

NEAR EAST UNIVERSITY

Faculty of Economics and Administrative Sciences

Department of Banking and Finance

Bank 410 (Seminar on Banking) Graduation Project

Topic: Determinants of Foreign Direct Investment In Turkey

Submitted by: Nilufer Kardas

Student no : 20040530

Submitted to: Nil Gunsel

July 2008

Nicosia



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ABSTRACT

The aim of this study is to research the determinants of Foreign Direct Investment (FDI) inflows to Turkey. Using OLS (Ordinary Least Square) technique for Turkey's data of the period from 1975 to 2006. This study aims to determine the variables that impacts on FDI inflows. So, 5 variables of Gross Domestic Product (GDP), GDP deflator (INFLATION), Growth, Exchange rate average, Exports of goods are used in the experiential analysis in terms of explaining the FDI inflows. It is suggested in the result that the factors leading FDI have a distinguishing impact on FDI.

I have constructed 3 models to prevent the multicollinearity problem. In model two changes, the Exchange rate average it has positive value as it was expected at the beginning. This variable affected directly the FDI value. In model three the Exports of goods is the variable with a positive effect. In other words, the result of the regression analysis, which is covering a period of 31 years, is that the three variables are closely associated with FDI.

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Chapter one

Introduction

Foreign Direct Investment (FDI) has grown at a increasing rate since the early 1980s and the world market for it become more competitive. Developing countries are becoming increasingly attractive investment destinations. Turkey is one the competitors in this league and is offering investors a range of assets.

1.1 Aim of This Study

This study tries to find out the effect that some macroeconomic variables have over FDI of Turkey.FDI is very important even that directly affects the capital inflow in a developing country.In this paper we used the regression model, and OLS technique for the datas, which are taken between the years 1975- 2006.

1.2 Structure of the Study

My paper is composed of 6 chapters. On chapter one is explained briefly what the topic is, and method issued.

Chapter 2 In this chapter is the literature review, including all the articles, that have been pulished, related to Foreign Direct Investment (FDI).

Chapter 3 Here is explained the definition of FDI, the polices and regulations that Turkey has applied. Another point explained here is the development of FDI during years in Turkey.

In chapter 4 is explained the place and time where the datas are taken from, and the variable that included in the regression model.

Chapter 5 This includes the methodology that helps to make the analyze of the what result is found, and also the result of the regression, like significance of the independent variables.

Chapter 6 This is a summary, and a short conclusion, to show if the aim is reached.

Chapter two

- 2.Literature Review
- 2.1 Theory Articles
- 2.1.1 Benefits of FDI For Developing Countries and The Case of TURKEY(Mehmet Baykal)

The aim of this paper is to give brief information about FDI and its importance to developing countries, explain the general benefits of FDI.Turkey's FDI and its efforts to attract more FDI, suggest about how to benefit from FDI.In addition, laws and regulations in the laws which Turkey put into practice in 2003 for foreign investors has been mentioned in this article.

In conclusion, it has been found out that there is a a beneficial impact of FDI on developing countries.

2.1.2 Development and Determinants of Foreign Direct Investment in TURKEY:A Comparative Analysis with The EU Countries (Murat Karaege)

The main aim of this study is to search the nature of FDI inflows into the economy of Turkey, to examine its development and various economic determinants, which direct its levels and performances. This study has been practised in 2006.

In the result of the study, it has been indicated that even though the FDI has enormously increased in 2004 and 2005, the increase is mostly due to the immense privatization program followed by the current government and improvement of the relations with the European Union.

2.1.3 A Comparative Analysis of Inward and Outward FDI in TURKEY (Asim Erkilek)

This article investigates why, compared to many developing countries that have attracted and benefited from significant inflows of foreign direct investment. Turkey is conspicuous as a country that has not done so, despite its increasing openness to international trade. This study has been practised in 2003.

In conclusion, recent institutional reforms and increasing economic and political stability can make Turkey an important host country for foreign direct investment in the future.

2.2 Articles with Regression

2.2.1 Capital Account Liberalization and FDI (Ilan Noy& Tam B.Vu)

This study examines the effect of capital account policies on FDI inflows. This study has been practised for 1984-2000 by using an annual panel dataset of 83 developing and developed countries. FDI inflows, Capital, Financial Risk Rating, Political Risk Rating, Exports, GDP growth volatility, Interest Rate Control, and Inflation are the variables used in this study with fixed effect and OLS technique.

In short, this study concludes that liberalizing the capital account is not sufficent to generate increases in inflows unless it is accomplained by a lower level of corruption or a decrease in political risk.

2.2.2 Host Country Reforms and FDI Inflows: How much different do they make? (Victor M. Gastanaga, Jefferey B. Nugent and Bistra Pashamova) (1998)

This paper investigates the impact of various policies on foreign direct investment flows from the perspective of the "electic theory" of international investment, and hence the advantages of foreign ownership, host country location and internalization. Total Inward FDI flows, Corruption, Rate of growth of real GDP, Black Market Premium, Degree of Openness to capital flows in general, Corporate Tax Rate, Tariff Rates, Nationalization Risk, Contract Enforcement, Bureaucratic Delay are used in this study.

In conclusion the results demonstrate the relevance and importance for FDI flows of many of the policy/institutional variables under study.

2.2.3 Some New Evidence on Determinants of FDI in Developing Countries (Harinder Singh & Kwang W.Jun)(1995)

This study expands on the earlier studies of the determinants of FDI by emprically analzing various factors — including political risk, business conditions, and macroeconmics variables- that influence direct investment flows to developing countries. In addition to export orientation is the strongest variable for explaining why a country attracts FDI(Singh, H.&Jun, K.W.). A pooled model of developing countries is used in the study and three groups of hypothesis-"that political risk matters", "that business conditions matter", "that macro economic variables matter"- are tested with this model.

In the conclusion of first hypothesis, it is indicated that a qualitative index of political risk is a significant determinant of FDI flows for countries that have historically attracted high FDI flows. In the conclusion of the second hypothesis, it is indicated that a general qualitative index of business operation conditions is an important determinant of FDI countries that receive high flows. In the the conclusion of the third hypothesis, it is indicated that exports especially, manufacturing exports, are a significant determinant of FDI flows for countries in which FDI is high.

2.2.4 The Determinants of Foreign Direct Investment: Emprical Evidence from Turkey (Turgut Türsoy & Husam Rjoub)

The goal of this study is to search the determinants of Foreign Direct Investment inflows Turkey. It has been practised from 1976 to 2005. OLS technique has been used in this study with the variables such as Gross National Product (GNP), Growth, Trade, Inflation, New Government Establishment (dummy1) and Crises Period (dummy 2).

It has been found in the study that there is a significant relationship between GNI, Political Stability and Trade with FDI but not with the other variables.

2.3 Summarization of literature review

Table 2.3.1 Articles with Regression

Name	Authors	Methods	Aim	Variables used
tal Account ealization and FDI	Ilan Noy&Tom B.Vu(2007)	Fixed effect and OLS Technique	It examines the effect of capital account policies on FDI inflows.	FDI inflows,Capital,Financial Risk Rating,Political Risk Rating,Exports,GDP growth,GDP per capita,GDP growth volatility,Interest Rate Control,Inflation.
Country Reforms FDI Inflows:How ch different do they e?	Victor M.Gastanaga, Jefferey B. Nugent and Bistra Pashamova(1998)	Electic Theory	It investigates the impact of various policies on FDI.	Total Inward FDI flows, Corruption,Rate of growth of real GDP,Black Market Premium,Degree of Openness to Capital Flows in general,Degree of Openness to FDI inflows in particular,Corporate Tax Rate,Tariff Rates,Nationalization Risk,Contract Enforcement, Bureaucratic Delay.
New Evidence on erminants of FDI in eloping Countries	Harinder Singh& Kwang W. Jun(1995)	Pooled Model	This paper analysis three emprical issues related to the determinants of FDI in developing countries.	Real FDI/GDP,GDP per capita, Annual GDP Growth,Real Earning Per Worker,Real Export/GDP,Manufacturing Exports/GDP,Primary Exports/GDP,Political Risk Index,Real Exchange Rate, Average Industrial production Index,Total Long-term Debt Work days lost,Operation Risk Index,Taxes on International Trade and Transaction.
Determinants of egn Direct estment:Emprical ence from Turkey	Turgut Türsoy & Husam Rjoub(2005)	OLS Technique	The goal of this study is to search the determinants of FDI Inflows Turkey.	GNI,Growth,Trade,GDP deflator(inflation),New government establishment,Crises periods.

Table 2.3.2 Theory Articles

Study Name	Authors	Aim	Results
Benefits of FDI for Developing Countries and the Case of Turkey	Mehmet Baykal(2003)	The aim of this paper is to give brief information about FDI and importance to developing countries.	It has been found out that there is a beneficial impact of FDI on developing countries.FDI creates jobs,increases exports etc
Development and Determinants of FDI in Turkey:A comparative analysis with the EU countries	Murat Karaege(2006)	The main aim this study is to search the nature of FDI inflows into the economy of Turkey.	It has been indicated that even though the FDI has enermously increased in 2004 and 2005,the increase is mostly due to the immense privatization program.
A comparative Analysis of Inward and Outward FDI in Turkey	Asim Erkilek(2003)	This article investigates why, compared to many developing countries that have attracted and benefited from significant inflows of FDI.	Recent institutional reforms and increasing economic and political stability can make Turkey an important host country for FDI in the future.

Chapter three

3. Foreign Direct Investment

3.1 Definition of Foreign Direct Investment

Definitions of FDI are contained in the Balance of Payments Manual: Fifth Edition (BPM5) (Washington, D.C., International Monetary Fund, 1993) and the Detailed Benchmark Definition of Foreign Direct Investment: Third Edition (BD3) (Paris, Organisation for Economic Co-operation and Development, 1996).

According to the BPM5, FDI refers to an investment made to acquire lasting interest in enterprises operating outside of the economy of the investor. Further, in cases of FDI, the investor's purpose is to gain an effective voice in the management of the enterprise. The foreign entity or group of associated entities that makes the investment is termed the "direct investor". The unincorporated or incorporated enterprise-a branch or subsidiary, respectively, in which direct investment is made-is referred to as a "direct investment enterprise". Some degree of equity ownership is almost always considered to be associated with an effective voice in the management of an enterprise; the BPM5 suggests a threshold of 10 per cent of equity ownership to qualify an investor as a foreign direct investor.

Once a direct investment enterprise has been identified, it is necessary to define which capital flows between the enterprise and entities in other economies should be classified as FDI. Since the main feature of FDI is taken to be the lasting interest of a direct investor in an enterprise, only capital that is provided by the direct investor either directly or through other enterprises related to the investor should be classified as FDI. The forms of investment by the direct investor which are classified as FDI are equity capital, the reinvestment of earnings and the provision of long-term and short-term intra-company loans (between parent and affiliate enterprises).

According to the BD3 of the OECD, a direct investment enterprise is an incorporated or unincorporated enterprise in which a single foreign investor either owns 10 per cent or more of the ordinary shares or voting power of an enterprise (unless it can be proven that the 10 per cent ownership does not allow the investor an effective voice in the management) or owns less than 10 per cent of the ordinary

shares or voting power of an enterprise, yet still maintains an effective voice in management. An effective voice in management only implies that direct investors are able to influence the management of an enterprise and does not imply that they have absolute control. The most important characteristic of FDI, which distinguishes it from foreign portfolio investment, is that it is undertaken with the intention of exercising control over an enterprise.

3.2 Turkey's Efforts to Attract More Foreign Direct Investment (FDI)

Early 1980's the Turkish government has quickly liberalized on its own economy, improved conditions for foreign investment by reducing bureaucratic barriers and supported intensive privatization program. Turkey prepared new program for attracting private foreign investment. The most important role of FDI was to help economic development and set up to balance of the payment situation. Foreign Investment Director, was established in order to the administrative procedures and handle investment applications more quickly. Turkey Government established Free Trade Zone in 1985 and 1986. Turkey removed restriction on foreign equity participation and ending minimum export requirement. In the other hand, Turkey Government improve infrastructure conditions. As a result, through the help of the European Union (EU), Turkey has become more attractive location for foreign companies.

In 2003, one more law issued, and these laws guaranteed national treatment and comprehensive investors rights. It was the important step for Turkey. All of the companies established with a foreign capital contribution and under the rules of the Turkish Commercial Code (existing and newly established foreign companies) are regarded as a Turkish company. Therefore, equal treatment both in rights and responsibilities as stated in the Constitution and other laws is applicable to all such companies (including national treatment, a guarantee against expropriation without compensation, transfer of proceeds, access to real estate and to expatriate personnel, and international arbitration or any other means of dispute settlement).

Entry conditions are the same as for comparable local Turkish companies. There is no need to minimum amount of capital. It no longer brings a minimum of \$50,000 in

share capital. .Also, any form of company included in the Turkish Commercial Code is acceptable. It is no longer obligatory establish either a limited liability company or joint stock company.

Turkey Government's new law give equal right to own or use land foreign direct investors. If Turkey Government tries to explain another way, it can be proved this non-discrimination statement. However, the principle of reciprocity is still valid for foreign legal and foreign real persons.

Pre-permits issued by General Directorate of Foreign Investment are abolished. These baranches can be established under rules of Turkish Commercial Code with the permit of Ministry of Industry and Trade.

All of the companies with foreign capital established under Law No. 6224(dated 18 January 1954) are subject to the new Law, with their previously granted rights grand fathered. Therefore, they will no longer require any approvals from GDFI, though they will now have to send yearly information forms (just like newly-established foreign companies) based on procedures to be determined by new regulations.

3.3 Foreign Direct Investment in Turkey

FDI is used as a benefit everyday by Turkish people. Most of the cars they drive, many of the medicines they need and a wide range of telecommunications, information technology, tourism and other services come from Turkish based firms with foreign ownership. Overseas are preferred for investments by Turkey in order to increase their financial viability extend their markets and strengthen their Turkish operations as part of global business network. However, many in the community are not fully aware of the benefits of foreign direct investment (FDI) and its importance to the Turkish economy.

Foreign direct investment (FDI) creating jobs, increasing exports, improving consumer welfare through reduced costs, wider choice and increased quality gives Turkish business access to an improved technological and knowledge base. Outward FDI provides access to a greater number of distribution channels and networks in international markets for Turkish companies.

The political and macroeconomic stability maintained in Turkey and the efforts given for reform process and the improvement of the investment environment, annual FDI inflows, which were approximately USD 1.4 billion on the average in 1995-2004 period, have climbed to USD 10 billion in 2005, USD 20 billion in 2006 and USD 22 billion in 2007. While Turkey was in 53rd place in 2003, in the ranking of countries that host largest FDI inflows, it has climbed to 37th place in 2004, to 22nd place in 2005 and to 16th place in 2006. We expect that Turkey will be among the top 20 countries in 2007 as the preliminary data indicates.

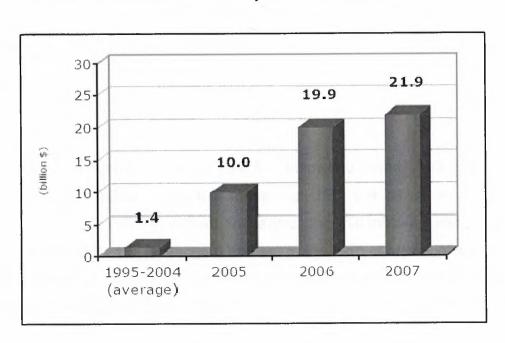


Chart 3.3.1 :FDI Inflows in Turkey Between 1995 to 2007

Source: Central Bank of Turkey

Having ranked within the top 20 FDI inflow destinations for the first time in 2006, the share of Turkey has also increased from 0.2-0.4% level to 1.5% in total global FDI movements. Having increased its share from 1% to 5% in FDI inflows to developing countries, Turkey, ranks 5th among developing countries, in FDI inflows.

Table 3.3.2

Share of Turkey in Global Direct Investment Flows					
Year	Inflow (Bn \$)	Share in world total (%)	Share in inflows to developing countries (%)	Ranking	
2006	20.1	1,5	5,3	16	
2005	9.8	1.0	3.1	23	
2004	2.9	0.4	1.0	38	
2003	1.8	0,3	1.0	53	
2002	1.1	0.2	0.7	53	
2001	3.4	0.4	1.6	38	
2000	1.0	0.1	0.4	53	
1990s	0.8	0.2	0.7		
1980s	0.2	0,2	0.8	-	
1970s	0.1	0.2	0.9	-	

Source: UNCTAD

In 2007, out of the USD 21.9 billion total FDI inflows to Turkey, USD 19 billion was net foreign capital inflows, and the remaining USD 2.9 billion was real estate purchases of persons residing abroad. The largest five FDI inflows constitute USD 9.5 billion of the total USD 19 billion figure and are in the form of M&As. When real estate purchases are not taken into consideration, M&As transactions constitute 90%, and greenfield and enlargement investments constitute approximately 10% of total FDI inflows.

Financial services is distinguish as the sector enjoying the largest share from FDI inflows 60%, in 2007. Manufacturing industry, with a 22% share, ranks second in capital inflows. Within the FDI inflows of the last five years, it is worth to note that more than 80% of FDI inflows have targeted the services sectors; and the major subsectors of the manufacturing sector, which benefits from 19% of the total inflows, are chemicals, food-beverages-tobacco, and non-metallic minerals.

Table 3.3.3

The Se	ctoral Co	ompositi	on of ID	I Inflow	s to Turkey	1	
Sectors (Million USD)	2003	2004	2005	2006	2007	2003- 2007	Share in Total (%)
Agriculture,							
forestry, fishing	1	6	7	6	5	25	0.1
Industry	548	358	832	2,102	5,095	8,935	18.8
Mining and quarrying	14	75	40	122	341	592	1.2
Manufacturing	448	214	788	1,868	4,199	7,517	15.9
Chemicals	9	39	174	602	1,103	1,927	4.:
Food, beverages,							
tobacco	249	78	68	609	758	1,762	3.7
Non-metallic minerals	0	1	53	125	766	945	2.0
Electricity, gas and						-	
water supply	86	69	4	112	555	826	1.7
Services	196	927	7,699	15,537	14,090	38,449	81.
Financial sector	51	69	4,018	6,956	11,409	22,503	47
Transport, warehousing and					***		
telecommunications	2	639	3,285	6,700	1,119	11,745	24.
Wholesale and retail trade	92	103	68	1,167	181	1,611	3.
Total Inflow	745	1,291	8,538	17,645	19,190	47,409	10
Stock (Cumulative)	33,537	38,522	71,296	88,246	137,197*	99	

Source:Central Bank of Turkey

It can be seen that the FDI stock in Turkey has amounted to USD 137 billion as of end of the third quarter of 2007.

Table 3.3.4

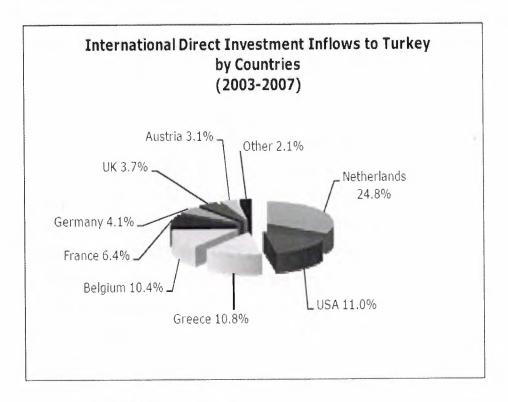
3006	IDI Inflows	Share
2000	(million USD)	(%)
Netherlands	5,069	28.7
Belgium	3,435	19.5
Greece	2,791	15.8
UAE	1,625	9.2
Austria	1,108	6.3
USA	848	4.8
UK	628	3,6
France	439	2.5
Germany	357	2.0
Luxembourg	251	1.4
Other	1094	15.4
Total	17,645	100
	Belgium Greece UAE Austria USA UK France Germany Luxembourg Other	2006 (million USD) Netherlands 5,069 Belgium 3,435 Greece 2,791 UAE 1,625 Austria 1,108 USA 848 UK 628 France 439 Germany 357 Luxembourg 251 Other 1094

		IDI Inflows	Share
	2007	(million USD)	(%)
1	Netherlands	5,682	29.6
2	USA	4,206	21.9
3	Greece	2,263	11.8
4	Germany	1,004	5.2
5	Portugal	701	3.7
6	UK	688	3.6
7	Spain	588	3.1
8	Luxembourg	586	3.1
9	Austria	369	1.9
10	France	317	1.7
	Other	2,786	14.5
	Total	19,190	100

Source: Central Bank of Turkey

In the breakdown of 2007 FDI inflows by country of origin, the top 3 countries with share higher than 10% are; Holland, at the top of the list – as in previous years – mainly due to attributable to the acquisition of Oyakbank by ING Bank, and the acquisition of 80% shareholding in Garanti Sigorta by Eureko.USA is in 2nd place, due to the ongoing payments of the Citibank-Akbank agreement; and Greece is in 3rd place, due to the ongoing payments of the NBG-Finansbank agreement. A review of the major investor countries in Turkey during the last 5 year period shows that Holland, USA, Greece and Belgium are the top 4 countries with shares higher than 10%.

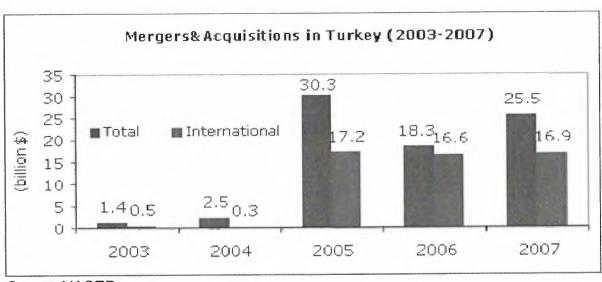
Figure:3.3.5



Source: Central Bank of Turkey

In 2007, international investors have been parties to half of approximately 180 merger and acquisition transaction in Turkey. The cumulative value of these agreements exceeded USD 25 billion, and two-thirds of this amount has been brought about by agreements, which international investors have been parties to.

Chart 3.3.6



Source: YASED

The finance sector has again received the highest share in mergers and acquisition; although the noteworthy transactions of 2006 took place in the banking sector, in 2007 the insurance sector has become also notable with a considerable number of agreements.

FDI inflows arise as a major tool in financing of the current account deficit. The significance of FDI inflows, as a long-term and secure tool, further increases due to forecasts that the current account deficit will increase yet more particularly due to oil prices, which are expected to remain high. Increases in FDI inflows gain more importance, due to the predictions that the current account deficit which was USD 38 billion (estimated as 7.5% of the GDP) in 2006, might exceed USD 50 billion (estimated 7.5% of the GDP) in 2007. When we take a look at the general outlook of the balance payments, we see that at the end of the 2007, inflows cover 60% of the current deficit, as in 2006.

Table 3.3.7

	Current Account Balance (million \$)	International Direct Investment Inflows (million \$)
1980	-3,408	18
1990	-2,625	684
1995	-2,339	885
2000	-9,823	982
2001	3,393	3,352
2002	-1,519	1,133
2003	-8,036	1,752
2004	-15,599	2,885
2005	-22,604	10,029
2006	-32,193	19,918
2007	-37,996	21,873

Source:Central Bank of Turkey

Investment incentive certificate registries show that investment incentive certificates have been issued to foreign capital companies for 198 investment projects with a cumulative value of USD 5.4 billion. As for the last 5 years (2003-2007); foreign

capital companies have planned approximately 1000 investment projects with a cumulative value of USD 16.3 billion.

Together with the 3702 new foreign capital companies established in 2007, the total number of foreign capital companies in Turkey has reached to 18,308.

Given the fact that FDI inflows resulting from the currently known M&A agreements will be around USD 10 billion, and taking into consideration the existing privatization potential, one might predict that the FDI inflow figure for 2008 and beyond will again be around USD 15-20 billion.

We have observed that FDI inflows, in line with global trends, have concentrated - partly as a result of the growing number of M&A transactions – in finance, telecommunications, retail, and real estate-construction sectors. This trend will continue in term ahead, and investments into sectors such as mining energy, and petrochemicals might increase as well. Investments in the energy sector might climb yet higher taking into consideration the licenses to be issued in 2008. The share of privatization-sourced FDI inflows is expected to expands in 2008.

Table 3.3.8

M&A DEALS IN TURKEY (2007)

Target Company	Buyer	Country of Buyer	Deal Value (Mn \$)	Stake (%)
		Germany;		
Antalya Havalimanı	Fraport ; IC Içtas Holding	Turkey	3500	100.00
Oyak Bank	ING Bank N.V.	Netherlands	2673	100.00
	GMR Infrastructure; Limak			
	Insaat ve Ticaret A.S.;	India;		
	Malaysia Airport Holding	Turkey;		
Sabiha Gökçen Airport	Berhad	Malaysia	2600	100.00
	Injaz Projects; Socar &	Saudi Arabia;		
Petkim	Turcas Enerji A.S.	Turkey	2040	51.00
Finansbank	National Bank of Greece	Greece	1800	34.40
Izmir Port	Ege Ihracatçıları Birliği (EİB); Global Yatirim Holding; Hutchison Whampoa	Turkey; China	1300	100.00
	Kohlberg Kravis Roberts &			
UN Ro-Ro	Co., L.P.(KKR)	USA	1240	87.90
Türkiye Finans Katılım				
Bankası	National Commercial Bank	Saudi Arabia	1080	60.00
Eczacibasi Generic		Czech		
Pharmaceuticals	Zentiva	Republic	610.88	75.00
Garanti Sigorta	Eureko	Netherlands	486	80.00
Caranti Orgonia		United		
Intergum	Cadbury Schweppes plc	Kingdom	450	100.00
Cevahir Alisveris	St. Martins Sisli Gayrimenkul	United		
Merkezi	Yatirimciligi Ticaret A.Ş.	Kingdom	421	50.00
Genel Yaşam Sigorta A.S	Mapfre SA	Spain	373.81	80.00
Sungate Port Royal				
Hotel	Mirax Group	Russia	340	100.00
Enerjisa Enerji Uretim				
A.S.	Verbund	Austria	326.6	49.99
Sekerbank	TuranAlem Securities	Kazakhstan	301	34.00
Turk DemirDokum Fabrikalari A.Ş.	Vaillant Group	Germany	299.8	72.56
TAV Havalimanlari A.S.	Meinl Airports International (Meinl European Land)	Austria	277.8	10.10

Source: ISI Dealwatch

CHAPTER FOUR

Data and Variables

4.1 Data Definitions

FDI: Foreign direct investment is the investment of foreign assets into domestic structures, equipment, and organizations. It does not include foreign investment into the stock markets. Foreign direct investment is thought to be more useful to a country than investments in the equity of its companies. Sometimes owners can be only foreign investors or foreigners can be merger with domestic firm.

GDP:The gross domestic product (GDP) or gross domestic income (GDI) is one of the measures of national income and output for a given country's economy.GDP is defined as total market value of all final goods and services produced within the country in a given period of time (usually a calendar year). It also considered the sum of value added at every stage of all final goods and services produced within a country in a given period of time, and it is given a money value.

GDP:C+I+G+(X-M)

GROWTH:

- 1)Current GDP is GDP expressed in the current prices of the period being measured.
- 2) Nominal GDP growth is GDP growth adjusted for price changes.
- 3)Real GDP growth is GDP growth adjusted for price change. Calculating the real GDP growth allows economists to determine if production increased or decreased, regardless of changes in the purchasing power of the currency.

GDP Deflator:Inflation is a rise in general level of prices of goods and services over time. There are many measures of inflation. For example, different price indices can be used to measure changes in prices that affect different people. Two widely known indices for which inflation rates are reported in many countries are the Consumer Price Index (CPI), which measures consumer prices, and the GDP deflator, which measures price variations associated with domestic production of goods and services.

Exchange Rate:An change rate is the current market price for which one currency can be exchanged for another. If the US exchange rate for the Canadian Dollar is \$1.60, this means that 1 American Dollar can be exchanged for 1.6 Canadian Dollars.

Exports:To send goods or services across frontiers for the purpose of selling and realizing foreign exgange.

4.2 Variables

The empirical analysis includes annual data from the period 1975 to 2006 (for Turkey). This data is used as an attempt to investigate the relationship between FDI and macroeconomic variables. The macroeconomic variables are GDP, GDP deflator, Growth, Exchange rate and Exports of goods. These variables are taken from Organization for Economic Cooperation and Development (OECD), Foreign Investors Association Turkey (YASED) and Central Bank of the Republic of Turkey (TCMB). As a result of the variation in the availability of data, my period is ranked from 1975 to 2006.

In conclusion, I used five variables mentioned below in the regression analysis.

- i. Gross Domestic Product (GDP) in current US dollars,
- ii. Exports of goods
- iii. The Growth rate of GDP annual percentage change,
- iv. Exchange rate average (US \$/ YTL),
- v. The GDP deflator (INFLATION)

The first four variables are expected to be in a positive way connected with FDI inflows, on the contrary I suppose that inflation has a negative linkage with FDI inflows.

Chapter five

Methodology and Analysis

5.1 Methodology

After the macroeconomic variables have been described, I passed to the empirical linkages between macroeconomic variables and FDI flows. My analysis is started with regression test, for the entire period 1975 up to 2006. In my model are five independent variables Gross Domestic Product (GDP), GDP deflator, Growth, Exchange rate average, Exports of goods and dependent one is Foreign Direct Investment (FDI). Also, the logarithm is used for both investment flows and independent variables being used. As they are linear, Growth rate and the GDP deflator are the exceptions. This study model trying to explain the effect of the chosen independent variables on FDI is expressed as follows:

 $logFDI_{i} = \alpha + \beta_1 logGDP_{i} + \beta_2 GDPD_{i} + \beta_3 GROWTH_{i} + \beta_4 logEXCAV_{i} + \beta_5 log EXPO1_{i} + e_i$

5.2 Analysis and Results

Table 5.2.1 Correlation Matrix Log GROWTH LogEXCAV LogEXP01 **GDP** GDPD GDP GDPD 0.062252 1 GROWTH 0.051429 -0.458624 0.023509 0.000447 **EXCAV** 0.979097 0.077839 0.96825 EXP01 0.990847 -0.010497 1

'Including highly correlated macro variables in a model could result in significant bias to the level of the parameters. For this reason, in order to prevent the collinearity problem, the models formed in this research do not include correlated variables in the same model.

Table 5.1.1 shows the correlation matrix for GDP, Growth, GDP deflator, Exchange rate average, Exports of goods. An examination of the correlation results indicates that the correlation between GDP and GDP (1.00), GDP and GDP deflator (0.062), GDP and Growth (0.051), GDP and Exchange rate average (0.97), GDP and Exports of goods (0.99); GDP deflator and GDP deflator (1.00), GDP deflator and Growth (-0.45), GDP deflator and Exchange rate average (0.02), GDP deflator and Exports of goods (-0.01); Growth and Growth (1.00), Growth and Exchange rate average (0.0004), Growth and Exports of goods (0.07); Exchange rate average and Exchange rate average (1.00), Exchange rate average and Exports of goods (0.96); Exports of goods and Exports of goods (1.00). Therefore, in order to prevent these highly correlated variables from causing multicollinearity problems, one variable needed to be dropped from the logistic model.

Table 5.2.2 Determinants of FDI:OLS estimations

Variables	Model 1	Model 2	Model 3
Intercept	-44.40750	21.90617	-14.59520
	(0.0000)***	(0.0000)***	(0.0000)***
GDP	2.474844		
	(0.0000)***		
GDP deflator	-0.008029	-0.002880	-0.003054
	(0.1492)	(0.6495)	(0.5833)
Growth	-0.032360	1.93E-05	-0.028903
	(0.3049)	(0.9996)	(0.3680)
Exchange rate average		0.403715	
		(0.0000)***	
Exports of goods			1.489333
			(0.0000)***
R^2	0.86546	0.818041	0.859821
Prob(F-statistic)	0.000000	0.000000	0.000000

P-values are in parentheses

^{*}Significance at the level of 10%

**Significance at the level of 5%

***Significance at the level of 1%

Models 1to 3 are regression models for period of 1975-2006.

Interpreting;

 $y = \alpha + \beta + 1 \times 1 + \beta \times 2 \times 2 + \beta \times 3 \times 3 + \beta \times 4 \times 4 + \beta \times 5 \times 5 + residuals$

y = Foreign Direct Investment (Dependent Variable)

 $\alpha = Intercept Term (Constant)$

β 1 = Coefficient of Gross Domestic Product (Independent Variable)

β 2 = Coefficient of GDP Deflator (Independent Variable)

β 3 = Coefficient of Growth (Independent Variable)

β 4 = Coefficient of Exchange Rate Average (Independent Variable)

β 5 = Coefficient of Exports of Goods (Independent Variable)

Interpreting Model 1;

- α : If we hold other variables constant, then y (dependent variable) will be equal to α .
- β 1: If we hold β 1, and β 3 are constant then, 1 unit increase in GDP, and FDI will be increase 2.47 unit, because they have a positive relationship each other.
- β 2: If we hold β 1, and β 3 are constant then, 1 unit increase in GDP deflator, and FDI will be decrease 0.008 unit, because they have negative relationship each other.
- β 3: If we hold β 1, and β 2 are constant then, 1 unit increase in Growth, and FDI will be decrease 0.032 unit, because they have negative relationship each other.

R²: 0.8654 in other words 86.54 % of the variation FDI can be attributed to variations of GDP, GDP deflator and Growth. So, as a result we can say that the model is good.

Interpreting P- Values (Prob) Hypothesis testing concerning the coefficient using P-Values at 5 % Significance level. $logFDI = \alpha + \beta + 1 logGDP + \beta + 2GDPD + \beta + 3GROWTH + residuals$ If P- Value $< 0.05 \rightarrow \text{Variable}$ is significant If P- Value > 0.05 → Variable is not significant H0: β 1 =0 (Variable is not significant) (Null Hypothesis) H1: β1 #0 (Variable is significant) (Alternative Hyp.) For β1 (GDP); (Null Hypothesis) H0: $\beta 1 = 0$ (Variable is not significant) (Alternative Hyp.) H1 : β1 #0 (Variable is significant) P- Value for $\beta 1 = 0.0000 < 0.05$ So, $\beta 1$ (GDP) is highly significant. So, we reject the Null Hypothesis. For β2 (GDPD); (Null Hypothesis) H0: β 2 =0 (Variable is not significant) (Alternative Hyp.) H1: β2 #0 (Variable is significant) P- Value for $\beta 2 = 0.1492 > 0.05$ So, $\beta 2$ (GDPD) is insignificant. So, we accept the Null Hypothesis.

(Null Hypothesis) H0: β3 =0 (Variable is not significant)

For β3 (GROWTH);

(Alternative Hyp.) H1 : β3 #0 (Variable is significant)

P- Value for β 3= 0.3049 > 0.05 So, β 3 (GROWTH) is not significant.

So, we can accept the Null Hypothesis.

Prob (F-statistic) = 0.00000 < 0.05 So, R^2 is significant.

So, we reject the Null Hypothesis.

Interpreting Model 2;

 α : If we hold other variables constant, then y (dependent variable) will be equal to α .

 β 1: If we hold β 1, and β 3 are constant then, 1 unit increase in Exchange rate average, and FDI will be increase 0.40 unit, because they have a positive relationship each other.

 β 2: If we hold β 1, and β 3 are constant then, 1 unit increase in GDP deflator, and FDI will be decrease 0.0028 unit, because they have negative relationship each other.

 β 3: If we hold β 1, and β 2 are constant then, 1 unit increase in Growth, and FDI will be decrease 0.0000193 unit, because they have negative relationship each other.

R²: 0.8180 in other words 81.80 % of the variation FDI can be attributed to variations of Exchange rate average, GDP deflator and Growth. So, as a result we can say that the model is good.

Interpreting P- Values (Prob)

Hypothesis testing concerning the coefficient using P-Values at 5 % Significance level.

 $logFDI = \alpha + \beta$ 1 $logEXCAV + \beta$ 2GDPD + β 3GROWTH + residuals

If P- Value $< 0.05 \rightarrow Variable$ is significant

If P- Value > 0.05 → Variable is not significant

(Null Hypothesis) H0: β 1 =0 (Variable is not significant)

(Alternative Hyp.) H1 : β1 #0 (Variable is significant)



For β1 (EXCAV);

(Null Hypothesis) H0: β 1 =0 (Variable is not significant)

(Alternative Hyp.) H1 : β1 #0 (Variable is significant)

P- Value for $\beta 1 = 0.0000 < 0.05$ So, $\beta 1$ (EXCAV) is highly significant.

So, we reject the Null Hypothesis.

For β2 (GDPD);

(Null Hypothesis) H0: β 2 =0 (Variable is not significant)

(Alternative Hyp.) H1 : β2 #0 (Variable is significant)

P- Value for $\beta 2 = 0.6495 > 0.05$ So, $\beta 2$ (GDPD) is insignificant.

So, we accept the Null Hypothesis.

For β3 (GROWTH);

(Null Hypothesis) H0: β 3 =0 (Variable is not significant)

(Alternative Hyp.) H1 : β3 #0 (Variable is significant)

P- Value for β 3= 0.9996 > 0.05 So, β 3 (GROWTH) is not significant.

So, we can accept the Null Hypothesis.

Prob (F-statistic) = 0.00000 < 0.05 So, R^2 is significant.

So, we reject the Null Hypothesis.

Interpreting Model 3;

 α : If we hold other variables constant, then y (dependent variable) will be equal to α .

 β 1: If we hold β 1, and β 3 are constant then, 1 unit increase in Exports of goods, and FDI will be increase 1.4893 unit, because they have a positive relationship each other.

 β 2: If we hold β 1, and β 3 are constant then, 1 unit increase in GDP deflator, and FDI will be decrease 0.003 unit, because they have negative relationship each other.

 β 3: If we hold β 1, and β 2 are constant then, 1 unit increase in Growth, and FDI will be decrease 0.0289 unit, because they have negative relationship each other.

 R^2 : 0.8598 in other words 85.98 % of the variation FDI can be attributed to variations of Exports of Goods, GDP Deflator and Growth. So, as a result we can say that the model is good.

Interpreting P- Values (Prob)

Hypothesis testing concerning the coefficient using P-Values at 5 % Significance level.

 $logFDI = \alpha + \beta + 1 logEXP01 + \beta + 2GDPD + \beta + 3GROWTH + residuals$

If P- Value $< 0.05 \rightarrow Variable$ is significant

If P- Value > $0.05 \rightarrow Variable$ is not significant

(Null Hypothesis) $H0: \beta 1 = 0$ (Variable is not significant)

(Alternative Hyp.) H1 : β1 #0 (Variable is significant)

For $\beta1$ (EXP01);

(Null Hypothesis) H0: $\beta 1 = 0$ (Variable is not significant)

(Alternative Hyp.) H1 : β1 #0 (Variable is significant)

P- Value for $\beta1$ = 0.0000 < 0.05 So, $\beta1$ (EXP01) is highly significant.

So, we reject the Null Hypothesis.

For β2 (GDPD);

(Null Hypothesis) H0: β 2 =0 (Variable is not significant)

(Alternative Hyp.) H1 : β2 #0 (Variable is significant)

P- Value for $\beta 2 = 0.5833 > 0.05$ So, $\beta 2$ (GDPD) is insignificant.

So, we accept the Null Hypothesis.

For β3 (GROWTH);

(Null Hypothesis) H0: β 3 =0 (Variable is not significant)

(Alternative Hyp.) H1 : β3 #0 (Variable is significant)

P- Value for β 3= 0.3680 > 0.05 So, β 3 (GROWTH) is not significant.

So, we can accept the Null Hypothesis.

Prob (F-statistic) = 0.00000 < 0.05 So, R^2 is significant.

So, we reject the Null Hypothesis.

Chapter Six

Conclusion

Foreign direct investments are the most important form of capital inflows to developing countries. I aimed to find out the effect that the of macroeconomic variables have over FDI in Turkey.

This study provides a linear model to evaluate the effect of macroeconomic variables on Foreign Direct Investment inflows to Turkey. This paper covers the 31 years from 1975 to 2006. In model one I resulted that GDP was significant and has a positive effect over FDI. In model two changes, the Exchange rate average it has positive value as it was expected at the beginning. This variable affected directly the FDI value. In model three the Exports of goods is the variable with a positive effect. In other words, the result of the regression analysis, which is covering a period of 31 years, is that the three variables are closely associated with FDI.

REFERENCES

Baykal, M., 2003." Benefits of FDI for Developing Countries and the Case of Turkey".

Karaege, M., 2006. "Development and Determinants of Foreign Direct Investment in Turkey: A comparative Analysis with the EU Countries".

Erdilek, A., 2003. "A Comparative Analysis of Inward and Outward FDI in Turkey", Vol 12, No 1.

Türsoy, **T.**, **and Rjoub**, **H.**, **2005**. "The Determinants of Foreign Direct Investment: Emprical Evidence from Turkey".

Doğrudan Yabancı Yatırımlar Özel İhtisas Komisyonu Üyeleri. "Sekizinci Beş Yıllık Kalkınma Planı", DPT:2514-ÖİK:532

Sing,H.& Jun, K.W., 1995."Some New Evidence on Determinants of FDI in Developing Countries".

Noy, I. & Vu, T. B., 2007. "Capital Account and Liberalization and FDI".

Gastanaga, V. M., Nugent, J. B. And Pashamova, B.(1998). Host Country Reforms and FDI inflows: How much different do they make?

Yased, 2008. "International FDI Report (2008)".

Delice, G., 2005."Dogrudan Yabancı Yatırım İstatistikleri: Türkiye ve Euro Bölgesi Açısından Bir Karlıştırma".

Kencebay, B., 2005."Temel Veriler ile Türkiyede Doğrudan yabancı Yatırımlar"

Undersecretariat of Treasury Genel Directorate of Foreign Investment 2006.

Yılmaz, K., 2007." Türkiye için Doğrudan Yatırım Stratejisine Doğru". Karagöz, K.,

Loewendahl, H. & Loewendahl, E., 2001. "Turkey's Performance in Attracting FDI Implications of EU Enlargement".

Erdal, F. & Tataloğlu, E., 2002."Locational Determinants of Foreign Direct Investment in a Emerging Market Economy:Evidence from Turkey.

Berkoz, L. & Türk, S., 2005." Locational Determinants of Foreign Investment Firms in Turkey.

Online Resources

ISI Internet Securities Dealwatch

www.securities.com

UNCTAD (United Nations Conference on Trade and Development)

www.unctad.org

OECD (United Nations Conference on Trade and Development

www.oecd.org

Central Bank of Turkey

www.tcmb.gov.tr

Undersecretariat of Treasury Genel Directorate

www.hazine.gov.tr

Foreign Investors Association Turkey

www.yased.org

APPENDIX

GROSS DOMESTIC PRODUCT

	Turkey / Turquie
1960	
1961	
1962	
1963	
1964	
1965	
1966	
1967	
1968	
1969	
1970	32.8
1971	36.3
1972	40.7
1973	44.3
1974	51
1975	59.9
1976	69.9
1977	76.9
1978	83.5
1979	89.9
1980	95.7
1981	109.7
1982	120.6
1983	131.6
1984	145.7
1985	156.5
1986	171.2
1987	192.6
1988	203.5
1989	211.7
1990	240.2
1991	250.9
1992	272.1
1993	300.7
1994	290.3
1995	317.5
1996	347.1
1997	380.2
1998	398.4
1999	383.2
2000	440
2001	
2001	416.9

2002	453.1
2003	465.5
2004	530.8
2005	561.1
2006	639.7

GDP DEFLATOR

Turkey / Turque 1960 1961 1962 1963 1964 1965 1966 1967	
1961 1962 1963 1964 1965 1966 1967	
1962 1963 1964 1965 1966 1967	
1963 1964 1965 1966 1967	
1964 1965 1966 1967	
1965 1966 1967	**
1966 1967	
1967	
1968	
1969	
1970	
1971 1	7.3
1972	1.3
1973 2	1.6
1974 2	8.6
1975	0.9
1976	5.1
1977 2	3.7
1978 4	6.7
1979 7	5.8
1980 8	8.1
1981	44
1982 2	8.2
1983 2	6.3
1984 4	8.2
1985 5	3.1
1986	36
1987 3	3.6
1988 6	9.3
1989 7	5.5
1990 5	8.3
1991 5	8.8
1992 6	3.7
1993 6	7.8
1994 10	6.5
1995 8	37.2
1996 7	7.8
1997	31.5
1998 7	75.7
	55.6
	19.9
2001 5	54.8
	14.1
2003	22.5

2004	9.9
2005	5.4
2006	11.5

EXPORTS OF GOODS

Turkey / Turquie
0.3
0,4
0.4
0.4
0.5
0.5
0.5
0.5
0.5
0.6
0.7
0.9
1.3
1.5
1.4
2
1.8
2.3
2.3
2.9
4.7
5.7
5.7
7.1
8
7.5
10.2
11.7
11.6
13
13.6
14.7
15.3
18.1
21.6
23.2
26.2
27
26.6
27.8
31.3
35.8
47.3
63.1

2005	73.5	
	2006	

INFLOWS OF FDI

	Turkey / Turquie
1993	636
1994	608
1995	885
1996	722
1997	805
1998	940
1999	783
2000	982
2001	3352
2002	1137
2003	1752
2004	2883
2005	9801
2006	20165

EXCHANGE RATE AVERAGE

1950	2.8
1951	2.8
1952	2.8
1953	2.8
1954	2.8
1955	2.8
1956	2.8
1957	2.8
1958	2.8
1959	2.8
1960	9.0
1961	9.0
1962	9.0
1963	9.0
1964	9.0
1965	9.0
1966	9.0
1967	9.0
1968	9.0
1969	9.0
1970	11.3
1971	15.0
1972	14.0
1973	14.0
1974	13.7
1975	14.3
1976	15.9
1977	17.8
1978	24.1
1979	37.6
1980	76.0
1981	110.2
1982	160.9
1983	224.0
1984	364.9
1985	518.3
1986	669.4
1987	855.7
1988	1,420.8
1989	2,120.8
1990	2,607.6
1991	4,169.9
1992	6,887.5
1993	10,986.0

1994	29,704.3
1995	45,673.5
1996	81,083.6
1997	151,429.0
1998	260,040.1
1999	420,126.2
2000	623,704.0
2001	1,225,411.8
2002	1,505,839.5
2003	1,493,067.8
2004	1,422,341.2
2005	1.3408
2006	1.4311

Model 1

	Mode	1 1		
Dependent Variable:FDI				
Method:Least Squares				
Data:06/05/08 Time:11:07				
Sample:1975 2006				
Included observations:32				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	-44.4075	4.793578	-9.263958	0.0000
GDP	2.474844	0.184463	13.4165	0.0000
GDPD	-0.008029	0.005413	-1.48307	0.1492
GROWTH	-0.03236	0.030965	-1.045049	0.3049
R-squared	0.86546		Mean dependent var	19.68103
Adjusted R-squared	0.851045		S.D. Dependent var	1.798993
S.E of regression	0.694315		Akaike info criterion	2.224687
Sum squared resid	13.49806		Schwarz criterion	2.407904
Log likelihood	-31.59499		Hannan-Quinn criter.	2.285418
F-statistic	60.03901		Durbin-Watson stat	1.452523
Prob(F-statistic)	0.000000			

Model 2

	Model			
Dependent Variable:FDI				
Method:Least Squares				
Data:06/05/08 Time:11:15				
Sample:1975 2006				
Included observations:32				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	21.90617	0.476757	45.94824	0.0000
EXCAV	0.403715	0.035995	11.2159	0.0000
GDPD	-0.00288	0.006268	-0.459389	0.6495
GROWTH	1.93E-05	0.035867	0.000539	0.9996
R-squared	0.818041		Mean dependent var	19.68103
Adjusted R-squared	0.798546		S.D. Dependent var	1.798993
S.E of regression	0.807454		Akaike info criterion	2.526608
Sum squared resid	18.25551		Schwarz criterion	2.709825
Log likelihood	-36.42573		Hannan-Quinn criter.	2.587339
F-statistic	41.96032		Durbin-Watson stat	1.12886
Prob(F-statistic)	0.000000			

Model 3

Dependent Variable:FDI				
Method:Least Squares				
Data:06/05/08 Time:11:16				
Sample:1975 2006				
Included observations:32				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	-14.5952	2.646153	-5.515629	0.0000
EXP01	1.489333	0.113681	13.10097	0.0000
GDPD	-0.003054	0.005502	-0.555064	0.5833
GROWTH	-2.89E-02	0.031585	-0.915065	0.3680
R-squared	0.859821		Mean dependent var	19.68103
Adjusted R-squared	0.844802		S.D. Dependent var	1.798993
S.E of regression	0.708716		Akaike info criterion	2.265744
Sum squared resid	14.06379		Schwarz criterion	2.448961
Log likelihood	-32.25191		Hannan-Quinn criter.	2.326476
F-statistic	57.24842		Durbin-Watson stat	1.459747
Prob(F-statistic)	0.000000			