

TRADE OPENNESS AND FDI INFLOWS IN TURKEYSelahattin GÜRIŞ¹Kutay GÖZGÖR²

ABSTRACT Turkey's politics after the decisions on January 24, 1980, have been a milestone in terms of the opening up of the economy. This external trade openness process of Turkey has also attracted multinational companies and has led to further important steps in foreign direct investments (FDI). In this study, we aim to examine the relationship between FDI and openness over the period 1986–2010. We examine not only the relationships between the two variables, but also the impact of leading macroeconomic variables on the FDI. Openness is also used among the variables to explain FDI and the impact of openness on the FDI in the estimated model has been determined. Granger causality analysis has been performed to determine the relationship between the variables in the model and it is concluded that the cause of FDI is trade openness. On the other hand, the effect of openness in the framework of Turkey's economy created with the model obtained, the findings are discussed along with other variables.

Keywords: Foreign Direct Investments, Openness, Granger Causality Test, Unit Root Tests

1. INTRODUCTION

In 1980's many developed and developing countries began to open their economies to the integration with the world. The multinational companies emerging in 1960's have an important impact on the World's opening up process. The developed countries with the capital superiority, have transferred this capital to the ones with the lack of saving and this action put forward the FDI. During this process, important decisions have been made in Turkey on 24 January 1980 in order to keep up with this trend. These decisions can also be considered as the period Turkey has began the openness process, the increase in the FDI during this period is noteworthy. Together with these Turkey has put in force Foreign Direct Investment Laws over the period 1989-2003, in order to benefit from the advantages of FDI. The relationship between the FDIs and the openness of the country is being discussed in the literature. In this study, the relationship between FDI and the trade openness are examined using Turkey's data 1986 – 2010 by comparing different models and the relationship between FDI and external openness has been put forward.

1.1 Trade Openness and Foreign Direct Investment

There are many definitions concerning the openness, in the literature (Squalli and Wilson, 2006, p.3) describes this concept as the impact of the export in the total income while, Alcalá and Ciccone defines it as the ratio of the sum of the import and export volume to the gross national product (GNP) (Alcalá and Ciccone, 2004, p.613). In this study, it is considered as the ratio of the sum of the import and export volume to the gross national product.

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Openness is considered under two titles; trade openness and financial openness. Trade openness is considered to be a prerequisite for financial openness. Accordingly, trade openness can be described as the approach aiming to facilitate the international free trade by the removal of the government control on the trade of goods and services. Financial openness is a set of politics aiming to remove the control and intervention of state on the domestic banking and other financial instruments and the integration of domestic markets to international markets. Briefly, trade and financial openness can be described as the removal of the national restrictions that have a negative effect on the competition and block the free circulation of the good, services, workforce and capital (Yapraklı, 2008, p.68)

Before to 1980, Turkey has implemented import substitution policies but after January 24th 1980 decisions it has abandoned this policy and implemented an openness policy. Consequently, a significant relation is forecasted btw the external openness and the direct foreign capital investments.

International trade has an important impact on the development and growth period of countries. In the literature this process is followed by the independency of trade, in other words openness. Romer (1986), Lucas (1988), Grossman and Helpman (1991) have put forward important theories about the positive impact of openness on the economic growth. According to these theories, FDIs have an important role in the economic growth process. We can say that there is both positive and negative theoretical relationship between openness and FDIs. Considering the positive side of the openness, (Chakrabarti, 2001, p.100) has assumed that the countries will attract more investors as the openness ratio increases, with the presumption that the investments are focused to the tradable sectors. If the companies, have low commercial obstacles and low commercial costs due to the high openness they head to the export instead of FDIs.

The most important effect of the openness in a country is its ability to attract capital. If the investor knows that in long term, he will face obstructions via tariff or instruments out of tariff in this situation he will be reluctant to invest in that country. In the countries with lack of savings the entry of the sources such as FDI may increase the marginal profitability in production in short term. This increase can be expected to have a positive impact on the growth in long term. Government policies are important criteria in terms of determining the degree of openness (Isabel, 2009).

When we look at the literature to investigate the relationship between direct foreign investments and openness different result are likely to be observed. In their study, Lane and Melesi-Ferretti (2001) got the result that in growing countries, openness has a positive impact. Seyoum et.al (2014) has examined this relationship in 25 sub-Saharan Africa countries during the years 1977-2009. As a result of the analysis, a bidirectional causality relation is identified between FDI and openness. (Seyoum and Wu, 2014). As a result of his panel data analysis executed in Latin America, Ponce (2006) has found that, trades, in other words free trade agreements affecting the openness have positive impact in the increase of the FDIs. Ghosh (2007) has tested the relationship between the openness and FDI with panel data models between the years 1970-1997. The study has reflected causality from FDIs towards the openness. Liargovas and Skandalis tested 36 growing countries' relationship between FDIs and openness between the years

1990-2008 using panel regression analysis and founded a positive and important relationship between openness and the FDIs coming to the country. They have also determined that political stability, stability of the foreign currency and the big size of the market have a positive impact on the FDI (Liargovas and Skandalis, 2012).

2. DATA AND METHODOLOGY

The aim is to examine the relationship between FDI and openness in Turkey, during the years 1986–2010. The years with structural changes will be determined by making unit root test with breaks and the causative relationship between the variables in Turkey will be tried to be determined taking the break years into account. In this study data concerning the macroeconomic variables to be used with the FDIs in Turkey between the years 1986 – 2010

The variables used in the study are;

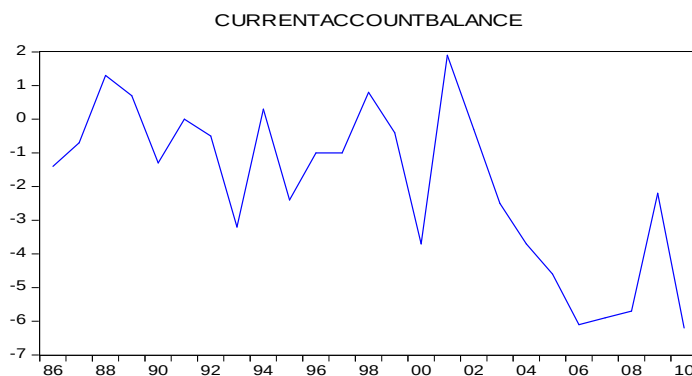
Foreign Direct Investment: FDI as share of GDP between the years 1986 – 2010. The reason why the FDI's share of is calculated is that if the series not stable the stability should be provided so that the results of the analysis can be interpreted easily. In the literature, some studies use fix values for the FDI variable instead of mentioning the ratio. But the FDI variable mentioned as a fix value can give misleading results due to the presence of variables such as foreign currency. The analyzed FDI data have been extracted from the World Bank sources.

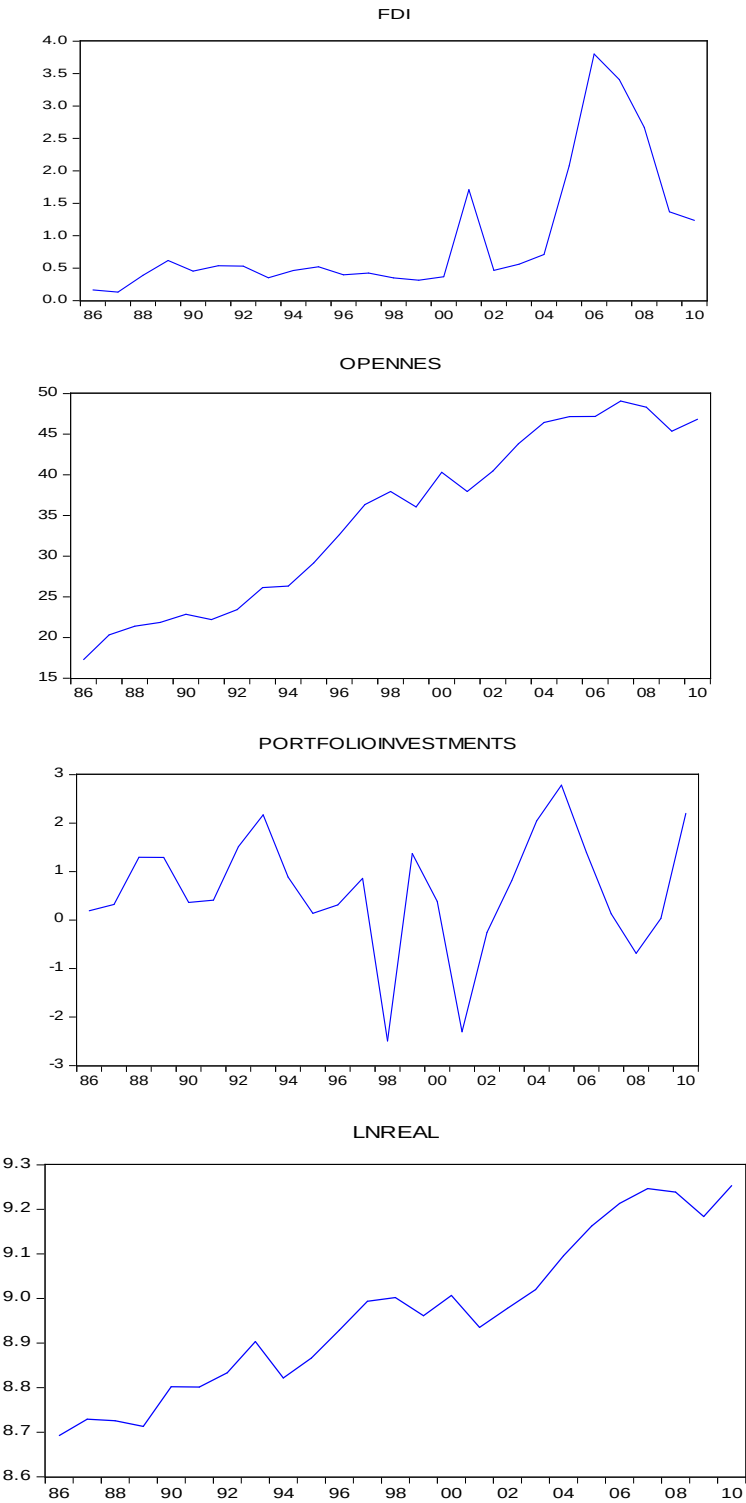
External (Trade) Openness: Another variable used in the analysis is openness. In the Literature this data is both used as nominal and real. But the usage of the real data makes us see and consider the increase or decrease arising from the profitability. The openness data is the one calculated by the University of Pennsylvania with the fixed prices of 2005.

Real Income per Capita: Data that has been converted to real with the 2005 fixed prices according to the purchasing power parity calculated by University of Pennsylvania.

Portfolio Investments: The portfolio investments to the gross national product ratio, obtained from the World Bank sources.

Current Account Deficit: Current Account deficit to the gross national product ratio obtained from the World Bank sources.





3. EMPIRICAL FINDINGS

3.1 Dickey- Fuller Unit Root Test Results

It is necessary to determine whether the variable contains unit root prior to the investigation on the short or long term relationship between the variables. In the study, the unit root test has been executed with the enlarged Dickey-Fuller (ADF) test.

Whether the series carry unit root or not is determined separately according to the equations with and without constant, and trend. Accordingly, it has been observed that the foreign direct capital investment has different levels of unit root, in other words, the series is not stationery. For this reason, in order to obtain the variable stationary of FDI first differences are used and the series has become stabilized. It has been observed that, similarly to the FDI variable, real income per capita and openness series have three different unit roots according to the equation, in other words the series are not stationery and they are in I(1) process. For this reason, the first difference is used and the series are made stationary. In the other hand, it has been observed that the equation containing current account balance time series includes unit root in estimation. For this reason, the first difference is used in order to obtain the stationary of the current account balance series. It has been observed that portfolio investment series does not carry unit root, it is in I(0) process.

Table 1. Dickey- Fuller Unit Root Test Results

Variables	ADF	Exogenous	P Value
FDI	-1.758644	Constant	0.3907
FDI	-2.961727	Constant and Trend	0.1633
FDI	1.713001	None	0.9745
Real Income per Capita	-0.537808	Constant	0.8669
Real Income per Capita	-2.863312	Constant and Trend	0.1906
Real Income per Capita	2.360485	None	0.9938
Trade Openness	-1.272559	Constant	0.6250
Trade Openness	-1.477941	Constant and Trend	0.8089
Trade Openness	2.438668	None	0.9948
Portfolio Investments	-3.696626	Constant	0.0013
Portfolio Investments	-3.596067	Constant and Trend	0.0516
Portfolio Investments	3.079214	None	0.0036
Current Account Balance	-1.302854	Constant	0.184
Current Account Balance	-4.010674	Constant and Trend	0.0224
Current Account Balance	0.60297	None	0.4451
Δ FDI	-3.972661	Constant	0.0071
Δ Real Income per capita	-5.397326	Constant	0.0002
Δ Trade Openness	-5.120671	Constant	0.000
Δ Current Account Balance	-7.306801	Constant	0.000

Notes: ADF values on the table are at 0.10 significance level one way McKinnon table values. P value is calculated according to the model with trend and constant. The lag values are determined with maximum 5 lag, through the Akaike Information Criterion method.

3.2 Zivot - Andrews Unit Root Test Results

FDIs tested btw 1986 -2010 and other macroeconomic variables' structural break year has been determined. Zivot Andrews structural break unit root test has been applied to determine this structural break years. During the determination of break years the 8 lags and stationary model suggested in Perron's (1989) work. According to the test results, FDI variant's break year is 2005,current account balance's is 2004, openness' is 1996, real income per capita is 2005, portfolio investments 'is 2003.

Table 2. Zivot – Andrews Unit Root Test with Structural Breaks Results

Variables	Zivot - Andrews	Break Point	P Value
FDI	-5.337	2005	0.005
Current Account Balance	-5.729	2004	0.003
Portfolio Investments	-4.560	2003	0.034
Openness	-2.796	1996	0.029
Real Income per Capita	-3.979	2004	0.0167

It has been observed that ZA Structural break unit root test on table2 do not carry unit root at level in other word all the time test used are $I(0)$. The main reason why FDI variant's break point has been determined as 2005 can be given as the important increase of FDI and reaching the highest level in Turkish Republic's history in this year. Similarly the improvements in the economic indicators, starting of the EU negotiations and the Foreign Direct Investment Law No. 4875 entrance into force are among the important effects. The implementation of a privatization program in the banking and communications industries in 2005, 3.483 million \$ investment obtained with 203 incentive certificates issued may be stated as the reasons which make this year special.

Zivot - Andrews unit root with break is applied to the openness time series variant used in the study. 1996 has been determined as the break point year according to the results of the test. Turkey's inclusion in the Customs Union in 1 January 1996 may be considered to have an impact. With this membership Customs duties on manufactured goods trade and other trade barrier applications are removed. (Sağlam and Egeli, 2013, p.29).

Becoming a member of the Customs Union is among the most important decisions taken after January 24, 1980 decisions in openness .With the Customs Union, protection rate for industrial products imported from countries of European Union and the European Free Trade Area (EFTA) has been reset and this rate has been decreased to %6 from %11 for the 3rd countries.

Granger causality test has been used to determine sense of the short term relationship of FDIs with the other variants after providing the stationary of the variants used in the study. The lag length determined after providing the stability of the series is given in Table 3.

Table 3. Lag Length Determination Criteria

	Internal Variables: FDI, Current Account Balance, Portfolio Inv., Openness, Real Income per Capita				
Lags	Linear LR Test Statistic	Final Prediction Error	Akaike Data Criterion	Schwarz Data Criterion	Hannan - Quinn Data Criterion
0	NA	0.281144	12.92022	13.16707	12.98230
1	120.9977*	0.002131*	7,976626*	9.457705*	8.349113*
2	27.51053	0.002721*	7.857992	10.57330	8.540885

As seen on Table 3'de the lag length determined as "1" for all criteria and variables, Granger causality test has been applied in order to calculate the short term relations between the macro economical variables calculated with their FDIs, after determining the relevant lag length. Granger causality test has been realized with VAR model. Series stability is provided before the test and lag length has been determined. Series' being in I(0) or I (1) process during the test is important. As the used time series are not all in I (1) process, Co- Integration test used to determine the long term relation between the variables has not been applied. Primary differences are used in order to make the series constant. The results of the Granger (1969) causality test realized with VAR model are shown on Table 4.

3.3 Granger Causality Test Results

In order to determine the direction of the causality between FDIs and chosen macroeconomic variables, the break years obtained by the results of Zivot – Andrews unit root with break are used and the granger causality test is applied using the dummy variables created according to these years and the series' first differences. Causality direction of regression's shown below has been determined using dummy variable

$$y_t = \mu + \theta DU_t + \beta t + \gamma DT_t + \alpha y_{t-1} + \sum_{j=1}^k c \Delta y_{t-j} + e_t \quad (1)$$

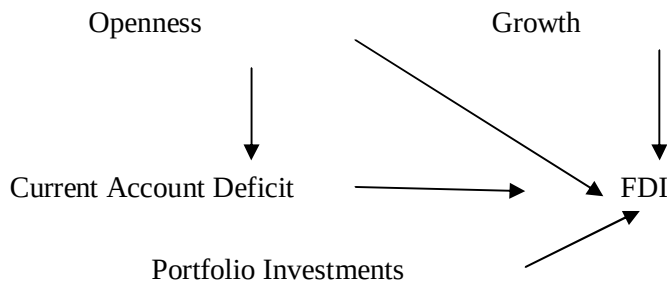
DU and DT are dummy variables, the causality test is applied over these variables. Because all the results of Zivot – Andrews test results for all variants are I(0) and Granger causality test is applied after removing the diffraction using the dummy variable. The dummy variables are taken as "0" prior to the break year and as "1" after the break year. Causality results are illustrated in Table 4 (Altınay and Karagöl, 2005).

Table 4. Results of the Granger Causality Test Results Considering the Break Years

Sample : 1986 – 2010	(Lags : 1)	
H0 Hypothesis:	Chi-square Value	Probability
Real in come per capita does not Granger Cause FDI	10.924	0.0137
FDI does not Granger Cause Real income per capita	0.182901	0.5558
FDI does not Granger Cause Portfolio investments	1.4819	0.2235
Portfolio investments does not Granger Cause FDI	10.13219	0.0015
Current Account Balance does not Granger Cause FDI	5.568763	0.0183
FDI does not Granger Cause current account balance	0.131388	0.7170
Openness does not Granger Cause FDI	4.064310	0.0438
FDI does not Granger Cause Openness	0.039517	0.8424

Table 4 Illustrates the results of Granger causality test with dummy variable created by considering Zivot – Andrews structural break years. Causality results are observed to be correlated with the causality analysis results that had been executed without including the breaks. We briefly illustrate the significant relationships in Figure 1.

Figure 1. The Relationship between the FDI and Macroeconomic Variables



4. CONCLUSION

In conclusion, a causality relation from the variables towards their FDI has been found. Accordingly, Turkey passed through a fast openness period following the 24 January 1980 decisions. At the end of this period, deterioration in the current account balance has occurred and financing needs have emerged. This needs has been tried to be satisfied with portfolio investments and FDIs. The result of the causality relationships between the variables gives the idea that Turkey is a country with potential of growth along with the openness. **However, openness means more funding need and this is mainly met with portfolio investments.** Portfolio investments, due to their properties, the ones that leave the country rapidly in case of economic problems. Thus, it creates a negative economic outlook and creates an effect that increases the count risk. But the FDIs are known as the high quality funding of the current account deficit due to their property of hardly leaving the country. For this reason, it can be concluded that, in order to accelerate the economical growth, Turkey has to use FDI for the funding of the current account deficit in addition to continuing the openness policies. The main objective is this paper is that to examine the role of FDI on the compensation of trade deficit. We suggest that our question deserves an empirical research, due to the importance of explaining the main difficulties in Turkey to increase the exports, when there is also a simultaneous increase in the imports.

Indeed, the Turkish economy is highly dependent on the import demand. Thus, any increase in the exports reflects to the volume of imports. In other words, the growth of the exports should create new investment opportunities, instead of increasing the volume of intermediate goods import. As a result, the Turkish economy should adopt economic policies, which can reduce its dependence on the import demand.

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