

## Foreign Direct Investments, Trade Policies, and Economic Growth in Turkey: An ARDL Analysis

### Doğrudan yabancı yatırımları, ticaret politikaları ve Türkiye'de ekonomik büyüme: ARDL analizi

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#### Abstract

Turkish economy experienced a steady growth under a single party administration for the period of 2002 and 2019. An attractive geographical location, a young population, easing of trade barriers, an export lead growth strategy, and political stability attracted large sums of foreign direct investment (FDI) to Turkey during this period. FDI both complements the domestic private investments and makes a rapid technology transfer possible and, hence, stimulates economic development further. This paper aims at exploring impact the FDI and trade openness on the Turkish economy. This study uses the Autoregressive Distributed Lag (ARDL) method to investigate the relationship among real GDP and employment, capital formation, FDI, and trade openness. ARDL analysis results show some evidence of a positive and statistically meaningful effect of employment, FDI, and trade openness on the economic development in Turkey. These results confirm that employment, FDI and trade openness are key factors in economic growth and development for Turkey. Therefore, Turkey should reduce barriers to trade and encourage inflow of FDI in order to finance economic growth and keep up with the technological advancements.

**Keywords:** FDI, Economic Development, Trade Policy, International Investment

**JEL codes:** O11, O24, F21

#### Öz

Türkiye ekonomisi 2002 ve 2019 döneminde tek parti yönetimi altında istikrarlı bir büyüme yaşadı. Çekici bir coğrafi konum, genç bir nüfus, ticaret engellerini hafifletilmesi, ihracata dayalı büyüme stratejisi ve siyasi istikrar, bu dönemde büyük miktarda doğrudan yabancı yatırımın (DYY) Türkiye'ye gelmesini sağladı. DYY hem yerel özel yatırımları tamamlamakta hem de hızlı teknoloji transferini mümkün hale getirmektedir ve dolayısıyla ekonomik kalkınmayı daha da teşvik etmektedir. Bu çalışma DYY'nin ve ticarete açık olmanın Türkiye ekonomisi üzerindeki etkilerini araştırmayı amaçlamaktadır. Bu çalışmada, reel GSYİH ile istihdam, sermaye oluşumu, DYY ve ticarete açık olmak arasındaki ilişkiyi araştırmak için Otoregresif Dağıtılmış Gecikme (Autoregressive Distributed Lag-ARDL) yöntemi kullanılmıştır. ARDL analiz sonuçları, istihdamın, doğrudan yabancı yatırımların ve ticarete açık olmanın Türkiye'deki ekonomik kalkınma üzerinde olumlu ve istatistiksel olarak anlamlı bir etkisinin var olduğunu göstermektedir. Bu sonuçlar, istihdam, DYY ve ticarete açık olmanın Türkiye için ekonomik büyüme ve kalkınmada kilit faktörlerden olduklarını doğrulamaktadır. Bu nedenle Türkiye, ekonomik büyümeyi finanse etmek ve teknolojik gelişmelere ayak uydurmak için ticaretin önündeki engelleri azaltmalı ve DYY girişini teşvik etmelidir.

**Anahtar kelimeler:** Doğrudan Yabancı Yatırımları, Ekonomik Kalkınma, Ticaret Politikası

**JEL kodları:** O11, O24, F21

## 1. INTRODUCTION

With growing globalization, the multinational corporations (MNCs) started to open overseas subsidiaries and built factories in order to accelerate their expansion into new markets. The motivation of many foreign investors is access to cheap labor and raw material and less legal restrictions (Fotopoulos & Louri, 2004). However, while taking advantage of higher profit opportunities, foreign investors transfer their intangible assets like technical knowledge, know-how to the host countries in order to offer their products or services as they do in their home countries. Therefore, new technologies are introduced in the host countries.

FDI brings dynamism with necessary financial resources and know-how for economic development and technological innovation to the host countries. FDI not only provide financing the private investment, but also have macroeconomic benefits through multiplier effect to stimulate the economy. FDI also provides a momentum for the technological improvement through technology transfers in the host countries.

FDI provides the most needed financial resources to the host country. The difference from portfolio investments is that the FDI entering the country cannot leave the country easily. Some of these investments used in infrastructure and physical structures and permanently located in the host country and create additional economic activities through multiplier effects (Dunning, 2002).

FDI provides new technologies to the host country. When the foreign investors enter a new market, they take their own technology and know-how to the host country. The local consumers benefit from accessing technologically more advanced products and the general level of technical knowledge in the country also increases. The proliferation of new technologies in the market enables new domestic companies to learn about new ways to manufacture some products. Technology transfer takes place through domestic employees working for the foreign companies and the circulation of products in the market over the years (Alfaro et. al., 2003). Later, this knowledge spillover provides opportunities for local firms to produce some products with new technologies or methods.

FDI helps also to solve some of the economic problems, by reducing unemployment, and increasing productivity, and foreign currency holdings, due to increase in exports, in the host country. Reduction in unemployment leads to an increase in income and the standard of living. Increasing productivity enables better use of country resources and directing resources to other areas (Weigel & Wagle, 1997). Increased exports improve macroeconomic indicators, such as GDP and the balance of payments.

Mottaleb and Kalirajan (2010) argue that FDI is of vital importance for developing countries to close the current account deficit, reduce unemployment and increase foreign currency holdings. Therefore, most developing countries compete with each other to attract FDI by using tax breaks, legal flexibility and other incentives. According to a report by United Nations Conference on Trade and Development (UNCTAD), 76 countries made 151 legal amendments to FDI legislature in 1997. About 89% of this is changes intended to make it easier for foreign investors to come to their countries. (UNCTAD, 1998),

Factors such as the population and growth rate of the gross domestic product per capita, the political and commercial relations between the investing and host countries, and the extent

to which the country receiving the investment is open to international markets are important in determining where to direct financial funds (Blonigen, 2005). Factors such as cheap labor is an important factor for the investors, the size of the local market, however, is more important for many investors along with trade openness and economic size.

FDI is made to obtain the benefits that the investors or institutions cannot achieve in their own country. Reducing costs is one of objectives in investing overseas. Companies can use certain locations as a hub to stay close to raw materials and reduce shipping costs to serve not only the host country but all neighboring countries and regions as well (Dunning, 2002). For example, Japanese noodle company Nissin has opened a branch in Turkey to reduce transportation costs in its exports to the Middle East, Eastern Europe, and North Africa.

It is also possible to see certain benefits of FDI for the investor country. Although there is an outflow of money to another country, if the investor country has a developed economy, this situation will benefit the economy of the country in question, as opposed to causing economic difficulties. The reason for this is that the money that will remain idle in the country and that will not yield desired returns. The country's foreign exports are likely to increase, increasing the economic activity in the domestic market, the production and demand will increase and unemployment will be reduced. All these developments will likely improve all macroeconomic indicators (Dunning, 2002).

The investor country also has an international network and can easily benefit from this network in international relations. It may have a say, especially in countries where it invests in political decisions. In this way, it not only gains material benefits, but also gains intangible benefits.

In Turkey, FDI inflows have started during the Ottoman period (Bayraktar, 2003). While Western European countries have been increasingly industrializing and developing their economies, the Ottoman economy was lacking behind and was dependent on Western European countries in terms of financial resources and products and services in the 19th century. Initial investments were mostly in infrastructure, such as railway and water and electricity. As the Ottoman sovereign debts increased, more of the foreign financial resources were directed to the banking sector (Geyikdağı, 2011).

The importance of FDI has been better understood in the last 40 years in Turkey. The government, however, tried harder to attract more foreign investors to accelerate the economic growth after a troublesome period with political and economic instability in the 1990's. A single party government brought in political stability and made some policy reforms to attract the foreign investments. Turkey has received a total of 15 billion dollars between 1973 and 2002 and almost 200 billion dollars of FDI between 2003 to 2019 (T.C. Cumhurbaşkanlığı Yatırım Ofisi, 2019).

Turkish economy, however, has been experiencing a very difficult time since 2014, with low economic growth rates accompanied by high inflation, and a slowdown inflow of foreign investments. FDI has also been on a declining trend. Therefore, it is important to see if the FDI and trade openness play a role in economic activities. Earlier studies mostly researched the spillover effect of the FDI on the host country. This study analyzes the empirical relation

between FDI, trade openness, and overall economic growth in Turkey for the 1991-2018 period.

The next section of the study will be summarizing of the existing studies related to effect of FDI, trade policies on economic growth, followed by sections for methodology and data, empirical results and conclusion.

## **2. LITERATURE REVIEW**

FDI has been seen a controversial subject for the researchers. Academic research on FDIs show differing results regarding FDIs effect on a country's economic development. Some studies use the Granger causality tests and the seemingly unrelated regressions (SUR) analysis. Some studies find that FDI and international trade stimulate economic growth. Some other studies, however, attribute this relationship to some other factors, such as appropriate policies and other economic drivers. In addition, there are some studies find no impact of FDI on economic growth or an inverse relationship between FDI and economic growth.

Academic studies on FDI has started around 1980's, as financial resources started to move beyond national borders due to changes to regulations, allowing foreign funds flow into many countries. Technological changes also played an important role. Electronic Data Interchange (EDI) made easier to transfer funds to other countries, which have better investment opportunities to earn higher profit.

When we look at the current literature, it is seen that there is a positive relationship between foreign direct investments and economic growth. There are even publications claiming to have more positive externalities than domestic investments (Borensztein, Lee, & De Grigorio, 1998). Foreign direct investments affect the countries in which investment is made, in five ways: technology transfer, encouraging and increasing competition, development of human capital, integration of the economy into the world economy and forcing firms to develop, according to the publications that have a positive view. Borensztein et. al. (1998) used the data for a group of developing countries for a period of 20 years in the Seemingly Unrelated Regressions Model (SUR). They concluded that FDI stimulates economic growth in the host countries. Choe (2003) used Granger Causality Test for 24-year (1971-1995) data for 80 advanced and developing countries. His results show some evidence that FDI has a positive and statistically significant effect on economic growth. Bibi et. al. (2014) investigated the role of trade openness, inflation, imports, exports, real exchange rate and FDI for economic growth in Pakistan for the period of 1980 to 2011. Their results suggest that there is some evidence of existence of a long-run relationship among the variables. They conclude that FDI and trade openness may contribute to economic growth.

Bengoa and Sanchez-Robles (2002) used data for 18 Latin America countries for a panel data analysis. Their results show that FDI contributes to economic development but only if there is enough human capital and economic freedom. OECD study (2002) also found that FDI contributes to the host countries' economies if the host countries have some level of development and choose to implement the required policies. De Mello (1999) used panel data analysis for some OECD and non-OECD countries for a period of 20-years. His results suggest that FDI's effect on economic growth is small but statistically significant. Khaliq and

Noy (2007) study found that while FDI stimulates overall economic activity, there is some evidence of an inverse relationship between FDI and total output of mining and quarrying sectors.

Mwakanemela (2014) studied the relationship between manufacturing exports performance and FDI, trade openness, and inflation rate in Tanzania for the years 1980 to 2012. His results show that FDI inflows and trade openness increases manufacturing exports. Inflation rate, however, is inversely related to manufacturing exports. He suggests that Tanzania should support FDI, trade openness, export-led polices and keep inflation rate under control to increase exports of manufactured products. Smarzynska (2002) argued that FDI has an accelerating power for the development and transfer of a technology in the host country. Carkovic & Levine (2002), however, argue that FDI increases makes it more difficult for domestic companies to compete the host country and may reduce their profits in many industries. Eaton and Kortum (1996) study suggest that most of the technological knowledge comes from three OECD countries, Germany, the USA and Japan. Brecher et al. (1996) study for the USA and Canada suggest that in a two-country trade case technological development levels converge in the long-run.

Although mostly positive effects of FDI are highlighted in academic research, there are also studies claiming to have negative effects on foreign direct investments (Margeirsson, 2015). According to these studies, foreign direct investments can prevent the implementation of economic policies in countries and increase the amount of imports, thereby creating a negative impact in the country. From this point of view, it is difficult for countries with low human capital to expect to develop their economies by attracting only foreign investors.

There is also some evidence that changes in exchange rates affect the flow of FDI. Albert G.Z. Hu and Gary H. Jefferson (2002) studied how FDI affect the local producers in the host country. Focusing on the electronics and textile sectors in China, they found that the local companies in these sectors developed more rapidly with the presence of the FDI. The research also suggest that these companies may grow so rapidly with new know-how transfer that they can push the FDI companies out of the sector. A study by Markusen and Venables (1997) shows similar results that FDI supports industrial development in the host countries, but in some cases, domestic companies flourish, and in time, may push the international companies out. Omankhanlen (2011) analyzed the impact of exchange rate changes and inflation on FDI and economic growth in Nigeria for a period of thirty years. His results suggest that economic growth with liberal trade policies in some industries stimulate the inflow of FDI to Nigeria.

### **3. DATA AND ECONOMETRIC METHODOLOGY**

The research method was explained in this part. This part explains the details such as model and analysis methods, population and sample, data collection tools created for the research.

#### **3.1. The model**

ARDL and panel data analysis were used among the research techniques in this research which analyzes the effect of FDI and trade openness on the economy. ARDL analyses whether there is cointegration in the relation between at least two variable series (Nkoro & Uko, 2016).

### 3.2. Population and Sample

This study examines the impact of employment, FDI and trade openness on the Turkish economy for the period of 1991 to 2018.

**Table 1:** Data Used in the ARDL Analysis

Variables	Descriptions
Gross Domestic Product (US Dollars)	Monetary value of all the services provided and all the goods produced in a country in a year
Capital (million US Dollars)	Gross capital formation
Employment (thousand persons)	The number of people employed in a country
FDI Inflow (million US Dollars)	Inward net FDI to a country
Industrial Production	Total industrial production
Trade Openness	An index (the ratio of total amount of exports and imports to the GDP)

### 3.3. Econometric Methodology

Annual time series from The World Bank Catalogue, World Development Indicators were used for Turkey from 1991 to 2018. This study examines the causality among real output (GDP, constant 2010 US\$), foreign direct investment (FDI, constant 2010 US\$), trade openness (TO), employment in industry (Emp), capital formation (Cap, constant 2010 US\$), total industrial output (Ind). All variables are expressed in first differences. The model can be illustrated as follows:

$$GDP = \beta_0 + \beta_1 Emp + \beta_2 FDI + \beta_3 TO + \varepsilon_t \quad (1)$$

$\varepsilon_t$  is random error term.

The econometric methodology used in the study is derived from the ARDL model, which is introduced by Pesaran et al. (2001). The generalized ARDL (p, q) model is specified as follows:

$$y_{it} = \sum_{j=1}^p \delta_{ij} y_{i,t-j} + \sum_{j=0}^q \beta_{ij} X_{i,t-j} + \varphi_i + e_{it} \quad (2)$$

Where  $y_{it}$  is the dependent variable,  $(X_{it})$  is a  $k \times 1$  vector that are allowed to be purely  $I(0)$  or  $I(1)$  or cointegrated;  $\delta_{ij}$  is the coefficient of the lagged dependent variable called scalars;  $\beta_{ij}$  are  $k \times 1$  coefficient vector;  $\varphi_i$  is the unit-specific fixed effects;  $i = 1, \dots, N$ ;  $t = 1, 2, \dots, T$ ;  $p, q$  are optimal lag orders;  $e_{it}$  is the error term.

### 3.4. Estimation Results

As a first step, we test the stationarity of all the variables by using Dickey-Fuller and Phillips-Perron tests. Pesaran et al. (2001) suggest that ARDL model is acceptable when the variables are  $I(0)$  or  $I(1)$ .

#### 3.4.1 Unit root test results

Stationarity of the time series was analyzed by Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests (Dickey and Fuller, 1979 and Perron, 1990). Hypotheses are established in the ADF and PP unit root tests for stationarity analysis of series as follows:

H<sub>0</sub>:  $\delta = 0$  The unit does not contain roots; the series is stationary.

H<sub>1</sub>:  $\delta \neq 0$  Unit contains root; series is nonstationary.

As seen in Table 2 and Table 3, ADF and PP unit root test results revealed that all series of the variables are stationary in levels,  $I(0)$ . However, the first differences,  $I(1)$ , for all series are stationary. These results show that the data can be analyzed by using ARDL method.

**Table 2.** Results of the Dickey-Fuller Unit Root Tests

Series	Level	First Differences	Results
GDP	2,431 (0,9990)	-3,914 (0,0019)*	I(1)
Capital	-0,249 (0,9324)	-5,911 (0,0000)*	I(1)
Employment	1,676 (0,9981)	-3,943 (0,0017)*	I(1)
FDI	-1,427 (0,5693)	-5,911 (0,0000)*	I(1)
Trade Openness	-2,770 (0,0627)	-4,511 (0,0002)*	I(1)
Industrial Output	1,563 (0,9977)	-3,987 (0,0015)*	I(1)

Note: The  $p$ -values are in parenthesis.

\*Significant at the 1% level.

**Table 3.** Results of the Phillips-Perron (PP) Unit Root Tests

Series	Level	First Differences	Results
GDP	1,0506 (0,9991)	-20,682 (0,0018)*	I(1)
Capital	-0,113 (0,9519)	-31,061 (0,0000)*	I(1)
Employment	2,109 (0,9975)	-20,219 (0,0017)*	I(1)
FDI	-4,633 (0,5585)	-22,203 (0,0002)*	I(1)
Trade Openness	-2,849 (0,0425)**	-25,496 (0,0002)*	I(1)
Industrial Output	1,298 (0,9979)	-20,551 (0,0016)*	I(1)

Note: The  $p$ -values are in parenthesis.

\*Significant at the 1% level.

\*\*Significant at the 5% level.

We can reject the hypothesis for the first differences of the variables "H<sub>0</sub>: There is unit root," in other words, the first differences for these variables are not stationary.

### 3.4.2. ARDL analysis results

The estimation results of the ARDL analysis were shown in Table 4 below. The results show employment, trade openness and FDI appeared significant at the 1% level and have short run effects on GDP in Turkey.

Table 4 shows that independent variables, changes in employment, FDI, and trade openness all have positive and statistically significant effect on GDP growth in the short-run. According to these results each additional employee will bring about \$17,58 worth change in GDP, \$1 increase will correspond to \$3,48 change in GDP and 1% increase in trade openness ratio will increase GDP by \$11,4 billion.

**Table 4:** FDI, Trade Openness, Employment and GDP

Variable	Coefficient	Std. Error	t-Stat.	Probability
dGDP(-1)	0,2242	0,1589	1,41	0,189
dGDP(-2)	0,3963	0,1103	3,59	0,005
dGDP(-3)	0,1969	0,1451	1,36	0,205
dGDP(-4)	-0,5769	0,1645	-3,51	0,006
dEmp	17,5716	4,6542	3,78	0,004
dFDI	3,4799	0,6169	5,64	0,000
dFDI(-1)	-2,3058	0,8634	-2,67	0,023
dTO	1,14E+10	1,54E+09	7,39	0,000
dTO(-1)	-8,56E+09	2,34E+09	-3,65	0,004
dTO(-2)	-2,28E+09	1,84E+09	-1,24	0,243
dTO(-3)	-6,77E+09	2,08E+09	-3,26	0,009
dTO(-4)	4,62E+09	2,62E+09	1,76	0,108
cons	1,98E+10	8,14E+09	2,44	0,035
F-Statistic	15,81			
R <sup>2</sup>	0,9499			

#### 4. CONCLUSION

Starting from founding of Turkish Republic, FDI and multinational corporations have been a controversial issue because of the capitulations given to some foreign countries and their long-time damage to the Ottoman Empire. In early 1980's, Turkish authorities started to change regulations to allow inflow of FDI once they realized its importance on economic development. With political stability starting in 2002, reforms made it possible for Turkey to receive a considerable amount of FDI in many manufacturing sectors, including the automotive sector. The automotive sector output, exports has increased and the foreign exchange inflow into Turkey has also increased.

The literature analysis of FDIs give various opinions about how FDIs effect a country's economy and growth. Most of the research papers focus on whether countries really enjoy the benefits of FDIs or not with different approaches like Granger causality tests and SUR analysis. Some papers found a positive relationship between FDI, trade openness and economic growth. Moreover, some papers attribute this relationship to some factors such as appropriate policies and current level of development. However, there are some studies that find a negative effect of FDI on economic growth.

This study aimed to estimate the impact of employment, FDI, and trade openness on economic growth of Turkey empirically by using ARDL analysis. The ARDL analysis show that in the shorth run there is some evidence that employment, FDI, and trade openness each have a positive and statistically significant impact on economic growth in Turkey. Therefore, Turkey should reduce barriers to trade and encourage inflow of FDI in order to finance economic growth and keep up with the technological advancements.

This fact is supported by a qualitative analysis of the Turkish industry and economy. FDI helped accelerate economic growth in Turkey for the period between 2002 and 2014. Turkey benefited from FDI in terms of closing trade deficit with increased exports and receiving foreign loans with high interest rates. Moreover, entry of FDIs, bring in technological know-how, create employment opportunities, and increases the confidence of international



investors in Turkish economy. These, in turn, enable Turkish companies to access international loans easily and at lower interest rates. However, FDI has been on a declining trend during low economic growth accompanied by high inflation rates since 2014. Therefore, we assume FDI is one of the reasons for the decline in economic activities.

Academic studies on the impact of FDI have differing conclusions. Even if we side with the studies that argue an existence of a positive effect on economic development and growth, similar to what we have found in this study, this may not be the case in every country and at every stage of development. The impact of FDI on individual sectors may also be different from each other and the overall economy.

An extension of this study may analyze where the FDI is directed in Turkey and if FDI contributes to those sectors' output, employment, and productivity and if this sector-specific FDI contributes overall economic development and growth in Turkey. The automotive, textile, other manufacturing sectors might be analyzed since they enjoyed inflow of FDI, and experienced increased productivity, output, exports, and technological know-how. Identifying the sectors that benefit from FDI the most might help the government channel foreign investors to these sectors to yield the most economic benefits.

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