the political environment especially in developing countries. This effect is likely to change from one country to another based on economic,

social, and political developments of host market and also based on the share of the foreign

banks in the banking system.

Hypothesis 1: There is a significant linkage between political stability and foreign bank

penetration**.**

5.3.2 Economic Risk and Foreign Bank

Similar to Hypothesis 1, Hypothesis 2 considers that the impact of foreign bank penetration

on economic stability is positive and the reverse impact is also positive. Simply, economic

risk arises from unexpected changes in economic variables (such as economic growth, GDP

per capita, interest rates, trade and so on) or a change in a host country's comparative

advantage. Such risk is another important element of country risk. In an early study Goldberg

and Saunders (1980) examine the determinant of US multinational banks in the United

Kingdom. They find that whereas the exchange rate and interest rate are not important

variables to explain location choice of US multinational banks, US trade contributes

extension of US multinational banks.

The findings of Buch (2000) indicate that there is a positive and significant linkage between

foreign banks' FDI and per capital GDP[55]. In addition, Brealey and Kaplanis (1996) and

Yamori (1996) also try to explain the investment decision of foreign banks and they conclude

that per capital GDP in host countries seems most important factor that affects the location

decision of multinational banks. Similar to Brealey and Kaplanis (1996) and Yamori (1996),

Herrero and Peria (2005) aim to answer the question of how US, Italian and Spanish banks

---

[55]The study of Buch (2000) is based on German multinational banks.

decide their worldwide location? Their study implies that rising GDP is associated with higher foreign bank penetration. However, inflation, which is another economic variable, had no significant impact on the location decision of multinational bank.

Hypothesis 2: Rising economic stability is associated with increasing foreign bank assets and vice versa.

5.3.3 Financial Risk and Foreign Bank

Hypothesis 3 is related to financial risk. The hypothesis asserts that there is positive linkage between financial stability and foreign bank penetration. Financial risk - another important element of country risk - involves foreign debt, current account deficits, exchange rate and liquidity in general. The result of recent empirical and theoretical studies is complex about the effect of foreign bank penetration on financial stability. Ankara Chamber of Commerce report (2006) argues that rising profit transfers in a host market increases the foreign deficit of host market. Therefore, financial stability may be affected negatively due to profit transfer of foreign banks. Moreover, the participation of foreign banks in a market is likely to increase competition in the banking sector. According to Mathieson and Schinasi (2000) and Jeon et al. (2006), competition makes domestic banking sector weaker and reduces the quality of domestic banks' assets.

However, the study of Haas and van Lelyveld (2003) empirically proves that rising foreign bank penetration in Central and Eastern European counties was associated with higher credit supply, even throughout the crisis period. Therefore, foreign bank penetration has contributed to most importation element of financial development which is credit availability. In line with

the finding of Hass and van Lelyveld (2003), Clarke (2006) points out that domestic credit is positively affected by foreign bank penetration[56]. However, his finding also mirrors that the contribution of foreign banks to credit provision for small and medium companies is less than that of domestic banks. However, the findings of Satta (2004) show that foreign banks in Tanzania do not have a significant effect on the credit availability. Lee (2002) performs econometric model to examine the effect of foreign bank participation and financial liberalisation on financial development and competitiveness using 1157 commercial banks in 45 Middle East and North Africa countries (MENA). He reveals that foreign bank penetration in MENA countries are positively affected by financial development.

Lee (2003) examines the location decision of foreign banks in Korea and his findings reveal that not only economic development but also financial development plays an important role in attracting foreign banks to invest in Korea after the Asian crisis. Moreover, a recent study - Hayakawa et al. (2011) – specifically underlines the importance of exchange rate stability for multinational companies[57].

Hypothesis 3: The impact of financial stability on foreign bank penetration is positive and the reverse impact is also positive.

5.4 Data and Methodology

The time series variables used in the empirical tests of this study consists of quarterly data for the period 1994Q1 to 2009Q4 which includes 64 observations. The time series data used in

---

[56] Clarke (2006) investigates the effect of foreign bank entry on domestic market credit availability using the surveying technique in 38 transition and developing countries.
[57] They use the date of 93 countries between 1985 and 2007.

this study are collected from the Banks Association of Turkey and the Political Risk Service (PRS) group. I employ the following variables:

FBP: Total assets held by foreign banks in the banking sector. Holding 50% share acquisition by a foreign bank or foreign investor in a host country is accepted as a minimum requirement to have an important influence on the management of acquired bank in Turkey. In other words, acquiring 50% or more shares of domestic bank are recorded as a foreign bank in most of the countries. However, FDI arises when a foreign investor acquires 10% or more shares of domestic company and obtains, moreover, managerial control on domestic company. Therefore, there is a difference between banking FDI and total assets of foreign banks.

In this paper, I accepted that FBP measured as the total value of foreign bank assets. It is important to know the relationship between FDI and foreign bank activities before to select foreign bank assets as a proxy for foreign bank penetration. Nigh et al. (1986) and Goldberg and Johnson (1990), as expected, found positive relationship between US FDI and foreign activities of US banks. Similar to Nigh et al. (1986) and Goldberg and Johnson (1990), Focarelli and Pozzolo (2000) found positive relationship between non-bank FDI and bank choice of location in the OECD countries. In addition, the study of Miller and Parkhe (1998) reveal that there is correlation between non-bank FDI and bank FDI. Grosse and Goldberg (1991) and Esperanca and Gulamhussen (2001) used aggregate foreign bank assets while examining the determinants of foreign bank penetration, same as I used. Lending to the private sector depends on the supply and demand for loans. As FDI in the banking sector raises the credit provision to the host market. Thus, this will increase total assets. In other world, this will increase the size of the balance sheet and therefore FDI affects FBP. Figure

15 shows the total assets of foreign banks in Turkey, between 1994 and 1996, the growth of foreign bank assets was very small. Although it is difficult to see in Figure 15, 8.5 % quarterly growth was achieved in foreign bank assets between 1996 and 2000, and then from 2000 to 2003 the growth was negative due to economic and banking crisis. Since the end of 2003, except Q4-2008, and Q1 -2009, foreign bank penetration has accelerated because of positive macroeconomic indicators, high profitability in the banking sector, new FDI law and reduction in corporate tax.

ERR: Economic risk index indicates economic weaknesses and strengths in Turkey and takes values between 0 and 50, while 0 correspond to the highest economic risk and 50 to the lowest one. The index is assessed by PRS group using some sub-variables such as GDP per capita, inflation, current account as a percentage of GDP, GDP growth, budget balance as a percentage of GDP variables. In addition, the variable also is expressed in its logarithmic transformation. Figure 15 shows economic risk indexes in Turkey from 1994 to 2009 based on quarterly data. Between 1994 and 2001, such risk variable fluctuated between 32 and 24. However, as a result of 2001 crisis in Turkey, the risk index dropped to 17. Therefore, with the score of 17 points, Turkey was classified as a high economic risk country. Since the middle of 2002, such index turned its direction upward because of positive macroeconomic indicators and acceleration of privatisation activities.

FRR: Financial risk index indicates countries ability to pay its debt in general. The risk variable ranges from 0 (maximum risk) to 50 (minimum risk). The variable is assessed using exchange rate, foreign debt as a percentage of GDP, current account as a percentage of goods and services, foreign debt service as a percentage of goods and services, liquidity variables.

Moreover, the variable was expressed in its logarithmic transformation. Figure 16 shows financial risk performance of Turkey from 1994 to 2009, based on quarterly data. Over time, such risk index fluctuated between 37 and 26 where Turkey was classified as a medium political risk country, except Asian-Russian Crises and Turkish financial crisis periods.

PRR: Political risk index ranges from 0 (maximum risk) to 100 (minimum risk). PRS group assesses such risk index using some sub-variables which are government stability, bureaucratic quality, internal and external conflicts, religious and ethnic problems, investment profile, socioeconomic conditions, democratic accountability and law and order. Moreover, the variable is expressed in its logarithmic transformation. Figure 17 shows political risk performance of Turkey from 1994 to 2009, based on quarterly data. Between 1994 and 1999, such risk index fluctuated between 66 and 51. Therefore, Turkey was classified as a medium political risk country. However, as a result of 2001 crisis in Turkey, the risk index dropped below 50 where the country was classified as a high political risk country. Since the end of 2001, such index turned its direction upward and remained above 50.

GDP: Nominal GDP is used as a control variable since it is believed that GDP is an important determinant of FDI, FBP and FPI. The findings of Buch (2000), Brealey and Kaplanis (1996) and Yamori (1996) Herrero and Peria (2005) underlined that GDP in host countries seems most important factor that affects the location decision of multinational banks. Similar to these findings, the study of Luca and Spatafora (2012) implies that rising GDP is associated with higher capital flows in developing countries.

DUM2001: DUM2001 is a dummy variable and used as a control variable since it is believed that financial crisis in 2001 led to significant changes in the Turkish banking sector.

Table 25: Descriptive Statistics for the Variables of FBP, PRR, ERR and FRR

|	FBP	PRR	ERR	FRR
Mean	8.900	4.092	3.359	3.458
Median	8.600	4.094	3.344	3.486
Maximum	11.280	4.248	3.569	3.637
Minimum	7.357	3.857	2.862	3.157
Std. Dev.	1.212	0.099	0.133	0.127
Skewness	0.797	-0.421	-0.888	-0.747
Kurtosis	2.427	2.453	5.591	2.883

Note: the data bases on 69 observations (1992Q4-2009Q4)
*Source: The Bank Association of Turkey and PRS group*

Descriptive statistics for FBP, PRR, ERR, and FRR variables are shown in Table 25. FBP variable shows variation, ranging from 7.357 to 11.280. Moreover, there is also variation in PRR ERR, and FRR variables, ranging from 3.857 to 4.248, from 2.862 to 3.569, and from 3157 to 3.637, respectively. Table 25 also provides information about the distribution of the variables by using the Skewness and Kurtosis techniques. While FBP variable is positively skewed, PRR ERR, and FRR variables are negatively skewed. Regarding Kurtosis, the distribution of FBP, PRR and ERR variables has large tails (more peaked) whilst the distribution of ERR variable has small tails (flatter).

Figure 14: Total Assets of Foreign Banks (US Billion $)
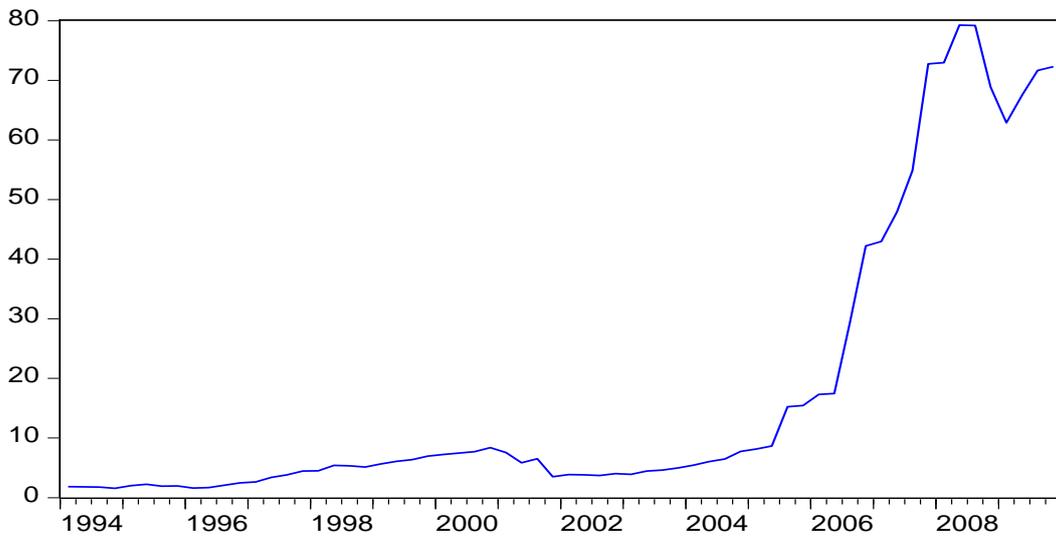

Source: The Bank Association of Turkey

Figure 15: Economic Risk Index (ERR)
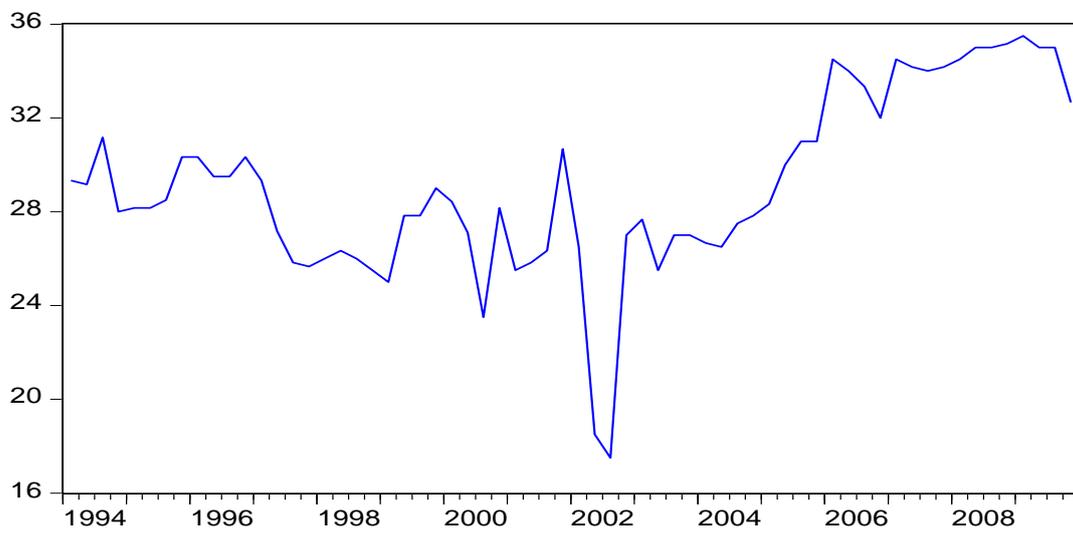
Source: PRS Group

Figure 16: Financial Risk Index (FRR)
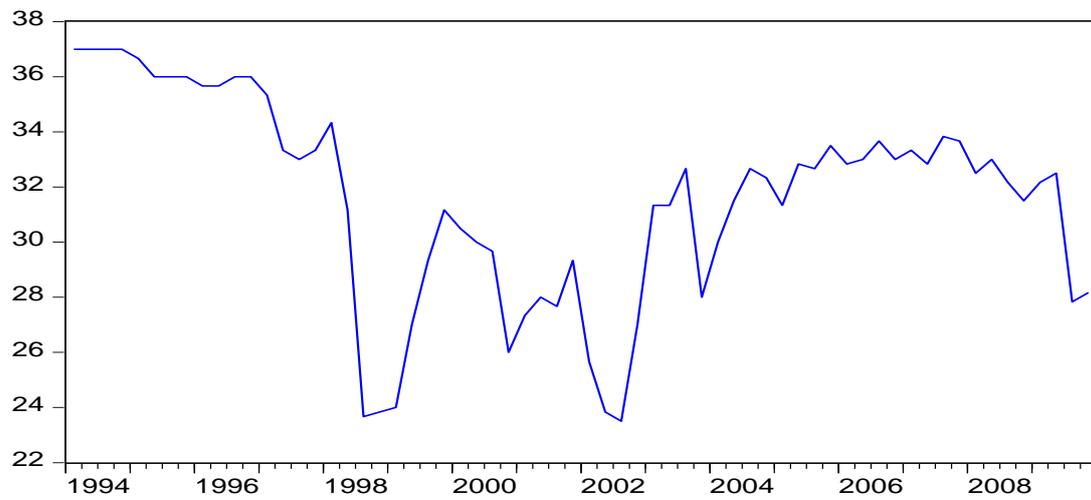
Source: PRS Group

Figure 17: Political Risk Index (PRR)
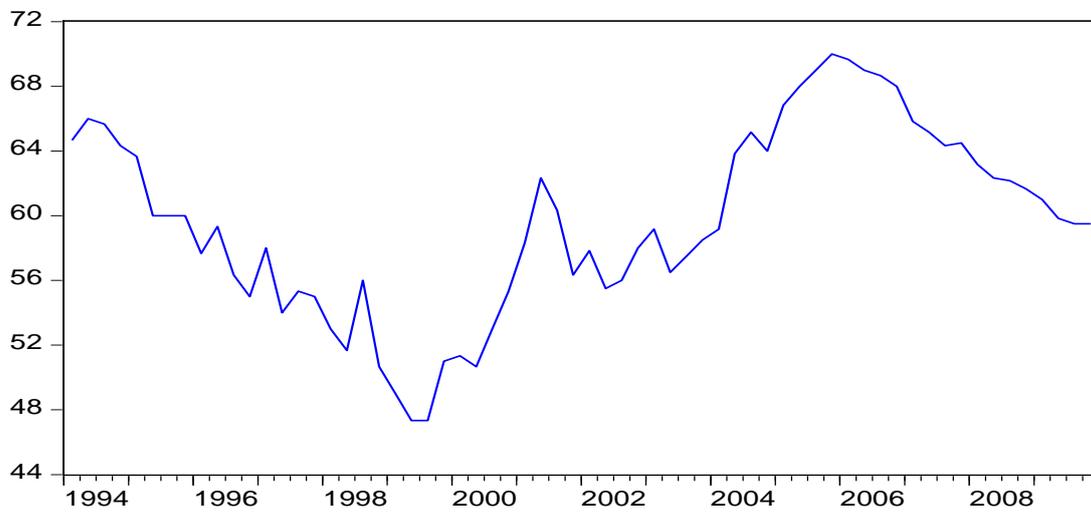
Source: PRS Group

My study aims to identify the long run and short run dynamics between country risk and foreign bank penetration in Turkey. Therefore, the study aims to open up new debate in this field. In this framework, the first step is to check stationarity of the time series variables. Stationarity is an important concept for time series models because nonstationary series lead to high R^2 and lead to statistically significant coefficients even though time series variables are not related (Brooks, 2008)[58]. At present, the most efficient unit root techniques are NG-Perron (Ng and Perron, 2001), ERS point optimal and DF-GLS tests which are performed to test whether the time series variables have unit root or not. One of the important problems in the unit root tests appears in a case of structural breaks. Perron (1989, pp. 1) underlined that "standard tests of the unit root hypothesis against trend stationary alternatives cannot reject the unit root hypothesis if the true data generating mechanism is that of stationary fluctuations around a trend function which contains a one-time break." In other words, Perron (1989) argued that although a time series variable is I(0), the result of unit root tests may indicates that such variable is I(1) if there is a break in trending. The time series data (PRR, ERR and FRR) are by design bounded above and (PRR = 0 to 100 and ERR and FRR = 0 to 50). Therefore, the data are more likely trend stationary process with breaks and these variables cannot be truly I(1). Thus, stationarity processes with breaks are easily mistaken from unit root processes (see, Perron (1989). However, in this paper models are been performed based on result from the unit root tests.

The PP test of Perron and Ng (1996) was developed by Ng and Perron (2001) using the GLS detrending procedure of ERS. The unit root test was constructed by four test statistics which are MZα, MZt, MSB, and MPT. In my models, only MZα test statistic is employed. The MZα

---

[58] The behaviours or properties of nonstationarity and stationary treat totally differently. While the effect of shock gradually declines over time (t, t+1and t+n) for the stationary series, the effect of shock in time t does not have smaller effect in time t+1 and in time t+n for the nonstationary series. This situation indicates first problem of nonstationary series. Second problem of nonstationary series is related to spurious regression (Brooks, 2008).

test statistic is defined as; $MZ\alpha = (T^{-1} (y_T^d)^2 - f_0)/(2_K)$ where $K = \sum_{t=2}^{T}(y_{t-1}^d)^2/T^2$, the statistics $MZ\alpha$ is more effective version of $Z\alpha$ of the PP in terms of size and power.

Another unit root test that used in this paper is the ERS point optimum. The latter, was developed by Elliott et al. (1996), is based on the quasi-differencing regression which is defined as; $d (v_t|a) = d (z_t|a)'ʮ (a) +e_t$; where $d (v_t|a)$ and $d (z_t|a)$ are quasi- differenced data for v_t and z_t, respectively. Moreover, e_t is the residual term and $ʮ (a)$ is the coefficient to be estimated in the quasi-differencing regression. While the null hypothesis tested is $\alpha =1$, the alternative hypothesis tested is $\alpha= \bar{a}$ where $\bar{a} = 1-7/T$ when z_t contains only constant, and $\bar{a}=1-13.5/T$ when z_t contains both a constant and a trend. The test statistic in the ERS point optimum to test Ho is defined as; $P_T = (SSR (\bar{a}) - (\bar{a}) SSR (1)) / f_o$ where f_o, at frequency zero, is an estimator for the error spectrum.

Last unit root test is the ADF-GLS technique. The early paper – Dickey and Fuller (1979)[59] - investigated how to test unit root in the time series variables. However, the ADF test has low power when AR root is close to 1 (Cochrane, 1991). Thus, the alternative hypothesis can be considered wrong when sample size is small (DeJong et al., 1992). To avoid these weaknesses, the modified ADF test, in other words ADF-GLS, is also performed to test the stationarity of time series variables.

It is common to use Johansen cointegration technique to test cointegrating vectors among the integration time series variables. Such a test was initially put forward by Granger (1986), Hendry (1986) and Engle and Granger (1987). If two or more time series variables have a common stochastic trend, the cointegration exists among the variables and also either one

---

[59] Dickey and Fuller (1979) are advice to the readers for more details about the concept.

(unidirectional) or two (bidirectional) way(s) causality is present[60]. Therefore, the next step is to test whether there is a long run relationship among I(1) time series variables or not because in order to perform VEC model, at least one long run equilibrium relationship must exist. If not, unrestricted VAR model will be suitable in order to test only short run linkages. As the suggestion of Johansen (1988), Johansen and Juselius (1990), and Johansen (1996), the developed version of the Johansen cointegration test - the Johansen maximum likelihood procedure - was applied for the I (1) variables in order to determine whether cointegration exists among the variables using the trace and eigenvalue tests.

VECM is a restricted model of VAR for the cointegrated variables. Engle and Granger (1987) point out that the presence of long run relationship or cointegrating vector among I (1) variables allow to perform VECM. Engle and Granger (1987) conclude that the presence of one or more cointegrating vector(s) among the variables shows the existence of error correction representation. The latter means that changes in predicted variable and changes in independent variables are a function of the disequilibrium level in the cointegrating equilibrium (Masih and Masih, 1996). With performing VECM for the cointegrated variables, the short run and long run dynamics among the variables can be captured. However, unrestricted VAR model - Vector Autoregression – uses to capture only short run dynamics among the time series variables[61].

The output of unrestricted and restricted VAR based Granger causality tests does not explain the signs of relationships in the models and how long the impacts will remain effective. To obtain this information, the generalised impulse response and variance decomposition

---

[60] Granger (1986), Granger (1988), Johansen (1988), Kunst and Neusser (1990), and Johansen and Juselius (1990) are recommended to the readers for more details about the cointegration test.
[61] Simply, The Granger causality is a test to find (i) whether X variable Granger cause Y variable and (ii) whether Y variable Granger cause X variable. If Y variable does not cause X, the parameters of X on the lagged Y are jointly zeros (Granger, 1969).

techniques are applied. Traditional impulse response (Sims, 1980), based on Choleski factorization of Vector Autoregression, heavily criticised due to the orthogonality assumption. Traditional impulse response, sensitive to variable order, was developed by Pesaran and Shin (1998) and Koop et al. (1996). The developed version of impulse response technique is called "generalised impulse response", which is not sensitive of the ordering of the variable in the system. The effect of X on Y or the effect of changing X on Y can be evaluated over specific time by the impulse response functions (Hill et al., 2008). In other words, the magnitude of the effect of the innovation is investigated by the outcome of generalised impulse response technique (Ramirez, 2006; Pesaran and Shin, 1998). As suggested by Pesaran and Shin (1998) and Koop et al. (1996), the generalised impulse response technique is applied to find out the sign of relationship among variables and to find out how these effects will remain effective or change over time[62]. Apart from the generalised impulse response technique, I employ the variance decomposition technique to get information about the percentage of the movement in the endogenous variables that are because of their own innovations, against innovations to other variables.

5.5 Empirical Findings

Prior to the application of cointegration test, the stationarity of FBP, ERR, FRR and PRR is tested. To test the order of integration of these variables, NG-Perron (Ng and Perron, 2001), ERS Point Optimal (Elliot et al., 1996) and DF-GLS tests are applied. The outcomes of these tests for the variables are displayed, in Table 26, with both their differences and log-levels forms.

---

[62] See, Koop et al. (1996) and Pesaran and Shin (1998) for further details about the concept.

<p style="text-align:center">**Table 26. Unit Root Test for the Variables of FBP, PRR, ERR and FRR**</p>

	Ng-Perron (MZ_α) [a]		ERS Point Optimal [b]		DF-GLS [c]	
	C	**C & T**	**C**	**C & T**	**C**	**C & T**
FBP	1.773	-2.392	81.944	38.850	1.429	-1.100
DFBP	-22.880**	-33.478**	0.747**	2.685**	-4.496**	-7.911**
ERR	-5.306	-8.664	5.405	10.322	-1.450	-2.168
DERR	-80.119**	-79.070**	0.336**	1.080**	-8.629**	-8.632**
FRR	-4.675	-8.297	7.636	11.247	-1.494	-2.181
DFRR	-32.924**	-32.938**	0.728**	2.698**	-7.118**	-7.132
PRR	-2.587	-3.468	12.302	30.464	-1.168	-1.437
DFRR	-33.452**	-33.425**	0.714**	2.650**	-8.431**	-8.515**

C and C&T denote constant and constant and trend, respectively. D initial letter denotes the first difference of time series variables. The integration order for the logged GDP is one using the unit root tests. The findings regarding GDP and DUM2001 are not shown in Table 26 because the aim of this paper only investigates relationship among types of capital flows.

** and * denote statistically significant at 0.01 and 0.05 levels, respectively.

[a] including only constant, one-sided test of the Ho that the variable has unit root; critical values are equal to -5.70, -8.10, and -13.80 at 10%, 5%, and 1% levels, respectively.

[a] including a constant and a trend, one-sided test of the Ho that the variable has unit root; critical values are equal to -14.20, -17.30, and -23.80 at 10%, 5%, and 1% levels, respectively.

[b] including only constant, one-sided test of the Ho that the variable has unit root; critical values are equal to, 4.008, 3.023, and 1.900 at 10%, 5%, and 1% levels, respectively.

[b] including a constant and a trend, one-sided test of the Ho that the variable has unit root; critical values are equal to 6.777, 5.689, and 4.235 at 10%, 5%, and 1% levels, respectively.

[c] including only constant, one-sided test of the Ho that the variable has unit root; critical values are equal to, -1.613, -1.945, and -2.599 at 10%, 5%, and 1% levels, respectively.

[c] including a constant and a trend, one-sided test of the Ho that the variable has unit root; critical values are equal to -2.836, -3.132, and -3.701 at 10%, 5%, and 1% levels, respectively.

The result of NG-Perron test in Table 26 shows that FBP has unit root at the integration of zero order. This is because calculated Ng Perron MZ_α test statistics are greater than its critical values in the model with an intercept and the model with a trend and an intercept at the 5% level. Thus, to find out integration of order, first difference is taken for the variable and the results clearly indicates that the null hypothesis cannot be rejected. Therefore the variable is integrated with order 1. Results obtained from the NG Perron tests are similar to the ones

found using the ERS point optimal and DF-GLS unit root tests. For all risk variables - ERR, FRR, and PRR - integration of zero order is not found[63]. In other words, the null hypotheses of nonstationarity for the risk variables cannot be rejected at the integration of zero order in all cases. However, at the first difference, these variables seem stationary at the 5% level. As a result, all variables - FBP, ERR, FRR, and PRR - are found integration of one order. The data (PRR, ERR and FRR) are by design bounded above and (PRR = 0 to 100 and ERR and FRR = 0 to 50) as explained previous section. The data are more likely trend stationary process with breaks and these variables cannot be truly I(1). However, I am proceeding with the estimation assuming the data are integrated I(1) processes and this is an approximation for stationary processes with multiple breaks.

The next step is to check for the time series variables whether there is a cointegration relationship(s) (or equilibrium(s)) among the variables in the long run or not[64]. The results of Johansen maximum likelihood procedure shows that in model 1 there is one cointegrating vector using the trace and maximum eigenvalue tests. In model 2, while the maximum eigenvalue test indicates a cointegrating equilibrium at the 0.05 level, the trace test indicates only 1 cointegrating equation at the 0.1 level. The null hypothesis of no cointegration between foreign bank penetration and financial risk cannot be rejected at the 5% level. Existing cointegrating equilibrium in model 1 and 2 allows us to investigate both the long run and short run dynamics by performing bivariate VEC models whereas unrestricted VAR model is applied to test short run dynamics between foreign bank penetration and financial risk in model 3 after controlling DGDP and 2001 financial crisis.

---

[63] The first differences of ERR, FRR and PRR variables are DERR, DFRR and DPRR, respectively.
[64] Granger (1988), Johansen (1988), Kunst and Neusser (1990), Johansen and Juselius (1990), and Johansen (1996) are recommended to the readers for more details about the cointegration test.

Table 27: Johansen Cointegration Test

Model 1.							
Hypothesized **No. of CE(s)**	**Eigenvalue**	**Trace Statistic**	**Critical Values (0.05)**	**Prob.**	**Max-Eigen** **Statistic**	**Critical Value(0.05)**	**Prob.**
r=0	0.212	14.778	15.494	0.063*	14.533	14.264	0.045**
r≤1	0.003	0.244	3.841	0.621	0.244	3.841	0.621
Model 2.							
Hypothesized **No. of CE(s)**	**Eigenvalue**	**Trace Statistic**	**Critical Values (0.05)**	**Prob.**	**Max-Eigen** **Statistic**	**Critical Value(0.05)**	**Prob.**
r=0	0.213	16.417	15.494	0.036**	16.118	14.264	0.025**
r≤1	0.004	0.298	3.841	0.584	0.298	3.841	0.584
Model 3.							
Hypothesized **No. of CE(s)**	**Eigenvalue**	**Trace Statistic**	**Critical Values (0.05)**	**Prob.**	**Max-Eigen** **Statistic**	**Critical Value(0.05)**	**Prob.**
r=0	0.125	9.209	15.494	0.346	9.005	14.264	0.285
r≤1	0.003	0.203	3.841	0.651	0.203	3.841	0.651

*Note: ** and * denotes rejection of the hypothesis at the 0.05 and 0.1 levels. The optimal lag lengths used for each bivariate cointegration models are determined by the LR information criteria. The first differences of FBP, PRR, ERR and FRR variables were used in all models. Since the aim of this paper is to investigate the relationship between DFBP and host country risk (namely DERR, DPRR and DFRR), Eigenvalue and Trace test are performed without including control variables.*

MacKinnon-Haug-Michelis (1999) p-values.

The general equations of VECM for 1st and 2nd models are shown below;

VECM 1:

Eq.(1); $DFBP_t = \beta_1 + \infty_1 \varepsilon_{t\text{-}i} + \sum_{i=1}^{n} \alpha_1 DPRR_{t-i} + \sum_{i=1}^{n} \mu_1 DFBP_{t-i} + \sum_{i=1}^{n} \nu_1 DGDP_{t-i}$

$+ \sum_{i=1}^{n} \rho_1 DUM2001_{t-i} + e_t$

Eq.(2); $DPRR_t = \beta_2 + \infty_2 \varepsilon_{t\text{-}i} + \sum_{i=1}^{n} \alpha_2 DFBP_{t-i} + \sum_{i=1}^{n} \mu_2 DFBP_{t-i} + \sum_{i=1}^{n} \nu_2 DGDP_{t-i}$

$+ \sum_{i=1}^{n} \rho_2 DUM2001_{t-i} + e_t$

VECM 2:

eq.(3); $DFBP_t = \beta_3 + \infty_3 \varepsilon_{t\text{-}i} + \sum_{i=1}^{n} \alpha_3 DERR_{t-i} + \sum_{i=1}^{n} \mu_3 DFBP_{t-i} + \sum_{i=1}^{n} \nu_3 DGDP_{t-i}$

$+ \sum_{i=1}^{n} \rho_3 DUM2001_{t-i} + e_t$

eq.(4);

$$DERR_t = \beta_4 + \infty_4 \varepsilon_{t-i} + \sum_{i=1}^{n} \alpha_4 DERR_{t-i} + \sum_{i=1}^{n} \mu_4 DFBP_{t-i} + \sum_{i=1}^{n} \nu_4 DGDP_{t-i}$$

$$+ \sum_{i=1}^{n} \rho_4 DUM2001_{t-i} + e_t \quad [65]$$

VAR 1:

eq.(5); $DFBP_t = \beta_5 + \sum_{i=1}^{n} \alpha_5 DFRR_{t-i} + \sum_{i=1}^{n} \mu_5 DFBP_{t-i} + \sum_{i=1}^{n} \nu_5 DGDP_{t-i}$

$+ \sum_{i=1}^{n} \rho_5 DUM2001_{t-i} + e_t$

eq.(6); $DFRR_t = \beta_6 + \sum_{i=1}^{n} \alpha_6 PRO_{t-i} + \sum_{i=1}^{n} \mu_6 DFBP_{t-i} + \sum_{i=1}^{n} \nu_6 DGDP_{t-i}$

$+ \sum_{i=1}^{n} \rho_6 DUM2001_{t-i} + e_t$

Where n denotes the numbers of lag which were determined by the information criterions, β_{1-6}, α_{1-6}, ν_{1-6} and ρ_{1-6} are parameters for estimation, and e_t and u_t are residual terms. ε_{t-1} represents error correction term in equation 1-4.

The results from VEC and VAR models are presented in Table 28. In model 1, where we investigate the long run linkage between political risk and foreign bank penetration in Turkey. At the 5% level, estimated error correction term is significant, implying that there is unidirectional long run equilibrium from foreign bank penetration to political risk in Turkey. Therefore, this result clearly mirrors that foreign bank participation contributes to political risk in the long run. It is surprising to find significant impact of foreign bank penetration on political risk in Turkey because existing literature focused on only reverse effect which is not significant, regarding my finding at 5% level.

---

[65] To detect long-run relationship between DFBP and DPRR and between DFBP and DERR, the control variables are avoided from my VEC model 1 and 2. However, I add control variables the generalised impulse response functions of 1st and 2nd models.

In model 2, I test whether there is long run linkage between foreign bank penetration and economic risk. My finding reveals that in the long run, foreign bank penetration affects economic stability. This is consistent with existing literature because it is well-known that the main reason behind the motivation of governments to attract foreign bank is its direct and indirect impact on economic environment in a host market. Moreover, this result mirrors how foreign bank penetration is important for economy risk in the long run in Turkey. The reverse error correction term, but, is not significant at the 5 % level. In last model, the result of VAR based Granger causality test indicates that surprisingly there is no causal relationship between foreign bank penetration and financial risk in the short run.

Table 28: VECM and VAR Tests

	Dep.	Long Run Relationship	
		Ind.	
		ECM	
		DPRR	DFBP
Model 1.	DFBP	0.030 {1.842}*	
	DPRR		-0.008 {-2.690}**
		DERR	DFBP
Model 2.	DFBP	-0.016 {-1.233}	
	DERR		0.026 {3.950}**
		Short Run Relationship	
		Ind.	
		DFRR	DFBP
Model 3.	DFBP	[2.391] (0.122)	
	DFRR		[0.598] (0.439)

*Note: Dep, Ind, and ECM denote dependent variables, independent variables and error correction terms, respectively. The first differences of FBP, PRR, ERR, FRR and GDP variables were used in all models. The optimal lags for unrestricted and restricted VAR models are selected by the LR information criteria. The results of diagnostics tests such as autocorrelation LM, heteroskedasticity tests and the inverse roots of AR characteristic polynomial, are reported in Table 29-30 and in Figure 24 in the appendix, are found to be satisfactory. The numbers in {-}, [-] and (-) are the t-statistics, chi-squares and probabilities, respectively. ** and * denote statistically significant at the 5% and 10% levels, respectively. Since the aim of this paper is to investigate the relationship between FBP and host country risk (namely DERR, DPRR and DFRR), the possible causal impacts of control variables on the host country risk variables and DFBP are not presented in Table 28. Moreover, to detect long-run relationship between DFBP and DPRR and between DFBP and*

DERR, the control variables are avoided from my VEC model 1 and 2.

The generalised impulse response function test is employed in three time series models to have information about the sign of relationship and how long these impacts will remain effective or change over time[66]. Figure 18 to 23 reports the accumulated generalised response of foreign bank penetration to one standard deviation (s.d.) in shocks in country risk variables, vice versa. Figure 19 illustrates that in response to initial shock to foreign bank penetration by political stability is close to zero over time. The reverse response is, surprisingly, close to zero at the end of 12 quarters, implying that there is no impact of foreign bank penetration on political risk in Turkey. This result is not consistent with the finding in Table 28. Figure 20 illustrates that economic risk variable, surprisingly, does not have any effect on the location choice of multinational banks in Turkey The reverse response is close to zero over time in the short-run although I detected long-run linkage from DFBP to DERR. With respect to model 3, Figures 22 - 23 illustrates that there is no distinct relationship between foreign bank penetration and financial risk in Turkey. This is because the significance of control variables on both the host country risk variables and DFBP is more than the significance of host country risk variables on DFBP and the significance DFBP of the country risk variables.

---

[66]It is worthy to mention that since the main purpose of this study is to examine two-way linkages between foreign bank penetration and risk in Turkey, in response to a shock to X variable by X variable is not investigated. Therefore, six impulse response functions are presented in Figure 18 to 23.

Response to Generalized One S.D. Innovations ± 2 S.E.

Figure 18: Response of DPRR to DFBP
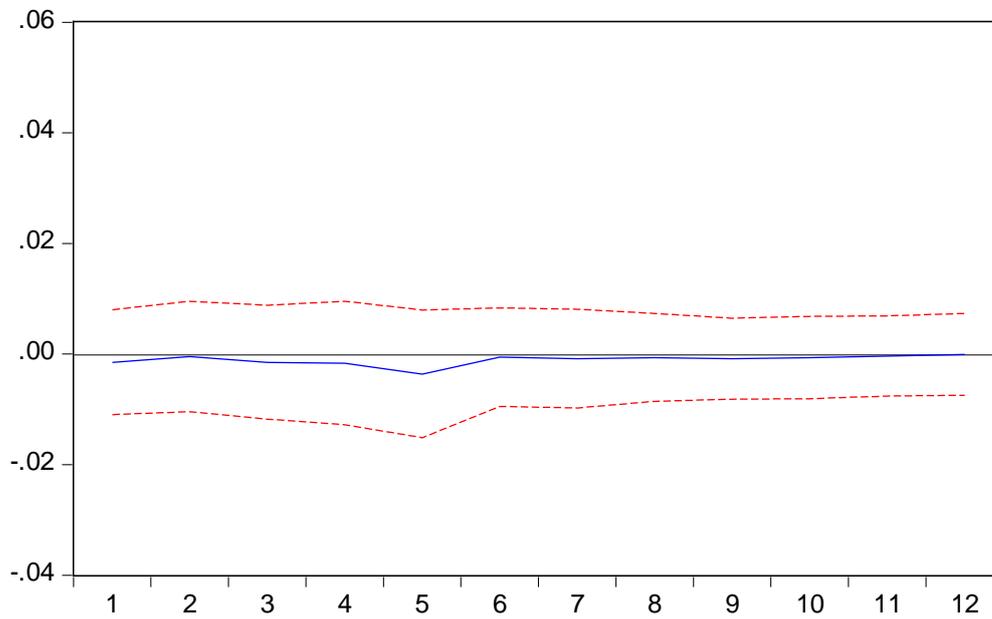

Figure 19: Response of DFBP to DPRR
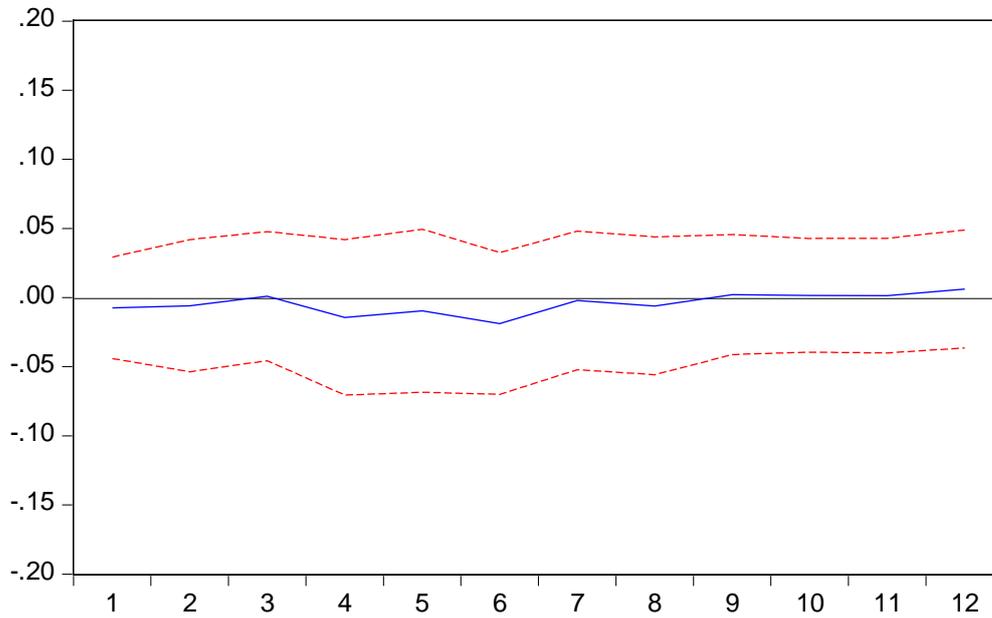
Figure 20: Response of DERR to DFBP
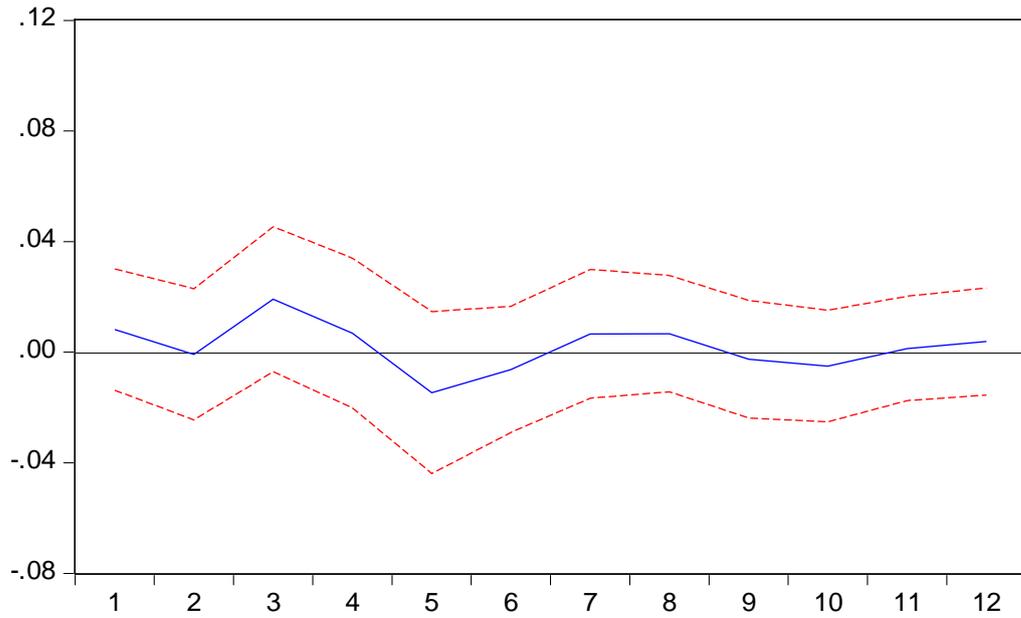
Figure 21: Response of DFBP to DERR
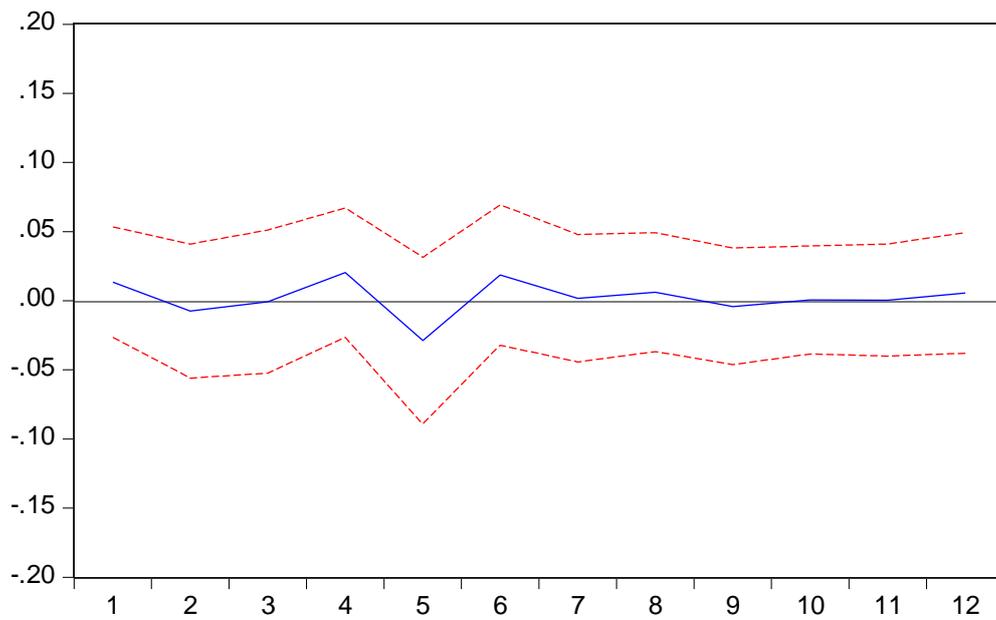
Figure 22: Response of DFRR to DFBP
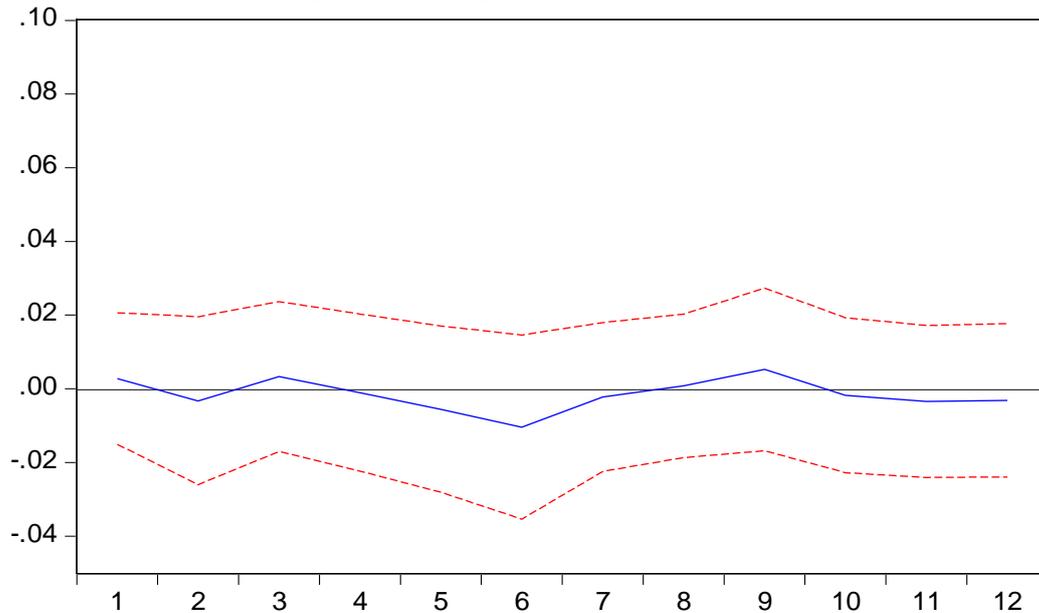
Figure 23: Response of DFBP to DFRR
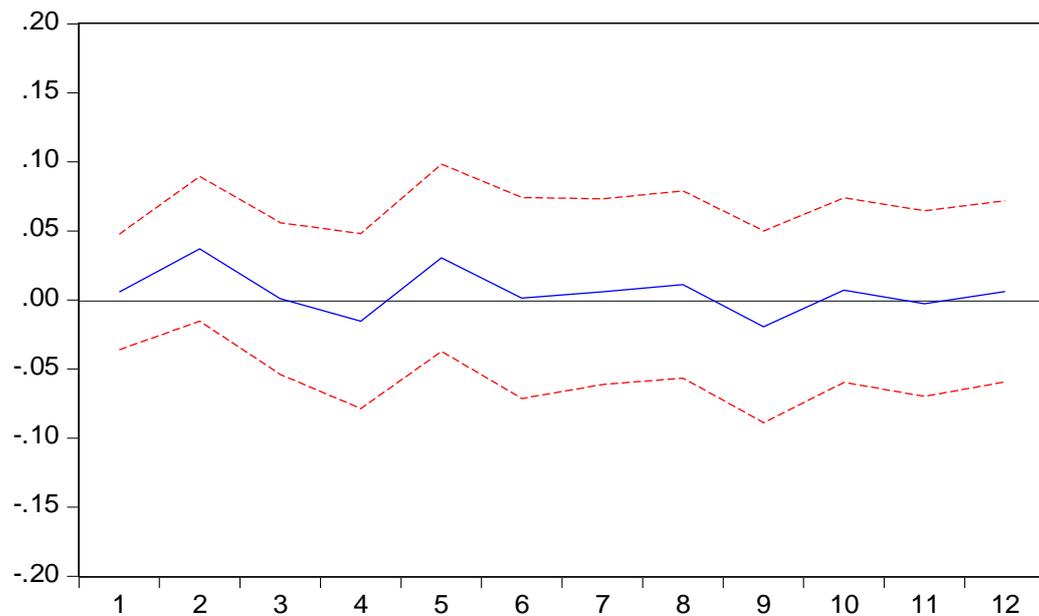
As part of the diagnostic tests, I apply the numbers of diagnostic tests, such as autocorrelation LM and Box and VAR residual heteroskedasticity, to test the stability of the VAR models. My evidence, presented in Table 29 to 30 in the appendix, show that there is no heteroskedasticity and no autocorrelation in my models. In addition, the inverse roots of AR characteristic polynomial is also applied to detect the stability of the restricted and unrestricted VAR models and the findings are found to be satisfactory for all models.

5.6 Conclusion

Using restricted and unrestricted VAR models and the Johansen co-integration test, I examined the short run and long run dynamic relations between foreign bank penetration and country risk variables, namely political risk, economic risk and financial risk in Turkey. The time series variables are based on quarterly data from 1992Q4 to 2009Q4. To test whether the time series variables have unit root or not, I performed newly developed unit root tests - Ng-Perron, ERS point optimal and DF-GLS -. I have determined that foreign bank penetration and country risk variables are integrated of order 1. The long run relationship between DFBP and all country risk components was tested using the Johansen cointegration test. My findings show that one cointegrating vector exists in model 1-2 where I investigated the relationship between DFBP and DPRR and between DFBP and DERR, respectively. However, the null hypothesis is that no cointegrating equilibrium between FBP and financial risk could not be rejected.

The result of VECMs indicates that foreign bank penetration has a strong power for explaining political and economic stabilities in the long run in Turkey. It is rational and in line with existing literature to find long run relationship from DFBP to DERR because Buch (2000) also finds positive effect of FBP on GDP per capita. However, no detailed literature exists about relationship between FBP and PRR, my finding, thus, is likely to open new debate in this field. To fail to find any linkage from host country risk to DFBP in Turkey is interesting because even one of the initial contributors of the theory of multinational enterprises – Tobin (1969) - underlined the importance of risk factor on FDI. I also tested the

short run causality based on VAR approach between DFBP and DFRR but I failed to find any significant causality in the VAR model, even at the 10% level. I also employed the generalised impulse response techniques. The finding in the generalised impulse response functions indicated that there is no impact of foreign bank penetration on any host country risk variables (namely, DERR, DPRR and DFRR). The reverse effects are close to zero throughout 12 quarters.

5.7 References

[1] Ankara Chamber of Commerce (2006). "Paranin Yabanci Damatlari Raporu."

[2] Barth, J., G. Caprio, et al. (2004). "Bank Regulation and Supervision: What Works Best?" Journal of Financial Intermediation **13**: 205-248.

[3] Brealey, R. A. and E. C. Kaplanis (1996). "The Determination of Foreign Banking Location."Journal International Money and Finance **15**(4): 577-597.

[4] Brooks, C. (2008). Introductory Econometrics for Finance. London, Cambridge University Press.

[5] Buch, C. (2000). "Why Do Banks Go Abroad? Evidence from German Data."Journal of Financial Markets, Instruments and Institutions **9**(1): 33-67.

[6] Clarke, G. R. G., R. Cull, et al. (2006). "Foreign Bank Participation and Access to Credit Across Firms in Developing Countries "Journal of Comparative Economics **34**(4): 774–795.

[7] Cochrane, J. H. (1991). "A critique of the application of unit root tests." Journal of Economic Dynamics and Control **15**(2): 275-284.

[8] DeJong, D. N., J. C. Nankervis, et al. (1992). "The Power Problem of Unit Root Tests in Time Series with Autoregressive Errors."Journal of Econometrics **53**(1-3): 323–343.

[9] Dickey, D. A. and W. A. Fuller (1979). "Distribution of the Estimators for Autoregressive Time Series with a Unit Root."Journal of the American Statistical Association **74**: 427-431.

[10] Elliott, G., T. Rothenberg, et al. (1996). "Efficient Tests for an Autoregressive Unit Root." Econometrica **64**(4): 813-836.

 [11] Engle, R. F. and C. W. J. Granger (1987). "Cointegration and Error-Correction: Representation, Estimation, and Testing." Econometrica **55** (2): 251-276.

[12] Erb, C., C. R. Harvery and T. E. Viskanta (1996). " Political Risk, Economic Risk and Financial Risk." Financial Analysts Journal **52**(6): 29-46.

[13] Esperanca, J. P. and Gulamhussen, M. A. (2001). "(Re)Testing the 'Follow the Customer' Hypothesis in Multinational Bank Expansion." Journal of Multinational Financial Management **11**(3): 281-293.

[14] Focarelli, D. and A. F. Pozzolo (2005). "Where do Banks Expand Abroad? An Empirical Analysis."Journal of Business **78**(6): 2435-2464.

[15] Garcia-Herrero, A. (1997). "Banking Crises in Latin America in the 1990s: Lessons from Argentina, Paraguay, and Venezuela." <u>International Monetary Fund Working Paper</u> **WP/97/170.**

[16] García-Herrero, A. and M. S. M. Peria (2005). "The Mix of International Banks' Foreign Claims: Determinants and Implications." <u>World Bank Policy Research Working Paper</u> **No. 3755.**

[17] Goldberg, L. G. and A. Saunders (1980). "The Causes of US Bank Expansion Overseas: The case of Great Britain." <u>Journal of Money, Credit and Finance</u> **12**: 630-643.

[18] Goldberg, L. G. and R. Grosse (1992). "Location Choice of Foreign Banks in the United States." <u>Journal of Economics and Business</u> **46**(5): 367-379.

[19]Goldberg, L.G. and D. Johnson (1990). "The Determinants of US Banking Activity Abroad." <u>Journal of International Money and Finance</u> **9**: 123-137.

[20] Granger, C. W. J. (1969). "Investigating Causal Relations by Econometric Models and Cross-spectral Methods." <u>Econometrica</u> **37**(3): 424–438.

[21] Granger, C. W. J. (1986). "Developments in the Study of Cointegrated Economic Variables."<u>Oxford Bulletin of Economics and Statistics</u> **48**: 213–228.

[22] Grosse, R. and L. Goldberg (1991). "Foreign Activity in the United States: An Analysis by Country of Origin." <u>Journal of Banking and Finance</u> **15**(6): 1092-1112.

[23] Haas, R. and I. van Lelyveld (2006)."Foreign Banks and Credit Stability in Central and Eastern Europe. A Panel Data Analysis" <u>Journal of Banking & Finance</u> **30**(7):1927-1952.

[24] Hayakawa, K., F. Kimura, et al. (2011). "How Does Country Risk Matter for Foreign Direct Investment?" <u>IDE Discussion Papers</u> **No.281**.

[25] Hendry, D. F. (1986). "Econometric Modelling with Cointegrated Variables: An Overview." <u>Oxford Bulletin of Economics and Statistics</u> **48**: 201-228.

[26] Hill, R. C., W. E. Grifiths, et al. (2008). <u>Principles of Econometrics</u>, John Wiley & Sons.

[27] Jeon, Y., S. M. Miller, P. A. Natke (2006). "Do Foreign Bank Operations Provide a Stabilizing Influence in Korea?"", <u>The Quarterly Review of Economics and Finance</u>,**46**(1): 82-109.

[28] Johansen, S. (1988). "Statistical Analysis of Cointegrating Vectors."<u>Journal of Economic Dynamics and Control</u> **12**: 231-254.

[29] Johansen, S. (1996). "Likelihood Based Inference in Cointegrated Vector Autoregressive Models." Oxford: Oxford University Press.

[30] Johansen, S. and K. Juselius (1990). "Maximum Likelihood Estimation and Inference on Cointegration with Applications to the Demand for Money."Oxford Bulletin of Economics and Statistics **52**: 169-210.

[31] Jun, K. W. and H. Singh (1996). "The Determinants of Foreign Direct Investment: New Empirical Evidence." Transatlantic Corporations **5**: 67-106.

[32] Koop, G., M.H. Pesaran, et al. (1996). "Impulse Response Analysis in Nonlinear Multivariate Models." Journal of Econometrics **74**(1):119-147

[33] Kunst, R. and K. Neusser (1990). "Cointegration in a Macroeconomic System."Journal of Applied Econometrics **5**(4): 351-365.

[34] Lee, B. (2003). "The Determinants of Foreign Banks' Entry in Korea and Its Effects on Korean Domestic Banks' Performance."Economic Papers, **6**(1):42-65

[35] Lee, J. (2002), "Financial Liberalization and Foreign Bank Entry in MENA; Financial sector strategy and policy." The World Bank, Washington, D.C.

[36] Loree, D. and S. Guisinger (1995). "Policy and non-Policy Determinants of U.S. Foreign Direct Investment."Journal of International Business Studies **26**(2): 281-299.

[37] Margi, S., A. Mori, et al. (2004). "The Entry and the Activity Level of Foreign Banks in Italy: An Analysis of the Determinants" Journal of Banking and Finance **29**(5):1295-1310.

[38] Masih, A. M. M. and R. Masih (1996). "Energy Consumption, Real Income and Temporal Causality: Results from a Multi-country Study Based on Cointegration and Error-correction Modelling Techniques." Energy Econ **18**: 165-183.

[39] Mathieson, D. J. and Schinasi G. J. (2000). ""International Capital Markets Developments, Prospects, and Key Policy Issues."International Monetary Fund.

[40] Miller, S. R. and A. Parkhe (1998). "Patterns of Expansion of U.S. Banks' Foreign Operations." Journal of International Business Studies **29**(2): 359-390.

[41] Ng, S. and P. Perron (2001). "Lag Selection and the Construction of Unit Root Tests with Good Size and Power." Econometrica **69**(6): 1519–1554.

[42] Ngowi, H. P. (2001). "Attracting New Foreign Direct Investment to Tanzania."Tanzanet Journal **1**(2): 23-39.

[43] Nigh, D., Cho, K. R. and S. Krishnan (1986). "The Role of Location-Related Factors in U.S. Banking Involvement Abroad: An Empirical Examination." <u>Journal of International Business Studies</u> **17**: 59-72.

[44] Papaioannou, E. (2005). "What Drives International Bank Flows? Politics, Institutions and Other Determinants." <u>European Central Bank Working Paper</u>. **437**.

[45] Perron, P. (1989). "The Great Crash, the Oil Price Shock, and the Unit Root Hypothsis." <u>Econometrica</u> **57**(6): 1361-1401.

[46] Perron, P. and S. Ng (1996). "Useful modifications to unit root tests with dependent errors and their local asymptotic properties." <u>Review of Economic Studies</u> **63**: 435-465.

[47] Pesaran, M. H. and Y. Shin (1998). "Generalised Impulse Response Analysis in Linear Multivariate Models."<u>Economics Letters</u> **58**: 17-28.

[48] Ramirez, M. (2006). "Is Foreign Direct Investment Beneficial for Mexico? An Empirical Analysis, 1960-2001." <u>World Development</u> **34**(5): 802-817.

[49] Root, F.R. and A. Ahmed (1979). "Empirical Determinants of Manufacturing Direct Foreign Investment in Developing Countries" <u>Economic Development and Cultural Change</u> **27**: 751-767.

[50] Satta, T. A. (2004). "The Influence of Foreign Bank Entry on Lending to Small Firms in Tanzania."The Journal of Policy Reform **7**(3): 165-173.

[51] Sims, C. A. (1980), "Macroeconomics and Reality", Econometrica **48**(1):1-48.

[52] Tobin, J. (1969). "A General Equilibrium Approach to Monetary Theory." Journal of Money, Credit, and Banking **1**: 15–29.

[53] Wezel, T. (2004). "Foreign Bank Entry into Emerging Economies: An Empirical Assessment of the Determinants and Risks Predicated on German FDI Data." Deutsche Bundesbank Discussion PaperSeries 1, **N.01**.

[54] Wheeler, D. and A. Mody (1992). "International Investment Location Decisions: The Case of U.S. Firms" Journal of International Economics **33**:57-76.

[55] Yamori, N. (1998). "A note on the Location Choice of Multinational Banks: The case of Japanese Financial Institutions,." Journal of Banking and Finance **22**: 109-120.

5.8 Appendix

Table 29: Autocorrelation LM Tests

Null Hypothesis: no serial correlation at lag order h								
Model 1			**Model 2**			**Model 3**		
Lags	**LM-Stat**	**Prob**	**Lags**	**LM-Stat**	**Prob**	**Lags**	**LM-Stat**	**Prob**
4	19.224	0.257	4	14.516	0.560	5	12.039	0.741

Table 30: VAR Residual Heteroskedasticity Tests

No cross terms (only levels and squares)					
Model 1		**Model 2**		**Model 3**	
Chi-sq	**Prob**	**Chi-sq**	**Prob**	**Chi-sq**	**Prob**
111.397	0.964	299.473	0.202	308.617	0.945

Note: Df denotes degree of freedom.

Figure 24: Inverse Roots of AR Characteristic Polynomial
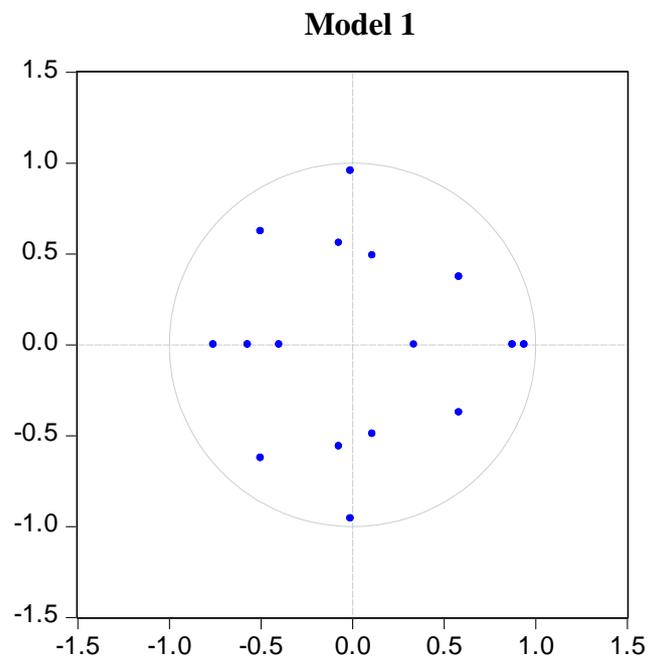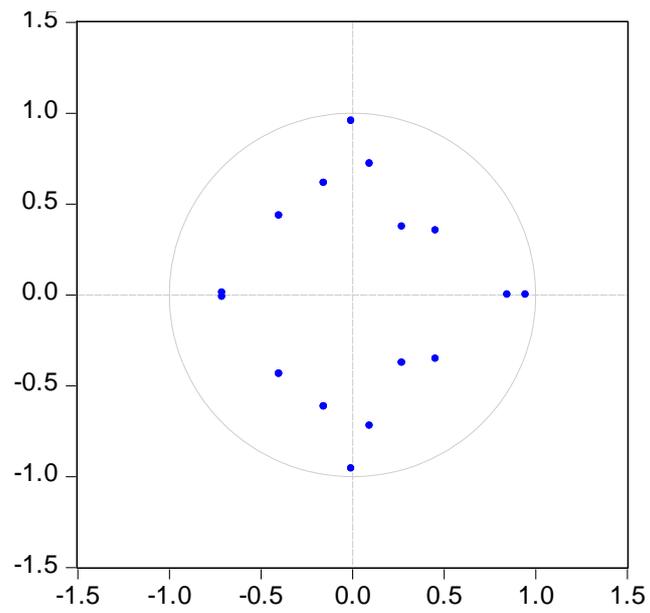
Model 1
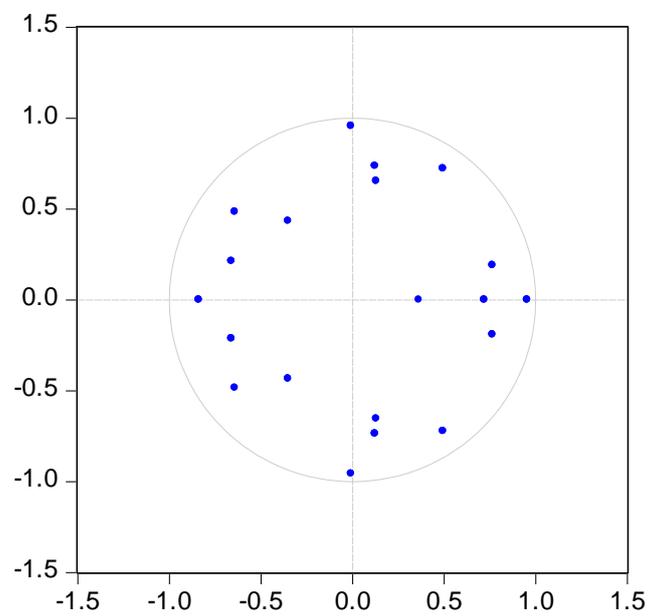
Model 2

Model 3

5.8.1 Data Appendix

This appendix describes the data source used in my empirical models. The time series variables used in the models are shown below;

5.8.1.1 FBP

» **Definition:** Total assets held by foreign banks in the banking sector. Holding 50% share acquisition by a foreign bank or foreign investor in a host country is accepted as a minimum requirement to have an important influence on the management of acquired bank in Turkey. In other words, acquiring 50% or more shares of domestic bank are recorded as a foreign bank in most of the countries.

» **Source:** The Banks Association of Turkey (2011), the data are available at 20.12.2010

https://www.tbb.org.tr/en/banks-and-banking-sector-information/data-query-system/financial-tables/41

» **Measure:** In this paper, I accepted that foreign bank penetration measured as the total value of foreign bank assets. Because the total value of foreign bank assets holds the lion shares of banking FDI. As I did, Grosse and Goldberg (1991) and Esperanca and Gulamhussen (2001) are used aggregate foreign bank assets while examining the determinants of foreign bank penetration. The variable was expressed in its logarithmic transformation.

» **Period:** The FBP variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

5.8.1.2 PRR

» Definition: Political risk index ranges from 0 (maximum risk) to 100 (minimum risk). PRS group assesses such risk index using some sub-variables which are government stability, bureaucratic quality, internal and external conflicts, religious and ethnic problems, investment profile, socioeconomic conditions, democratic accountability and law and order**»**

»Source: The Political Risk Service group (2011), the data were available at 05.03.2011 http://www.prsgroup.com/

» Measure: The PRR variable was expressed in its logarithmic transformation.

» Period: The PRR variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

5.8.1.3 ERR

» Definition: Economic risk index indicates economic weaknesses and strengths in Turkey and takes values between 0 and 50, while 0 correspond to the highest economic risk and 50 to the lowest one. The index is assessed by PRS group using some sub-variables such as GDP per capita, inflation, current account as a percentage of GDP, GDP growth, budget balance as a percentage of GDP variables.

» Source: The Political Risk Service group (2011), the data were available at 05.03.2011 http://www.prsgroup.com/

» Measure: The ERR variable was expressed in its logarithmic transformation.

» Period: The ERR variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

5.8.1.4 FRR

» Definition: Financial risk index indicates countries ability to pay its debt in general. The risk variable ranges from 0 (maximum risk) to 50 (minimum risk). The variable is assessed using exchange rate, foreign debt as a percentage of GDP, current account as a percentage of goods and services, foreign debt service as a percentage of goods and services, liquidity variables.

» Source: The Political Risk Service group (2011), the data were available at 05.03.2011 http://www.prsgroup.com/

» Measure: The FRR variable was expressed in its logarithmic transformation.

» Period: The FRR variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

5.8.1.5 GDP

» Definition: Nominal GDP is used as a control variable since it is believed that GDP is an important determinant of FDI, FBP and FPI. The findings of Buch (2000), Brealey and Kaplanis (1996) and Yamori (1996) Herrero and Peria (2005) underlined that GDP in host countries seems most important factor that affects the location decision of multinational banks. Similar to these findings, the study of Luca and Spatafora (2012) implies that rising GDP is associated with higher capital flows in developing countries.

» Source: The Central Bank of the Republic of Turkey (2011), the data was available at 05.08.2013

http://evds.tcmb.gov.tr/yeni/cbt-uk.html

» Measure: The GDP variable was expressed in its logarithmic transformation.

» Period: The GDP variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

5.8.1.6 DUM2001

» Definition: DUM2001 is a dummy variable and used as a control variable since it is believed that financial crisis in 2001 led to significant changes in the Turkish banking sector.

» Source: The dummy variable is generated by the author.

» Measure: The raw data were used.

» Period: The DUM2001 variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

Chapter 6: Capital Flows to Turkey: Multivariate VAR Approach

Dervis Kirikkaleli

Stirling Management School, Division of Economics, University of Stirling, FK9 4LA

Email: dervis.kirikkaleli@stir.ac.uk

Telephone: +44 (0) 759 100 5766

6.1 Abstract

The gradual raising of capital flows in developing countries has made developing countries more interesting to investigate over the last 20 years. Turkey is a typical example of a developing country that achieved high growth rate in the foreign capital attraction, especially throughout the last decade. I aim to investigate the linkage between foreign direct investment (FDI), foreign portfolio investment (FPI) and foreign bank penetration (FBP), while controlling DGDP and 2001 financial crisis in Turkey using quarterly data from 1994Q1 to 2009Q4 in this paper. In order to obtain information about causal relationship among the time series variables, VAR based block exogeneity wald test is performed. The finding from this test indicates that; changes in DFBP significantly lead to changes in DFDI; there is also unilateral causality which runs from FPI to DFBP at 5% level. Using the variance decomposition technique, I also find that DFDI and FPI have little explanatory power for the evolution of DFBP in Turkey; the contribution of DFBP to the variability of DFDI is more than that of FPI; the contribution of DFDI to FPI variability ranges between 0.000% and 7.611% throughout the 12 quarter periods whilst the contribution of DFBP to FPI variability ranges between 0.000% and 9.122%.

6.2 Introduction

Capital flows to most of the developing countries have substantially increased in the last 2 decades, except the current global crisis period. According to the Institute of International Finance (IIF), capital inflows to developing countries reached peak point in 2007 with US$ 1222 billion from approximately US$ 200 billion in 2000 but declined to US$ 780 billion in 2008[67]. In case of the composition of capital inflows, portfolio investment is dominant with 48% of total capital inflows in 2009 in developing countries excluding Chine. The share of direct inflows in total inflows is 34% while other inflows accounted for 18% of total inflows to developing countries. Apart from the portfolio theory[68], this pattern in developing countries can be explained by the minimisation of government controls on the most of the sectors, macroeconomic stability, financial deregulation and the willingness of governments to attract foreign capital because of its necessity to fund domestic projects[69]. The distribution of capital flows has also changed at the same period. Although the lion share of capital flows had been attracted by developed countries until the end of the 1990s, the share had declined dramatically at the beginning of the 2000's. Thus, the portion of capital flows that developing countries attracted have significantly increased. These factors encourage researchers to investigate capital flows that go to developing countries. Turkey is a typical example of a developing country that achieved tremendous growth rate in the foreign capital attraction, especially over the past decade. This factor and the on-going negotiation between the EU and Turkey about the integration of Turkey into the EU have made Turkey a more interesting country to investigate and opened new debate on foreign investment in Turkey.

---

[67]The database of IIF involves around 50 low, middle and high income developing countries.

[68] According to the portfolio theory, an investor prefers to invest in a foreign market where rate of return is more relative to that in home market (see Cuddington, 1987).

[69] As well known, short and long term capital flows to a host country are one of the important ways to finance public deficit and current account.

Turkey did not face the difficulty to adapt itself to liberalisation process in the world at the beginning of the 1980's. The liberalisation process in Turkey started with the implementation of Economic Stabilisation program -, which was supported by the IMF and World Bank – to minimize the intervention of Turkish government in monetary policy and finance system and to restructure Turkish economy on 24 January 1980. Other improvements in the 1980's are capital account liberalisation, reopening Istanbul stock exchange, the acknowledgment of Foreign Capital Decree. However, until the beginning of the 2000's, the capital flow could not be attracted as expected because of internal crises, ethnic problems, political and macroeconomic instability, more importantly, bureaucratic barriers for foreign projects.

Over the period 1994-1999, the accumulated net capital flow to Turkey is US$ 15 billion. The accumulated net FDI and FPI in this time period are $US 3 and -0.4 billion, respectively. However achieving macroeconomic and political stability as a result of sound fiscal and monetary policies have attracted more and more foreign investors to Turkey since the beginning of the 2000's (Yorukoglu and Kilinc, 2012). From 2000 to 2005, the accumulated net capital flow that Turkey attracted is US$ 57 billion, which is more than three-fold relative to previous period. At the same period, FDI, FPI and FBP increased to approximately US$ 16, 15 and 15 billion, respectively, this is mainly because of new FDI law, restructuring of the banking system, and the acceleration of privatisation. Even in the current crisis period - 2006 to 2010-, the accumulated net capital flow in Turkey jumped approximately $US 250 billion. Consistent with the pattern of capital flows in Turkey, FDI, FPI and FBP substantially increased at the period of 2006-2010, as shown in Table 31.

This study aims to reveal relationship among the types of capital flows in Turkey (namely, FDI, FBP and FPI), while controlling GDP and 2001 financial crisis. In this perspective, my hypotheses are as follows:

Hypothesis 1: There is significant relationship between FBP and FDI. This is because foreign bank penetration in most of the host countries record as a FDI in the banking sector. In other words, to some degree, foreign bank investment involves FDI in a host market.

Hypothesis 2: There is significant causality from the long term investment variables to short term one. The maturity of FDI and FBP is more than that of FPI. Therefore, direct investors are likely to obtain relatively deeper information about the political, social, economic conditions of host markets. I know that obtaining detailed information about the specific sector(s) of host markets is likely to affect other investors' decision. Thus, it is rational to find causal effect of FDI and FBP on FPI.

My findings from VAR based block exogeneity wald test show that one way causality from DFBP to DFDI is detected at 5% level. Moreover, the null hypothesis that FPI does not Granger cause DFBP can be rejected. I also find that FBP appears most exogenous within the foreign investment variables; DFBP appears to have higher influence than FPI on DFDI in Turkey; the contribution of DFDI to FPI variability ranges between 0.217% and 9.070% throughout 12 quarter periods whilst the contribution of DFBP to FPI variability ranges between 4.755% and 12.451%.

Table 31: Capital Flows in Turkey (Million US $)

Period	FPI	FDI	FBP	Capital Flow
1994-1999	-468	3208	6972	15365
2000-2005	15146	16130	15438	57467
2006-2010	20313	70831	75317	191549

Source: The Central Bank of the Republic of Turkey and The Banks Association of Turkey

6.3 Literature Review

Capital flows to most of the developing countries have substantially increased over the last 20 years, except during the current global crisis period. This trend encourages researchers to investigate the factors that motivate investors to invest abroad and the impact of foreign investment on the development and the performance of emerging markets. Therefore, rising capital flows in the world have encouraged researchers to investigate this field either empirically or theoretically. The impact and determinant of capital flows, specifically FDI and FPI, have taken considerable attention by researchers.

As a result of deregulation, financial integration and globalisation, the impact of capital flows on a host market has been investigated, more and more. Rising capital flows to developing countries are likely to accelerate economic growth rates, this, however, may also trigger economic or financial crisis as a result of capital flow reversal while Clarke (1996), Claessens et al. (1995)[70], Grabel (1995)[71] underlined the importance of capital flows on the volatility of host countries financial markets. Liquidity and currency risks of the host country can be affected dramatically as a result of instant capital outflow. The result of capital outflows can

---

[70]Claessens et al. (1995) use the data of five developing and developed countries.

[71] The primary aim of the study of Grabel (1995) is to examine the hypothesis that financial liberalisation tend to volatile stock markets in six developing economies which are Argentina, Chile, Colombia, Korea, Philippines and Venezuela.

be more tragic if banking system is not developed and lacks a sufficient regulatory framework. Turkey in 1994 and 2001, Mexico in 1994, Asia in 1997, and Argentina in 2001 can be good examples of this situation. In contrast, Tesar and Warner (1995) and Bakaert (1995)[72] conclude that rising capital flows as a result of financial liberalisation does not trigger volatility in the finance markets.

In the case of the impact of FPI on the host markets, there is trade-off between its benefits and costs. This is because while some authors underline the importance of FPI on economic and financial stability, others blame FPI as the main reason behind the volatility in finance sectors in the world[73]. Nevertheless, authors, who analyse the pattern of FDI, mostly underline the stability factor of FDI on a host country's economy rather than its costs. For instance, Lipsey (1999 and 2001)[74], Albuquerque (2003)[75] and Wei (2001) examine the stability effect of FDI and FPI on host countries' economies and they find that FDI are less volatile than FPI[76]. More recently research is done by Levchenko and Mauro (2007) to analysis the behaviour of types of capital flows. Their finding is similar to the finding of Lipsey (1999 and 2001), Albuquerque (2003) and Wei (2001). Regarding foreign bank penetration, the results of recent empirical and theoretical studies is less complex about the effect of FBP on financial stability because the majority of researchers underline the importance of FBP on credit availability and financial stability (see, Haas and van Lelyveld (2003), Clarke (2006) and Lee (2002)). In line with such findings, Altinkemer (1998) and

---

[72] Tesar and Werner (1995) investigate the effect of U.S. equity flows to 64 emerging economies using annually data from 1978 to 1991 whereas Bakaert (1995) use the data of nineteen emerging economies between 1985 and 1992.

[73] 1994 Mexican and 1997 Asian crises can be good example for this situation.

[74] Lipsey (1999) is purpose to analysis the pattern of the types of capital flows in US, Japan, Europa, Asia and Latin America from 1970 to 1996 while Lipsey (2001) only focuses on the volatility of the forms of capital flow in the three crises which are Latin America, Mexico in 1994 and East Asia in 1997.

[75] Albuquerque (2003) aims to model the forms of capital flow under the assumptions of imperfect enforcement of financial contracts. His model is based on the model is used by Thomas and Worral (1994). The data sample that used in this paper is from 1975 to 1997.

[76] However, Claessens et al. (1995) put forward that FDI is as volatile as other types of international investment.

Yeldan (2003) perform the empirical model to identify the impact of capital flows on Turkish banking sector. They clearly conclude that capital inflows to Turkey increase credit availability in the market and provide extra financial source to fund additional investment projects.

To benefit from the direct or indirect advantages of capital flows, governments, initially in developed countries and then in developing countries, tried to implement some innovative ways to accelerate foreign investments to their countries. This wave has encouraged researchers to investigate the determinant of capital flows. In general, the factors that affect capital flows can be divided into two parts which are push and pull factors. The factors have been deeply analysed in the literature. The study of Chuhan et al.(1993)[77]; Claessens et al. (1995); Fernandez-Arias (1996); Agenor (1998), Mody et al. (2001) and Ferrucci et al. (2004) determined the factors that affect the destination of capital flows in the context of two factors which are the pull and push factors.

Pull factors refer to global motivation factors of capital flow to emerging markets. Such factors, also called "country specific factors" reflect risk and domestic opportunities in general (Goldstein et al., 1991). Bekaert (1995) examines the relationship between investment barriers and market integration in nineteen countries and also investigates whether the expected return are related to the measure of openness. His finding indicates that opportunities and risks in the host markets are important factors for attracting foreign investment.

---

[77]Chuhan et al. (1993) use the date of US capital flows in 9 Latin American and 9 Asian countries between January 1988 and September 1992.

The second is push factors reflecting external determinants. Many authors put forward that push factors in economic growth, stock price, interest rates, and regulations related to the foreign investment are likely to be important factors affecting the capital flows originating in the capital abundant countries. Calvo et al. (1993) point out that the pattern of foreign investment in U.S. can be explained by push factors such as the decrease in interest rates. Kim et al. (2004) performed the VAR model to investigate the macroeconomic effects of capital account liberalisation in Korea. Their finding revealed that regulations on the capital account transactions are the main determinant of capital flows to Korea. The determinant of foreign portfolio investment in Turkey is examined by Çulha (2006) between the periods of 1992 and 2005. His finding shows that the rising US interest rate is associated with more and more foreign portfolio and short-term capital flows. Balkan et al. (2002) aim to examine the relationship between macroeconomic variables and short term capital flows in Turkey, using monthly data from 1992 to 2002. Their finding indicates that the rising stock market prices are associated with higher short term capital flow to Turkey, whereas the ratio of public sector borrowing requirement to GNP does not have any significant impact on it.

Ruffin and Russekh (1986)[78]– examine the hypothesis that US direct investment in developing countries is a perfect substitute for US portfolio investment and vice versa. Their finding puts forward that these two forms of capital flows are perfect substitute in developing countries. Moreover, they concluded that there is no significant effect of multinational enterprises on the net capital flows. Contrary to the finding of Ruffin and Russekh (1986), Kant (2010) finds that portfolio investment in developing markets is increased by 54 cent as a result of increasing one dollar in US direct investment. In other words, relationship between FDI and FPI is complementary. Feldstein-Horioka (1980) reported that their most striking

---

[78]The primary aim of the study of Ruffin and Russekh (1986) is to investigate linkage between domestic investment and domestic saving in 21 OECD countries using annually data from 1960 to 1974.

finding was that there is no relationship between two types of capital flows - FPI and FDI. This is because rising FDI by a dollar is associated with declining FPI by a dollar to restore capital market equilibrium in a domestic market (Froot and Stein, 1991).

Why foreign banks encourage foreign direct investment and foreign portfolio investment is another important concept. Foreign bank penetration is important for the direct investment of multination enterprises as well as foreign portfolio investors in developed and developing countries because foreign banks especially are more willingly to provide credits to foreign investors than domestic banks and to obtain credit for the short and long term investments in a host markets is vital in order to realise investment.

Although the impact and determinant of FBP, FDI, and FPI were deeply examined by researchers, either empirically or theoretically, the linkage between these variables still remains a puzzle. Meaning that, this paper aims to reveal what the relationship between FBP, FDI, and FPI in Turkey is using multivariate VAR approach. The analysis can be applied to any developing country.

The paper adopts a four-stage procedure to test the relationship among foreign investment variables which are FBP, FDI, and FPI. As an early step, I perform KPSS and ERS point optimal unit root tests to detect the stationarity of the time series variables, in other words to detect the integration order of the time series variables. In the second stage, VAR based block exogeneity wald test is performed in order to obtain information about causal relationship among the time series variables. Apart from the VAR based block exogeneity wald test, the variance decomposition technique is also applied.

6.4 Data

The data used in this paper are foreign bank penetration (FBP), foreign direct investment (FDI) and foreign portfolio investment (FPI). The data of such variables are collected from the Central Bank of the Republic of Turkey and the Banks Association of Turkey. The time series variables used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations. The definition of time series variables are shown below;

FBP: Total assets held by foreign banks in the banking sector. Holding 50% share acquisition by a foreign bank or foreign investor in a host country is accepted as a minimum requirement to have an important influence on the management of acquired bank in Turkey. In other words, acquiring 50% or more shares of domestic bank are recorded as a foreign bank in most of the countries. However, FDI arises when a foreign investor acquires 10% or more shares of domestic company and obtains, moreover, managerial control on domestic company. Therefore, there is a difference between banking FDI and total assets of foreign banks.

In this paper, I accepted that FBP measured as the total value of foreign bank assets. It is important to know the relationship between FDI and foreign bank activities before to select foreign bank assets as a proxy for foreign bank penetration. Nigh et al. (1986) and Goldberg and Johnson (1990), as expected, found positive relationship between US FDI and foreign activities of US banks. Similar to Nigh et al. (1986) and Goldberg and Johnson (1990), Focarelli and Pozzolo (2000) found positive relationship between non-bank FDI and bank choice of location in the OECD countries. In addition, the study of Miller and Parkhe (1998)

reveal that there is correlation between non-bank FDI and bank FDI. Grosse and Goldberg (1991) and Esperanca and Gulamhussen (2001) used aggregate foreign bank assets while examining the determinants of foreign bank penetration, same as I used. Lending to the private sector depends on the supply and demand for loans. As FDI in the banking sector raises the credit provision to the host market. Thus, this will increase total assets. In other world, this will increase the size of the balance sheet and therefore FDI affects FBP.

.

FDI: Foreign direct investment is one of the types of international investment. Such investment arises when a foreign investor acquires 10% or more shares of domestic company and obtains, moreover, managerial control on domestic company. The variable was also expressed in its logarithmic transformation.

FPI: Another type of international investment is foreign portfolio investment which arises when a foreign investor does not have any managerial control on domestic company in a host country. The raw data of FPI variable were used in the multivariate VAR model to investigate relationship among the time series variables because some observations for the variable are negative.

GDP: Nominal GDP is used as a control variable since it is believed that GDP is an important determinant of FDI, FBP and FPI. The findings of Buch (2000), Brealey and Kaplanis (1996) and Yamori (1996) Herrero and Peria (2005) underlined that GDP in host countries seems most important factor that affects the location decision of multinational banks. Similar to these findings, the study of Luca and Spatafora (2012) implies that rising GDP is associated with higher capital flows in developing countries.

DUM2001: DUM2001 is a dummy variable and used as a control variable since it is believed that financial crisis in 2001 led to significant changes in the Turkish banking sector.

Figure 25 shows the total assets of foreign banks in Turkey. Between 1994 and 1996, the growth of foreign bank assets was very small. Although it is difficult to see in Figure 25, 8.5 % quarterly growth was achieved in foreign bank assets between 1996 and 2000, and then from 2000 to 2003 the growth was negative due to economic and banking crisis. Since the end of 2003, except Q4-2008, and Q1-2009, foreign bank penetration has accelerated because of positive macroeconomic indicators, high profitability in the banking sector, new FDI law and reduction in corporate tax. Figure 26 shows total FDI inflows in Turkey. Until 2000, Turkey attracted less than US $ 1 billion FDI inflows annually. From 2003 to 2007 high growth rate been achieved in FDI inflows and in 2007, US $ 22 billion FDI directed to Turkey but current global crisis has led to dramatic reduction in direct investment to Turkey. The pattern of FPI is much more volatile relative to that of FDI, especially in Asian crisis in 1997, Russian crisis in 1998, economic crisis in Turkey in 2001 and current global crisis periods, as seen in Figure 27.

Figure 25: Total Assets of Foreign Banks (US Billion $)
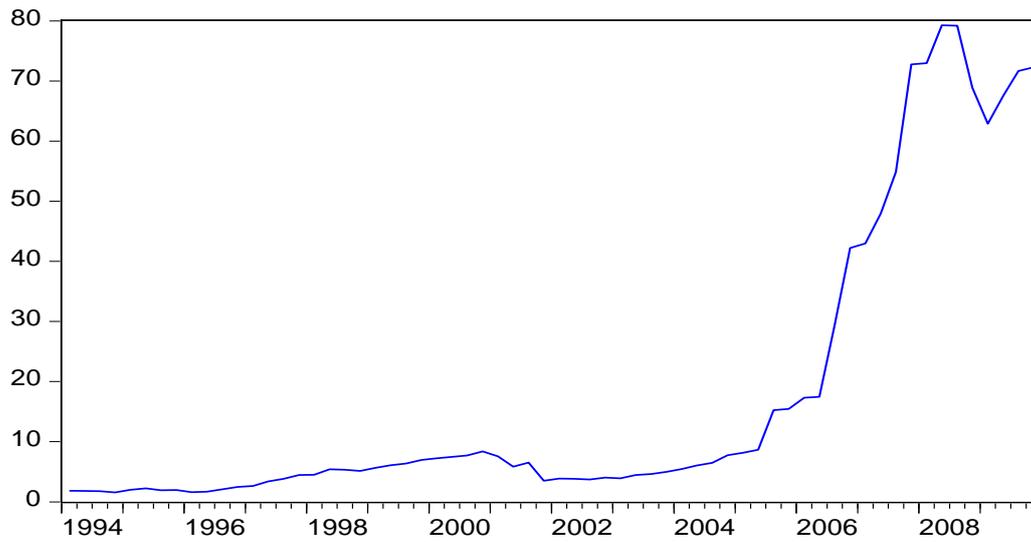
Source: The Bank Association of Turkey

Figure 26: Foreign Direct Investment (US Million $)
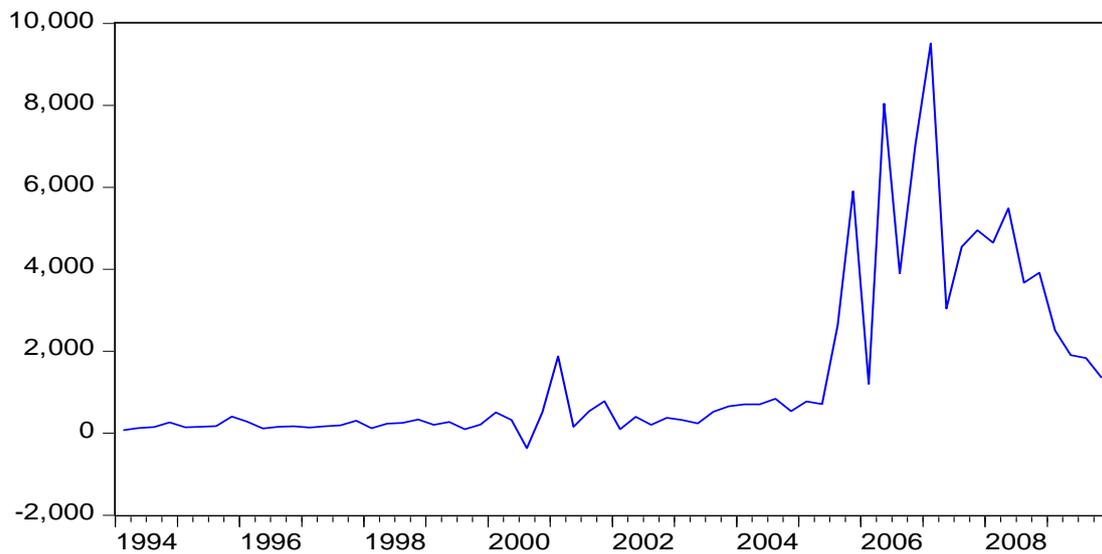
Source: The Central Bank of the Republic of Turkey

Figure 27: Foreign Portfolio Investment (US Million $)
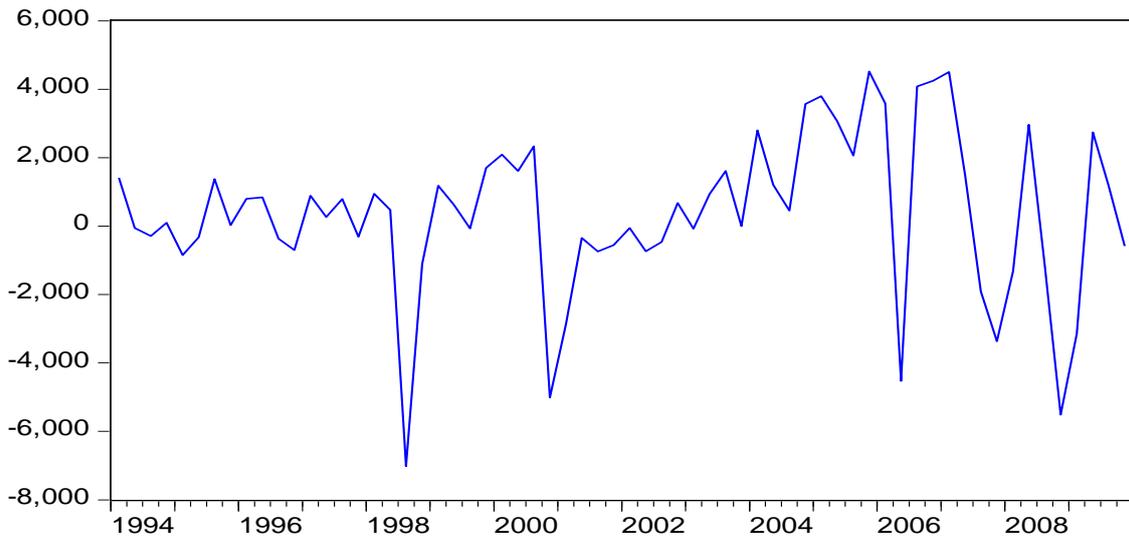
Source: The Central Bank of the Republic of Turkey

6.5 Empirical Modelling and Findings

6.5.1 Unit Root Test

Past papers – Dickey and Fuller (1976 and 1979) - investigate how to test unit root in time series variables. Then, Phillips and Perron (1988) developed another unit root test which is called the PP unit root test. However, the early version of such tests has some weaknesses relative to newly developed unit root tests. Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) tests have low power when the process is stationary but coefficient of y_{t-1} in the regression is close to 1. In addition, when trend adds to the regression in these tests, the power of these tests reduces therefore, including only constant in the regression has more power than the test including both the intercept and trend. Because of these disadvantages of

the PP and ADF tests, newly developed and more efficient techniques – KPSS and ERS point optimal tests – are applied to decide whether the time series variables have unit root or not[79].

Before deciding to perform restricted or unrestricted VAR model, it is pre-request to the test stationarity of time series variables which was detected by KPSS (Kwiatkowski et al., 1992) and ERS– Point Optimal (Elliott et al., 1996) unit root tests[80]. Whereas the ERS point optimal test tests the null hypothesis, a time series variable has a unit root, the KPSS test tests the null hypothesis that the variable is stationary. The KPSS test statistics are calculated as

$$
\jmath_t(q) = T^{-2} \sum_{t=1}^{T} s_t^2 / \sigma^2(q)
$$

Where σ2 (q) is a consistent estimate of the long run variance. The lag truncation parameter is presented by q term. A test of σ^2 (q) = 0 is a test to detect whether a time series variable is stationary or not. T symbol shows the number of observation and s^2 is the residual of a regression (Kwiatkowski et al., 1992).

Another unit root test that I used in this paper is the ERS point optimum. The latter, was developed by Elliott et al. (1996), is based on the quasi-differencing regression which is defined as; d $(v_t|a)$ = d $(z_t|a)$'ɰ (a) +e_t; where d $(v_t|a)$ and d $(z_t|a)$ are quasi- differenced data for v_t and z_t, respectively. Moreover, e_t is the residual term and ɰ (a) is the coefficient to be estimated in the quasi-differencing regression. While the null hypothesis tested is α =1, the alternative hypothesis tested is α= ā where ā = 1-7/T when z_t contains only constant, and ā=1-13.5/T when z_t contains both a constant and a trend. The test statistic in the ERS point

---

[79]The conventional PP and ADF tests are still most popular unit root test in macroeconomic and financial modelling, despite these disadvantages of the conventional PP and ADF tests.
[80] To get further information about these unit root test (see, Kwiatkowski et al., 1992 and Elliott et al., 1996).

optimum to test Ho is defined as; $P_T = (SSR\ (\bar{a}) - (\bar{a})\ SSR\ (1)) / f_o$ where f_o, at frequency zero, is an estimator for the error spectrum.

Table 32: Unit Root Test for the Variables of FBP, FDI and FPI

	ERS Point Optimal [a]		KPSS [b]	
	C	C & T	C	C & T
FBP	81.944	38.850	0.883	0.162
DFBP	0.747***	2.685***	0.230***	0.0773***
FDI	11.037	6.242*	0.889	0.155
DFDI	0.674***	3.461***	0.0442***	0.0447***
FPI	0.799***	2.90***	0.138***	10.487***
DFPI	NA	NA	NA	NA

Note: C and C&T denote constant and constant and trend, respectively. D initial letter denotes the first difference of time series variables. The integration order for the logged GDP is one using ERS Point Optimal and KPSS tests. The finding regarding GDP is not shown in Table 32 because the aim of the paper only investigates relationship among types of capital flows and the variable used as a control variable.
***, **, and * denote statistically significant at 0.01, 0.05, and 0.10 levels, respectively.
[a] including only constant, one-sided test of the Ho that the variable has unit root; critical values are equal to, 4.008, 3.023, and 1.900 at 10%, 5%, and 1% levels, respectively .
[a] including a constant and a trend, one-sided test of the Ho that the variable has unit root; critical values are equal to 6.777, 5.689, and 4.235 at 10%, 5%, and 1% levels, respectively.
[b] including only constant, one-sided test of the Ho that the variable is stationary; critical values are equal to, 0.347, 0.463, and 0.739 at 10%, 5%, and 1% levels, respectively.
[b] including a constant and a trend, one-sided test of the Ho that the variable is stationary; critical values are equal to 0.119, 0.146, and 0.216 at 10%, 5%, and 1% levels, respectively.

Table 32 displays the outcome of the KPSS and ERS point optimal tests at levels and first differences to find out the order of integration for FBP, FDI and FPI variables in Turkey. These tests for the levels and first differences are performed with only constant and with a constant and a trend. For the first variable –FBP-, integration of order zero I (0) is not found because the calculated KPSS test statistics which are 0.883 (the model with an intercept) and

0.162 (the model with trend and intercept) are greater than 5% critical values of 0.463 (the model with an intercept) and 0.146 (the model with trend and intercept), respectively. The result of the ERS point optimum test is in line with the result of the KPSS test in both cases; (1) the model with an intercept and (2) the model with an intercept and a trend. Therefore, the variable has unit root at the integration of zero order. At the first difference, I (1) of FBP, both t-statistics (with only intercept and trend and intercept) are less than critical values at 1% and 5% levels. Thus, the null hypothesis of nonstationarity can be rejected and the variable is integrated of order 1 for all tests. This situation is not different for FDI variable. However, both results of KPSS and ERS point optimal tests also indicate that the level of FPI seems stationary in both cases; (1) the model with an intercept and (2) the model with an intercept and a trend. Therefore, in multivariate VAR models, the first difference of FBP and FDI is used whereas the level of FPI is used.

6.5.2 Block Exogenous Wald Test

The main purpose of this study is to investigate relationship among foreign investment variables which are FBP, FDI and FPI. Therefore, information can be gathered by performing a multivariate vector autoregressive (VAR) model. The VAR model is useful to analyse the behaviour of economic and financial time series. Simply, such a model provides a multivariate framework where for example, change in variable A are related to change in lagged values of the variables of B and C and its own lagged values. Therefore, The VAR model for three time series variables can be written as:

eq.(1);

$$DFBP_t = \beta_1 + \sum_{i=1}^{n} \alpha_1 DFBP_{t-i} + \sum_{i=1}^{n} \mu_1 DFDI_{t-i} + \sum_{i=1}^{n} \nu_1 FPI_{t-i} + \sum_{i=1}^{n} \infty_1 DGDP_{t-i} + \sum_{i=1}^{n} \rho_1 DUM2001_{t-i} + e_t$$

eq.(2);

$$DFDI_t = \beta_2 + \sum_{i=1}^{n} \alpha_2 DFDI_{t-i} + \sum_{i=1}^{n} \mu_2 DFBP_{t-i} + \sum_{i=1}^{n} \nu_2 FPI_{t-i} + \sum_{i=1}^{n} \infty_2 DGDP_{t-i} + \sum_{i=1}^{n} \rho_2 DUM2001_{t-i} + e_t$$

eq.(3);

$$FPI_t = \beta_3 + \sum_{i=1}^{n} \alpha_3 FPI_{t-i} + \sum_{i=1}^{n} \mu_3 DFDI_{t-i} + \sum_{i=1}^{n} \nu_3 DFBP_{t-i} + \sum_{i=1}^{n} \infty_3 DGDP_{t-i} + \sum_{i=1}^{n} \rho_3 DUM2001_{t-i} + e_t$$

Where n denotes the numbers of lag which were determined by the information criterions, β_{1-3}, α_{1-3}, ν_{1-3}, ∞_{1-3} and ρ_{1-3} are parameters for estimation, and e_t and u_t are residual terms. I detect whether there is causal relationship among the variables using the VAR Granger causality technique. For each equation, the chi-square statistic from the block exogenous wald test indicates whether a dependent variable can be treated as exogenous.

I detect whether there is causal relationship among the foreign investment variables using the block exogenous wald test, while controlling DGDP and 2001 financial crisis. The primary criteria to perform VAR Granger causality test is to have stationary variables because if the time series variables have a unit root, the Wald (χ^2) test statistic will be worthless and VAR

stability will not meet. Therefore, in the multivariate VAR models, the first differences of FDI and FBP variables are used whereas the level of FPI variable is used. Therefore, the primary criterion for performing the VAR model is achieved.

This paper employs the block exogeneity wald test to examine the short run causal relationships among the foreign investment variables which are FDI, FBP and FPI after controlling GDP and 2001 financial crisis. The results regarding the short run causal relationships presented in Table 33 are based on the Chi-square and Probabilities. I test whether there is causality from DFDI and FPI to DFBP in the first model, controlling DGDP and periodic dummy (DUM2001) variables. Table 33 mirrors that there is unilateral causality which runs from FPI to DFBP at 5% level, implies that the changes in FPI significantly lead to changes in DFBP in Turkey. I, however, failed to find from the investments of multinational corporations in Turkey to foreign bank penetration. The finding in the first model is interesting because foreign bank penetration in most of the host countries records as a FDI. In other words, to some degree, foreign bank investment involves FDI in a host market. This finding may indicate the lack of relationship among the sub categories of FDI which are service, manufacturing and agriculture FDI. The finding of Brouthers and Brouthers (2003) is in line with my finding. They put forward that the entry mode of manufacturing and service FDI can change independently and these sub-categories of FDI can react differently when transaction cost, risk and trust factors change in a host market.

In the 2nd equation, I investigate whether DFBP Granger cause DFDI and (ii) whether DFPI Granger cause DFDI. The null hypothesis that DFBP does not Granger cause DFDI can be rejected with a $\chi^2 = 12.957$ (p-value = 0.001) at 5% level, indicating that changes in DFBP significantly lead to changes in DFDI in Turkey. This result mirrors how foreign bank

penetration is important for the direct investment of multination enterprises in Turkey. Foreign banks, especially in developing markets, are more willingly to provide credits to foreign companies than domestic banks and to obtain credit for the investment of multinational enterprises in a host markets is vital in order to realise investment. Therefore, it is rational to find causal relationship from DFBP to DFDI. Surprisingly, FPI does not Granger cause DFDI with a $\chi^2 = 1.601$ (p-value = 0.448). I also test whether there is causality from DFDI and DFBP to FPI in the third model. I, however, fail to find any causal relationship in this model, meaning that changes in DFDI and DFBP do not significantly lead to any changes in FPI. This may be because of differences in definition between short-term capital flows and long-term capital flows.

Table 33: Block Exogeneity Wald Test for the Variables of FBP, FDI and FPI

Ind.	Short-run Relationship	
	Dep.	
	DFBP	**Df**
DFDI	[3.737] (0.443)	4
FPI	[10.036] (0.039)**	4
All	[47.270] (0.000)***	16
	DFDI	**Df**
DFBP	[10.513] (0.033)**	4
FPI	[6.438] (0.168)	4
All	[56.056] (0.000)***	16
	FPI	**Df**
DFBP	[3.722] (0.445)	4
DFDI	[3.681 (0.451)	4
All	[13.846] (0.610)	16

*Notes: Dep. and Ind. denote dependent and independent variables, respectively. FBP and FDI time series variables are in first differences. The numbers in [-] and (-) are chi-squares and probabilities, respectively. ***, ** and * denote statistically significant at the 1%, 5% and 10% levels, respectively. Df denotes degree of freedom. The optimal lag for multivariate VAR model is selected by sequential modified LR test statistic, Akaike and Schwarz information criterion. The result of diagnostics tests such as autocorrelation LM, heteroskedasticity tests and the inverse roots of AR characteristic polynomial, are reported in Table 34-35 in the appendix, are found to be satisfactory. Since the aim of this paper is to investigate the relationship between DFDI, FPI and DFBP, the possible causal impacts of control variables on the types of capital slow are not presented in Table 32.*

6.5.3 Variance Decomposition

The VAR based block exogeneity wald test provides information about the causality relationship among the time series variables. However, such test does not provide any information about how significant the causal effects that represented in Table 33 is and how the effect changes over time. Such information is provided by the variance decomposition. The information about each shock (innovation) to the dependent variable is provided by the variance decomposition which is also called "forecast error variance decomposition". Table 34 reports the variance decomposition of each variable over a twelve quarter period. I apply the variance decomposition technique to get information about the percentage of the movement in the endogenous variables that are because of their own innovations, against innovations to the other variables. In other words, the technique is performed to test exogeneity of variables (Pesaran and Shin, 1998). I report only the results in 1st, 6th and 12th quarters. The result from such a technique indicates that; while the DFDI innovations explain 5.689% forecast error variance of DFBP at the 12 quarter horizon, the shock to DFBP is only explained by FPI (0.445%) in model. Meaning that, FDI in Turkey contributed relatively more to FBP but foreign bank penetration seems exogenous. In other words, FDI and FPI have little explanatory power for the evolution of FBP in Turkey.

Table 34: Variance Decomposition

Variance Decomposition of DFBP:			
Period	**DFDI**	**DFBP**	**FPI**
1	0.000	86.354	13.645
6	9.285	45.863	30.065
12	5.689	93.865	0.445

Variance Decomposition of DFDI			
Period	**DFDI**	**DFBP**	**FPI**
1	97.735	2.085	0.179
6	53.150	19.970	9.934
12	50.470	21.937	9.988

Variance Decomposition of FPI:			
Period	**DFDI**	**DFBP**	**DFPI**
1	0.000	0.000	100.000
6	7.708	7.818	80.311
12	9.122	7.611	77.970

Notes: FBP, FDI and GDP time series variables are in first differences. Since the aim of this paper is to investigate the relationship between DFDI, FPI and DFBP, the contribution of DGDP and DUM2001 to the variability of DFDI, FPI and DFBP and the reverse contributions are not presented in Table 34. Standard Errors: Monte Carlo (1000 repetitions)

The shock to DFDI is influenced by DFBP (21.937%) at 12 quarter period, but the shock to DFDI is only accounted for 9.988% of variation in FPI. Therefore, DFBP appears to have higher influence than FPI on DFDI in Turkey. This may be because of similarity in definition between DFBP and DFDI and this is consistent with the finding of the block exogeneity wald test (see Table 33). The final variance decompositions, those for FPI, are also reports in Table 34. The contribution of DFDI to FPI variability ranges between 0.000% and 9.122% throughout 12 quarters while the portion of DFBP shock in the variance of FPI in 1 and 12 quarters are 0.000% and 7.611%, respectively, indicating that the effect of DFDI and DFBP on FPI in the long run is larger than that in the short run. Thus, foreign bank penetration appears to be more important relative to FPI on DFDI in Turkey.

6.6 Conclusion

Using a multivariate VAR approach and block exogeneity wald and variance decomposition tests, the paper investigated the short run dynamic relations between FBP, FDI and FPI, after controlling GDP and 2001 financial crisis. The time series variables are based on quarterly data from 1994Q1 to 2009Q4. To detect whether the time series variables have unit root or not, I perform KPSS and ERS point optimal tests. The findings from such tests indicate that FBP and FDI are integrated with order one whereas FPI is integrated of order zero.

The results regarding the block exogeneity wald test indicate that there is bilateral causality at 5% level runs from FPI to DFBP, implying that changes in short-term investments of foreign investors significantly lead to changes in the assets of foreign banks in Turkey. Moreover, another causal relationship is detected from DFBP to DFDI, implying that changes in the assets of foreign banks significantly lead to changes in direct investments of multinational enterprises in Turkey. This is because the lion share of DFDI in the banking sector involves foreign bank assets in Turkey.

To obtain information about the each shock (innovation) to the dependent variable, the variance decomposition technique was employed. The result from such technique indicated that; direct investments of multinational enterprises in Turkey contributed relatively more to foreign bank penetration but such variable seems most exogenous within three foreign investment variables. Therefore, DFDI and FPI have little explanatory power for the evolution of DFBP in Turkey. The finding of variance decomposition also shows that in Turkey the influence of DFBP to the variability of DFDI is more than that of FPI. Moreover,

my finding indicated that the contribution of DFDI to FPI variability ranges between 0.000% and 9.122% throughout 12 quarter periods whilst the contribution of DFBP to FPI variability ranges between 0.000% and 7.611%.

6.7 References

[1] Albuquerque, R. (2003). "The Composition of International Capital Flows: Risk Sharing Through Foreign Direct Investment." <u>Journal of International Economics</u> **61**: 353–383.

[2] Altınkemer, M. (1998). Capital Inflows and Central Bank's Policy Response. R. Department. Ankara, Central Bank of the Republic of Turkey.

[3] Aqeel, A. and M. Nishat (2004)."The Determinants of Foreign Direct Investment in Pakistan." <u>The Pakistan Development Review</u> **43**(4): 651-664.

[4] Asiedu, E. (2006). "Foreign Direct Investment in Africa: The Role of Government Policy, Institutions and Political Instability." <u>World Economy</u> **29**(1): 63-77.

[5] Balkan, E., F. G. Bicer, et al. (2002). Patterns of Financial Capital Flows and Accumulation in the Post-1990 Turkish Economy. <u>the IDEAS session at METU International Conference on Economics</u>. Ankara.

[6] Bandera, V. N. and J. T. White (1968)."U.S. Direct Investments and Domestic Markets in Europe." <u>Economia Internazionale</u> **21**: 117–133.

[7] Barrell, R. and N. Pain (1996)."Domestic Institution, Agglomeration and Foreign Direct Investment in Europe." <u>European Economic Review</u> **43**: 29-45.

[8] Bekaert, G. (1995). "Market Integration and Investment Barriers in Emerging Equity Markets."The World Bank Economic Review **9**(1): 75-107.

[9] Brouthers, K. D. and L. E. Brouthers (2003). "Why Service and Manufacturing Entry Mode Choices Differ: The Influence of Transaction Cost Factors, Risk and Trust." Journal of Management Studies **40**(5): 1179–1204.

[10] Calvo, G., L. Leiderman, et al. (1993). "Capital Inflows and the Real Exchange Rate Appreciation in Latin America: The Role of External Factors." IMF Staff Papers **40**(1): 108-151.

[11] Chuhan P., S. Claessens, et al. (1993). "Equity and Bond Flows to Asia and Latin America." The World Bank, Policy Research Working Papers **No. 1160**.

[12] Claessens, S., M. Dooley, et al. (1995). "Portfolio Capital Flows: Hot or Cool?" The World Bank Economic Review **9**(1): 153-174.

[13] Claessens, S., D. P. Michael, et al. (1995). "Portfolio Capital Flows: Hot or Cold?" The World Bank Economic Review **9**(1): 153-174.

[14] Clarke, R. (1996). "Equilibrium Interest Rates and Financial Liberalisation in Developing Countries."Journal of Development Studies **32**(3): 391-413.

[15] Cuddington, J. T. (1987). "Capital Flight "European Economic Review **31**: 382-388.

[16] Çulha, A. (2006). "A Structural VAR Analysis of the Determinants of Capital Flows into Turkey." <u>BRT Research and Monetary Policy Department Working Papers</u> **No: 06/05**.

[17] Erinç, Y. (2003). <u>Küresellesme Sürecinde Türkiye Ekonomisi Bölüsüm, Birikim ve Büyüme</u>. Istanbul, Iletisim Yayinlari.

[18] Esperanca, J. P. and M. A. Gulamhussen (2001). "(Re)Testing the 'Follow the Customer' Hypothesis in Multinational Bank Expansion." <u>Journal of Multinational Financial Management</u> **11**(3): 281-293.

[19] Feldstein, M. and C. Horioka (1980). "Domestic Saving and International Capital Flows." <u>Economic Journal</u> **90**: 314-329.

[20] Fernandez-Arias, E. (1996). "The New Wave of Private Capital Inflows: Push or Pull? ."<u>Journal of Development Economics</u> **48**(2): 389-418.

[21] Ferrucci, G., V. Herzberg, et al. (2004). "Understanding Capital Flows to Emerging Market Economies."<u>BoE Financial Stability Review</u>.

[22] Froot, K. and J. Stein (1991). "Exchange Rates and Foreign Direct Investment: An Imperfect Markets Approach." <u>Quarterly Journal of Economics</u> **56**: 1191-1219.

[23]Goldberg, L.G. and D. Johnson (1990). "The Determinants of US Banking Activity Abroad." <u>Journal of International Money and Finance</u> **9**: 123-137.

[24] Goldstein, M., D. J. Mathieson, et al. (1991)."Determinants and Systemic Consequences of International Capital Flows."IMF Research Department, Determinants and Systemic Consequences of International Capital Flows.Occasional Paper 77. Washington, D.C.: International Monetary Fund.

[25] Grabel, I. (1995). "Assessing the Impact of Financial Liberalisation on Stock Market Volatility in Selected Developing Countries."Journal of Development Studies 31(6): 903-917.

[26] Grosse, R. and L. Goldberg (1991). "Foreign Activity in the United States: An Analysis by Country of Origin." Journal of Banking and Finance 15(6): 1092-1112.

[27] Grosse, R. and L. J. Trevino (1996). "Foreign Direct Investment in the United States: An Analysis by Country of Origin." Journal of International Business Studies 27: 139-155.

[28] International Monetary Fund (2011). "Recent Experiences in Managing Capital Inflows--Cross-Cutting Themes and Possible Policy Framework." Washington, DC.

[29] Kim, S., S. H. Kim., et al. (2004). "Macroeconomic Effects of Capital Account Liberalization: The Case of Korea." Review of Development Economics 8(4).

[30] Kwiatkowski, D., P.Phillips, et al. (1992). "Testing the Null Hypothesis of Stationary against the Alternative of a Unit Root: How Sure are we that Economic Time Series have a Unit Root?" Journal of Econometrics 54: 159-178.

[31] Levchenko, A. and P. Mauro (2007). "Do Some Forms of Financial Flows Help Protect from Sudden Stops?" World Bank Economic Review **21**: 389–411.

[32] Lipsey, R. E. (1999). "The Role of Foreign Direct Investment in International Capital Flows."NBER Working Paper**7094**: Cambridge, MA.

[33] Lipsey, R. E. (2001). "Foreign Direct Investors in Three Financial Crises "NBER Working Paper**8084**: Cambridge, MA.

[34] Miller, S. R. and A. Parkhe (1998). "Patterns of Expansion of U.S. Banks' Foreign Operations." Journal of International Business Studies **29**(2): 359-390.

[35] Mlambo, K. (2006). "Reviving Foreign Direct Investments in Southern Africa: Constraints and Policies."African Development Review **17**(3): 552-579.

[36] Mody, A., M. P. Taylor, et al. (2001). "Modeling Economic Fundamentals for Forecasting Capital Flows to Emerging Markets." International Journal of Finance and Economics**6**(3): 201-216.

[37] Nigh, D., Cho, K. R. and S. Krishnan (1986). "The Role of Location-Related Factors in U.S. Banking Involvement Abroad: An Empirical Examination." Journal of International Business Studies **17**: 59-72.

[38] Pierre-Richard, A. (1998). "The Surge in Capital Flows: Analysis of 'Pull' and 'Push' Factors." <u>International Journal of Finance and Economics</u> **3**: 39-57.

[39] Reinhart, C., G. Calvo, et al. (1996). "Inflows of Capital to Developing Countries in the 1990s."<u>Journal of Economic Perspectives</u> **10**(2): 123-139.

[40] Ruffin, R. and F. Rassekh (1986)."The Role of Foreign Direct Investment in US Capital Outcomes."<u>American Economic Review</u>: 1126-1130.

[41] Schmitz, A. and J. Bieri (1972)."EEC Tariffs and U. S. Direct Investment."<u>European Economic Review</u> **3**: 259 – 270.

[42] Taylor, M. P. and L. Sarno (1999). "Capital Flows to Developing Countries: Long and Short-Term Determinants." <u>World Bank Economic Review</u>**11**(3): 451-470.

[43] Tesar, L. and I. M. Werner (1995)."U.S. Equity Investment in Emerging Stock Markets."<u>The World Bank Economic Review</u> **9**(1): 109-129.

[44] Thomas, J. and T. Worral 1994. "Foreign Direct Investment and the Risk of Expropriation" <u>Review of Economics Studies</u> **61**: 81–108.

[45] Trevino, L., J. J. D. Daniels, et al. (2002). "Market Reform and Foreign Direct Investment in Latin America: Evidence from an Error Correction Model." <u>International Trade Journal </u>**16**(4): 367-392.

[46] Veugelers, R. (1991). "Locational Determinants and Rankings of Host Countries: An Empirical Assessment." <u>Kyklos</u> **44**(3): 363-382.

[47] Wei, S. (2001). "Domestic Crony Capitalism and International Fickle Capital: Is There a Connection?" <u>International Finance</u> **4**(1): 15-45.

[48] Wheeler, D. and A. Mody (1992). "International Investment Location Decisions: the Case of U.S. Firms." <u>Journal of International Economics</u> **33**: 57-76.

[49] Yorukoglu, M. and M. Kilinc (2012). "Globalisation of the Interaction between Fiscal and Monetary Policy." <u>Fiscal Policy, Public Debt and Monetary Policy in Emerging Market Economies</u> **67**: 335-350.

[50] Zhang, H. K. (2008). "What Attracts Foreign Multinational Corporations to China?" <u>Contemporary Economic Policy</u> **19**(3): 336-346.

6.8 Appendix

**Figure 28: Inverse Roots of AR Characteristic Polynomial**
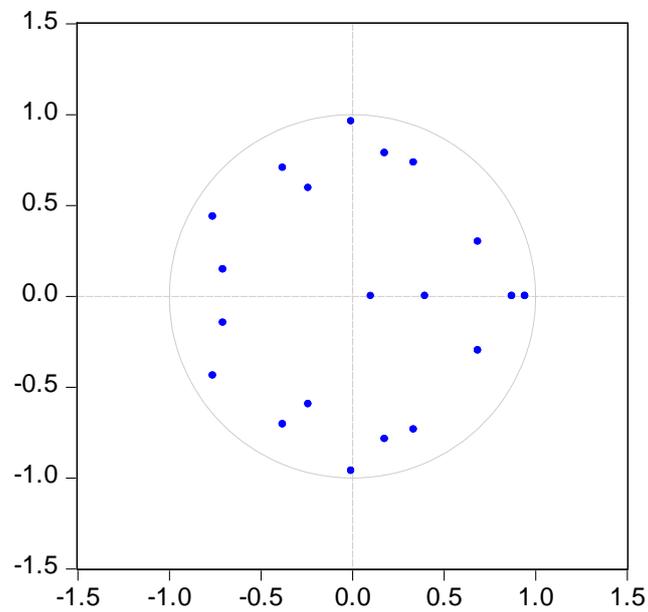
Table 35: Autocorrelation LM Tests

Null Hypothesis: no serial correlation at lag order h		
Lags	LM-Stat	Prob
4	28.392	0.290

Probs from chi-square with 9 df.

Table 36: VAR Residual Heteroskedasticity Tests

No cross terms (only levels and squares)		
Chi-sq	Prob	df
515.335	0.771	540

Note: Df denotes degree of freedom.

6.8.1 Data Appendix

This appendix describes the data source used in my empirical models. The time series variables used in the models are shown below;

6.8.1.1 FBP

» **Definition:** Total assets held by foreign banks in the banking sector. Holding 50% share acquisition by a foreign bank or foreign investor in a host country is accepted as a minimum requirement to have an important influence on the management of acquired bank in Turkey. In other words, acquiring 50% or more shares of domestic bank are recorded as a foreign bank in most of the countries.

» **Source:** The Banks Association of Turkey (2011), the data are available at 20.12.2010

https://www.tbb.org.tr/en/banks-and-banking-sector-information/data-query-system/financial-tables/41

» **Measure:** In this paper, I accepted that foreign bank penetration measured as the total value of foreign bank assets. Because the total value of foreign bank assets holds the lion shares of banking FDI. As I did, Grosse and Goldberg (1991) and Esperanca and Gulamhussen (2001) are used aggregate foreign bank assets while examining the determinants of foreign bank penetration. The variable was expressed in its logarithmic transformation.

» **Period:** The FBP variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

6.8.1.2 FDI

» **Definition:** Foreign direct investment is one of the types of international investment. Such investment arises when a foreign investor acquires 10% or more shares of domestic company and obtains, moreover, managerial control on domestic company. The variable was also expressed in its logarithmic transformation.

» **Source:** the Central Bank of the Republic of Turkey (2012), the data was available at 10.11.2010

http://evds.tcmb.gov.tr/yeni/cbt-uk.html

» **Measure:** The FDI variable was expressed in its logarithmic transformation.

» **Period:** The FDI variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

6.8.1.3 FPI

» **Definition:** Foreign portfolio investment arises when a foreign investor does not have any managerial control on domestic company in a host country.

» **Source:** the Central Bank of the Republic of Turkey (2012), the data was available at 10.11.2010

http://evds.tcmb.gov.tr/yeni/cbt-uk.html

» **Measure:** The raw data of FPI variable were used in the multivariate VAR model to investigate relationship among the time series variables because some observations for the variable are negative.

» Period: The ERR variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

6.8.1.4 GDP

» Definition: Nominal GDP is used as a control variable since it is believed that GDP is an important determinant of FDI, FBP and FPI. The findings of Buch (2000), Brealey and Kaplanis (1996) and Yamori (1996) Herrero and Peria (2005) underlined that GDP in host countries seems most important factor that affects the location decision of multinational banks. Similar to these findings, the study of Luca and Spatafora (2012) implies that rising GDP is associated with higher capital flows in developing countries.

» Source: The Central Bank of the Republic of Turkey (2011), the data was available at 05.08.2013

http://evds.tcmb.gov.tr/yeni/cbt-uk.html

» Measure: The GDP variable was expressed in its logarithmic transformation.

» Period: The GDP variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.

6.8.1.5 DUM2001

» Definition: DUM2001 is a dummy variable and used as a control variable since it is believed that financial crisis in 2001 led to significant changes in the Turkish banking sector.

» Source: The dummy variable is generated by the author.

» Measure: The raw data were used.

» Period: The DUM2001 variable used in the empirical tests of this paper consists of the quarterly for the period 1994Q1 to 2009Q4 which includes 64 observations.