

MUSTAFA TAHIR DEMIRSEL

Selcuk University, TURKEY

ADEM ÖĞÜT

Selcuk University, Turkey

MEHMET MUCUK

Selcuk University, Turkey

THE EFFECT OF FOREIGN DIRECT INVESTMENT ON ECONOMIC GROWTH: THE CASE OF TURKEY

Abstract:

In developing countries adequate and necessary investment cannot be realized since their domestic savings rate is low and foreign savings rate is very low. Here FDI helps diminish domestic and foreign savings deficits. Capital account liberalization in Turkey was initiated in conjunction with the process of economic and financial reforms that started in 1980, and was fully completed in 1989. In this paper, the objective is to analyze the relationship between FDI and economic growth in Turkey by using the data covering the time period between 2002:Q1 and 2014:Q1. For this purpose unit root test, Johansen cointegration test, and variance decomposition were applied. According to the findings there is no relationship between these variables in the long run.

Keywords:

Foreign Direct Investment, Economic Performance, Economic Growth

JEL Classification: A10, E00, F30

INTRODUCTION

Developing countries usually have inadequate savings and it is one of the main problems of them. This situation makes the foreign capital important to fill the savings gap and pursue an economic development process. Therefore, economists have always considered capital as the central element of the process of economic development. The straightforward view of development economists is that capital is essential for growth and its origin does not matter (Waheed, 2004: 1).

Today it is very well understood that technology diffusion plays a central role in the process of economic development. In contrast to the traditional growth framework, where technological change was left as an unexplained residual, the recent growth literature has highlighted the dependence of growth rates on the state of domestic technology relative to that of the rest of the world (Borensztein et al., 1998: 116).

The capital-deficient countries heavily resorted to capital as the primary means to achieve rapid economic growth. Unfortunately, the growth experience of many of these countries has not been very satisfactory and, as a result, they accumulated a large external debt and are now facing serious debt servicing problems (Waheed, 2004: 1). Therefore, developing countries should not neglect the technology diffusion by using foreign capital to assure economic development.

Foreign capital is mainly divided into two categories which are foreign portfolio investment (FPI) and foreign direct investment (FDI). "FPI includes investments by a resident entity in one country in the equity and debt securities of an enterprise resident in another country which seek primarily capital gains and do not necessarily reflect a significant and lasting interest in the enterprise. The category includes investments in bonds, notes, money market instruments and financial derivatives other than those included under direct investment, or in other words, investments which are both below the ten percent rule and do not involve affiliated enterprises. In addition to securities issued by enterprises, foreigners can also purchase sovereign bonds issued by governments" (UNCTAD, 1999: 4)

FDI as "an investment that is made to acquire a lasting interest in an enterprise operating in an economy other than that of the investor, the investor's purpose being to have an effective voice in the management of the enterprise." (IMF, 1993: 86). The basic reason of FDI is international profit differences. In other words, it is because overseas profit is more than domestic one. Most of such investment is made by multinational enterprises. These enterprises are managed by a single headquarter and make manufacturing in other countries.

With the globalization process, economic, commercial and technologic boundaries have become uncertain and in this way capital transfer has been possible between different countries. Capital transfers which is realized through short term portfolio investment and foreign direct investment (FDI) are very important especially for the countries of which national savings are inadequate. Developing countries prefer mostly FDI. Because short term portfolio investment may affect the exchange rates negatively by causing overvaluation for the home country's national currency and damage the balance of current accounts. People controlling the hot money may rapidly withdraw it when they decide that home country's balance of current accounts is not sustainable. This situation leads to deepen the crisis there. Therefore,

developing countries campaign for attracting FDI generally (DPT, 1995: 213). Especially the 1990s have been marked by the increasing role of FDI in total capital flows. Following the 1980s debt crisis, and recently the 1997 turmoil in the emerging economies, the emphasis among policymakers in developing countries has shifted towards attracting more FDI (Alfaro et al., 2004: 90).

FDI has different roles in a country's development process. In developing countries adequate and necessary investment cannot be realized since their domestic savings rate is low and foreign savings rate is very low. Here FDI helps diminish domestic and foreign savings deficits. FDI provides a country with technology transfer and increase in employment as its reason of existence is producing goods and services. FDI also helps increase in tax revenues since it raises the added value. Moreover, FDI makes a contribution for making production more qualitative and workforce more productive (Gorgun, 2004: 4). FDI has some positive effects on home country's economy, but it also has some negative effects on it. Some of these negative effects are foreign control on home country's key sectors; disordered economic integrity; abolition of protective foreign trade restrictions; providing unfair competitive advantage; damaging balance of payments through profit transfers and creating technologic dependency for the home country (Seyidoglu, 2003: 730).

Turkey is one of the powerful economies in Eastern Europe, the Balkans, The Black Sea and the Middle East and like all developing countries very willing to attract FDI. Turkish economy is also one of the biggest commercial partners of the European Union. Capital account liberalization in Turkey was initiated in conjunction with the process of economic and financial reforms that started in 1980, and was fully completed in 1989. Before 1980, capital flows were controlled through foreign exchange regulations. After 1980, capital account liberalization started with the Decrees No 28 and 30, which were put into force in December 1983 and July 1984, respectively. These decrees partly liberalized the capital accounts and full capital account liberalization was accomplished in 1989.

FDI inflows have increased substantially in the 2000s compared to the 1980s and 1990s in Turkey thanks to economic and political stability. While the accumulated FDI inflows to Turkey until the year 2002 accrued to only about USD 15 billion, it reached to USD 138 billion between 2003 and 2013. FDI inflows to Turkey have had an upward trend especially since 2005, and it reached to USD 22 billion in 2007 as the highest level ever recorded. However, the country got affected by the decline in global FDI flows which due to the economic crisis in 2008, and since 2009 FDI inflows to Turkey has followed a fluctuating course (Republic of Turkey Ministry of Economy, 2013: 9). In this period, services and manufacturing sectors have attracted the highest amount of FDI. Majority of FDI inflows come to Turkey from Europe, North America and the Gulf countries (www.invest.gov.tr, 14/08/2014).

Turkey's dynamic economy is a complex mix of modern industry and commerce along with a traditional agriculture sector that still accounts for about 30% of employment. It has a strong and rapidly growing private sector, yet the state remains a major participant in basic industry, banking, transport, and communication. Gross Domestic Product (GDP) Growth Rate in Turkey averaged 0.96 percent from 1998 until 2014, reaching an all time high of 6.69 percent in the second quarter of 2009 and a record low of -7.57 percent in the first quarter of 2009 (www.tradingeconomics.com/turkey/gdp-growth, 14/08/2014).

In this paper, the objective is to analyze the relationship between FDI and economic growth in Turkey by using the quarterly time series data covering the time period between 2002:Q1 and 2014:Q1.

LITERATURE REVIEW

There are very different arguments about the effects of FDI on economic growth. In some of the empirical studies, there are positive relationships between FDI and economic growth, but in some others exact opposite results can be seen.

Karimi and Yusop (2009) researched the relationship between FDI and economic growth for Malaysia by using Toda-Yamamoto causality test and ARDL limit test. The results showed that there was not a powerful relationship in the long run and FDI affected economic growth indirectly. Magnus and Fosu (2008) realized a similar research for Ghana (1970-2002 period) by using VAR model, cointegration and Granger causality tests. Findings showed that before 1983 there was not a meaningful correlation, but after that FDI had a positive effect on growth. Ayanwale (2007) made the same research for Nigeria (1970-2002 period) and found that in the communication and petroleum sectors FDI had positive effects but in the manufacturing sector FDI had a negative effect on economic growth. Khaliq and Noy (2007) realized a sectoral research in Indonesia by using the data covering 1997-2006 time period. Findings showed that total FDI stock had a positive effect on growth but results might change in some sectors. Deger and Emsen (2006) examined the causality relationship between FDI and economic growth for 27 transition economies of former Soviet Union (1990-2002 period) and found that FDI was an important factor in the economic growth process of such economies. Feridun (2004) analyzed the relationship between GDP and FDI through Granger causality test and VAR model by using the data covering the period between 1976-2002 for Cyprus. Findings proved that there is a unidirectional relationship from FDI to economic growth.

In the literature, there are also some researches for Turkish case. For example, Afsar (2008) investigated the relationship between FDI and economic growth for the Turkish economy for the period 1992:1-2006:3. The empirical results showed that there was a one-way relationship between FDI and economic growth and the direction of this relationship was from FDI to economic growth. Alagoz, Erdogan and Topalli (2008) examined the relationship between FDI and economic growth for the period 1992-2007 in Turkey. The analysis showed that there was not any granger causality relationship between FDI and economic growth. Also in this paper, 2002-2007 periods was studied by using regression analysis. According to this analysis the effects of FDI on economic growth was found as medium intensive. Ornek (2008) analyzed the causality relationship between foreign capital and domestic saving using time series data over the quarterly period 1996:4-2006:1 in Turkey. Empirical evidence showed that FDI have positive and significance effects on domestic saving in both short and long-run. However, short term capital inflows have negative effect on domestic savings in both short and long-run. Also, it has been found that short term capital inflows and FDI have positive effect on economic growth. Simsek and Behdioglu (2006), researched the causality relationship between FDI and growth by using a correlation analysis based on Cobb-Douglas production function. Findings showed that FDI had a positive effect on gross domestic product (GDP) of Turkey. Acikalın, Gul and Yasar (2006) tested the relationship between gross national product (GNP) and inward FDI by using the data covering 1980-2002 period through cointegration

analysis and found that there was a long term positive relationship between GNP and FDI in Turkey.

DATA AND METHODOLOGY

Quarterly time series data, which covers the period 2002:Q1-2014:Q1, are utilized in this study. All the variables are expressed in logarithmic form. The variables used in this study are Foreign Direct Investment (FDI) and Gross Domestic Product (GDP). These variables come from The Central Bank of Turkey (CBRT). The data and resources were shown at Table 2.

Table 1. The Data Set

Variable	Explanation	Resources
FPI	Foreign Direct Investment, \$	CBRT
GDP	Gross Domestic Product, \$	CBRT

The following techniques were used for data analysis and evaluation:

- Unit Root Test
- Johansen Cointegration Test
- Variance Decomposition

EMPIRICAL RESULTS

To analyze the long run cointegrated relationship among the different variables by applying the VAR model, firstly, it is necessary to test stationarity and the order of integration of the variables in the model. If some or all of the variables in the model are non-stationary, conventional hypothesis-testing and confidence intervals will be unreliable. In the existence of non-stationary variables, there might be a so-called spurious regression. A spurious regression has a high R^2 and a t-statistic that appears to be significant, but actually have no economic meaning (Alhajhoj, 2007: 3651). All the data series were tested for stationarity to avoid statistically spurious relationships. For this purpose the Augmented Dickey-Fuller unit root test was used and test results are presented in Table 2.

Table 2. Results of ADF Unit Root Test

Variables	ADF Test Statistic		Test Critical Values			
	Level	First Difference	Level		First Difference	
FDI	-2.010688	-11.83381	1% level	-3.577723	1% level	-3.577723
	(0.2814)	(0.0000)	5% level	-2.925169	5% level	-2.925169
			10% level	-2.600658	10% level	-2.600658
GDP	-2.015703	-11.69520				
	(0.2793)	(0.000)				

The unit root test results show that variables are non-stationary at level form but do not contain unit root after first differencing.

Secondly, it is necessary to determine optimal lag length of VAR model using information criteria. Table 3 shows the optimal lag length selection for the VAR procedure under the sequential modified LR test statistic, final prediction error (FPE), Akaike (AIC), Schwarz (SC) and Hannan-Quinn (HQ) information criteria.

Table 3. Summary of Lag Length Selection

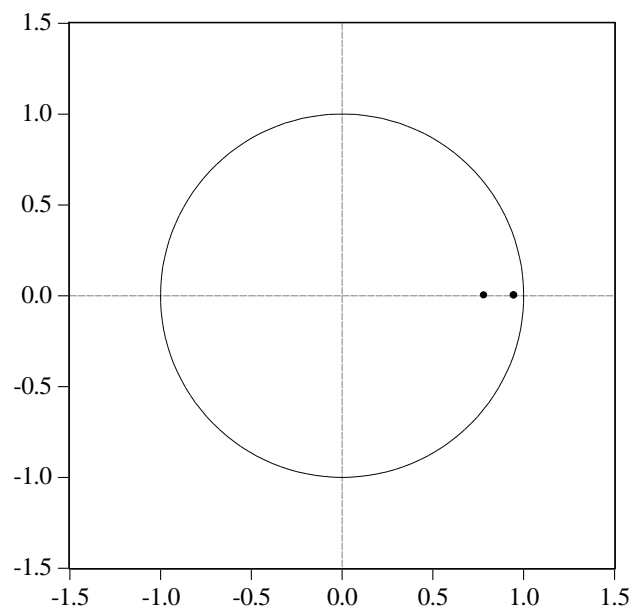
Lag	LogL	LR	FPE	AIC	SC	HQ
0	40.82448	NA	0.000610	-1.725532	-1.645236	-1.695599
1	104.3465	118.5745*	4.33e-05	-4.370957	-4.130069*	-4.281157*
2	108.6567	7.662533	4.28e-05*	-4.384743*	-3.983262	-4.235075
3	109.3464	1.164778	4.98e-05	-4.237617	-3.675545	-4.028082
4	112.6069	5.216887	5.17e-05	-4.204753	-3.482088	-3.935351

* indicates lag order selected by the criterion

The optimal lag length was chosen 1 according to Schwarz and Hannan-Quinn information criteria.

The stability of the VAR model was tested using AR root graph that shows the inverse roots of the AR polynomial.

Figure 1. Inverse Roots of AR Characteristic Polynomial



The points in the graph are the inverse roots of the VAR model. It can be seen in the graph all the points are in the circle, which means the VAR (1) containing gross domestic product and foreign direct investment is stationary.

In the next step Johansen trace and maximum eigenvalue cointegration tests were used to determine whether there is a long term relationship between foreign direct investment and economic growth. The results of the trace and maximum eigenvalue tests are reported in Table 4 and Table 5 which show the number of cointegrating vectors.

Table 4. Unrestricted Cointegration Rank Test (Trace)

Hypothesized	Eigenvalue	Trace	0.05	Prob.**
No. of CE(s)		Statistic	Critical Value	
None	0.118357	7.502955	20.26184	0.8628
At most 1	0.033108	1.582431	9.164546	0.8584

Trace test indicates no cointegration at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

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

Table 5. Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized	Eigenvalue	Max-Eigen	0.05	Prob.**
No. of CE(s)		Statistic	Critical Value	
None	0.118357	5.920524	15.89210	0.7968
At most 1	0.033108	1.582431	9.164546	0.8584

Max-eigenvalue test indicates no cointegration at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

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

The cointegration tests showed that there is no cointegration among the variables. Hence, there is no long term relationship between foreign direct investment and economic growth in Turkey.

Variance decompositions analysis measures the proportion of forecast error variance in a variable that is explained by innovations in itself and the other variables. The variance decomposition of the VAR was presented in Table 6.

Table 6. Variance Decomposition

Variance Decomposition of GDP: Period	GDP	FDI	Variance Decomposition of FDI: Period	FDI	GDP
1	100.0000	0.000000	1	98.63860	1.361397
2	99.74259	0.257411	2	98.99934	1.000664
3	99.16011	0.839886	3	99.18116	0.818838
4	98.28625	1.713746	4	99.18454	0.815463
5	97.17734	2.822661	5	99.02405	0.975948
6	95.90127	4.098730	6	98.72464	1.275364
7	94.52661	5.473388	7	98.31674	1.683259
8	93.11447	6.885528	8	97.83184	2.168161
9	91.71408	8.285924	9	97.29905	2.700946
10	90.36161	9.638392	10	96.74319	3.256815

According to variance decomposition, around 10 percent variation in gross domestic product was explained by foreign direct investment in the 10th term. On the other hand, 3 percent variation in foreign direct investment was explained by gross domestic product.

CONCLUSION

With the effect of globalization process, economic, commercial and technological boundaries have been becoming to disappear. Therefore, especially developing countries focus on foreign capital due to the lack of domestic savings. Among foreign investments, foreign direct investment is more preferred because of its positive effects on some macroeconomic variables such as production capacity, general level of prices, employment and balance of payments. However, foreign direct investment may have negative effects on a country's economy by leading to technological dependence and / or creating crowding out effect.

This study aims to investigate the relationship between foreign direct investment and gross domestic product for Turkey from the period 2002:Q1-2014:Q1. For this purpose unit root test, Johansen cointegration test, and variance decomposition were applied. According to obtained results there is no relationship between these variables in the long run. In other words, since foreign direct investment coming to Turkey is mainly based on mergers and acquisitions, it does not create the expected impact on GDP. Therefore, economic policies must be shaped to attract new foreign direct investment from abroad.

REFERENCES

- Acikalin, S., Gul, E. and Yasar, E. (2006), "Ücretler ve Büyüme ile Doğrudan Yabancı Yatırımlar Arasındaki İlişkinin Ekonometrik Analizi", *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*, 16, 271-282.
- Afsar, M. (2008), "The Causality Relationship Between Economic Growth and Foreign Direct Investment in Turkey", *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 20, 1-10.

- Alagoz, M., Erdogan, S., and Topalli, N. (2008), "Doğrudan Yabancı Sermaye Yatırımları ve Ekonomik Büyüme: Türkiye Deneyimi 1992-2007", *Gaziantep Üniversitesi Sosyal Bilimler Dergisi*, 7(1), 79-89.
- Alfaro, L., Chanda, A., Kalemli-Ozcan S. and Sayek S. (2004), "FDI and Economic Growth: The Role of Local Financial Markets", *Journal of International Economics*, Volume 64, Issue 1, Pages 89-112.
- Alhajoj H. (2007), Exports and Economic Growth in Saudi Arabia: A VAR Model Analysis, *Journal of Applied Sciences*, 01/2007, 3649-3658.
- Ayanwale, A. B. (2007), FDI and Economic Growth: Evidence from Nigeria, *African Economic Research Consortium (AERC) Research Paper*, 165, Nairobi.
- Borensztein, E., De Gregorio, J. and Lee J. W. (1998), "How Does Foreign Direct Investment Affect Economic Growth?", *Journal of International Economics*, 45, 115-135.
- Deger, M. K. and Emsen, O. S. (2006), "Geçiş Ekonomilerinde Doğrudan Yabancı Sermaye Yatırımları ve Ekonomik Büyüme İlişkileri: Panel Veri Analizleri (1990-2002)", *Cumhuriyet Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 7(2), 121-137.
- DPT (1995), *Globalization, Regional Integrations and Turkey Report*, State Planning Organization, DPT: 2374, Ankara.
- Feridun, M. (2004), "Foreign Direct Investment and Economic Growth: A Causality Analysis for Cyprus, 1976-2002", *Journal of Applied Sciences*, 4 (4), 654-657.
- Gorgun, T. (2004), Doğrudan Yabancı Yatırımların Tarihsel Gelişimi Çerçevesinde Yatırımların Geliştirilmesinin Etkin Kurumsal Yapılanmaları, *Uzmanlık Tezi*, T.C. Başbakanlık Dış Ticaret Müsteşarlığı İhracatı Geliştirme Etüd Merkezi, Ankara.
- IMF (1993), *Balance of Payments Manual*, www.imf.org/external/np/sta/bop/BOPman.pdf, 10/06/2009.
- Karimi, M. S. and Yusop, Z. (2009), FDI and Economic Growth in Malaysia, *Munich Personal RePEc*, Archive Paper No. 14999.
- Khaliq, A. and Noy, I. (2007), "Foreign Direct Investment and Economic Growth: Empirical Evidence from Sectoral Data in Indonesia", *Working Paper*, University of Hawaii.
- Magnus, F. J. and Fosu, O. E. (2008), Bivariate Causality Analysis between FDI Inflows and Economic Growth in Ghana, *International Research Journal of Finance and Economics*, 15, 103-112.
- Ornek, I. (2008), "Yabancı Sermaye Akımlarının Yurtiçi Tasarruf ve Ekonomik Büyüme Üzerine Etkisi: Türkiye Örneği", *Ankara Üniversitesi Siyasal Bilgiler Fakültesi Dergisi*, 63 (2), 19-217.
- Republic of Turkey Ministry of Economy (2013), *Foreign Direct Investments in Turkey 2012*, Ankara, 111.
- Seyidoğlu, Halil (2003), *Uluslararası İktisat Teori Politika ve Uygulama*, 15. Baskı, Güzem Can Yayınları No: 20, İstanbul.
- Simsek, M. and Behdioglu, S. (2006), "Türkiye'de Dolaysız Yabancı Sermaye Yatırımlarının Ekonomik Büyüme Üzerindeki Etkisi: Uygulamalı Bir Çalışma", *Atatürk Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 20, 47-65.

UNCTAD (1999), *Comprehensive Study of the Interralationship between Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI)*, United Nations Conference on Trade and Development.

Waheed, A. (2004), "Foreign Capital Inflows and Economic Growth of Developing Countries: A Critical Survey of Selected Empirical Studies", *Journal of Economic Cooperation*, 25, 1, 1-36.

www.tradingeconomics.com/turkey/gdp-growth, 14/08/2014.

www.invest.gov.tr, 14/08/2014.