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FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH IN TURKEY

TÜRKİYE'DE DOĞRUDAN YABANCI YATIRIM VE EKONOMİK BÜYÜME

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ABSTRACT

Foreign Direct Investment (FDI) has been considered as an important active driver of the economic growth for the host country, notably for the emerging ones. Although large research studies have investigated the determinants of FDI, governance indicators still not highly covered as some experts considered that quantifying such factors is not evident. This paper consists in examining the relationship between the economic growth and FDI in Turkey (1984-2017) with including aggregate variables that present two pillars of Governance Indicators: 'control of corruption' and 'rule of law'. The results showed that the FDI is not crucial for the economic growth in Turkey, there is a positive relationship but there is no causality between FDI and the Turkish economic growth. Also, control of corruption and rule of law don't have significant impact on the growth in Turkey.

Keywords: *Foreign Direct Investment, Economic Growth, Granger Causality, VAR Model.*

Jel Codes: *O47, O11, E60.*

ÖZ

Doğrudan Yabancı Yatırım (DYY), başta gelişmekte olan ülkeler olmak üzere, ev sahibi ülke için ekonomik büyümenin önemli bir aktif itici gücü olarak kabul edilmektedir. Çoğu araştırma, doğrudan yabancı yatırımların göstergelerini incelemiş olsa da, bazı faktörlerin belirlenmesinin açık olmadığı kanaatine varılan yönetişim göstergeleri hala yüksek oranda ele alınmamıştır. Bu makale, Türkiye'deki ekonomik büyüme ile DYY arasındaki ilişkiyi inceleyerek (1984-2017), Yönetişim Göstergelerinin iki ayağını temsil eden 'yolsuzluğun kontrolü' ve 'hukukun rolü' değişkenlerini dahil etmeyi amaçlamaktadır. Sonuçlar, DYY'nin Türkiye'deki ekonomik büyüme için çok önemli olmadığını göstermektedir. Ancak DYY ile Türkiye'deki ekonomik büyüme arasında bir nedensellik yoktur. Ayrıca yolsuzluğun kontrolü ve hukukun rolü değişkenleri de Türkiye'deki ekonomik büyüme üzerinde önemli bir etkiye sahip değildir.

Anahtar Kelimeler: *Doğrudan Yabancı Yatırım, Ekonomik Büyüme, Granger Nedensellik, VAR Modeli.*

Jel Kodları: *O47, O11, E60.*

1. INTRODUCTION AND THEORETICAL FRAMEWORK

The globalization movements, notably in the last three decades, has significantly impacted the economic field via annulling the international economic boundaries and increasing the capitals mobility among countries. Generally, underdeveloped and

developing countries cannot assure the economic development only with the internal capitals as the developed countries. Thereby, Foreign Direct Investment, known as FDI, has become one of the main methods of capitals mobility and cross-border investment and furthermore one of the most active drivers of economic growth for the host country (Kahveci & Terzi, 2017; Yalman & Koşaroğlu, 2017; among others).

In fact, FDI is defined as the direct investment equity flows into an economy. It is the sum of equity capital, reinvestment of earnings, and other capital. Direct investment is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy. Ownership of 10 percent or more of the ordinary shares of voting stock is the criterion for determining the existence of a direct investment relationship (IMF, 2003). FDI was addressed as an assembly of capital, technology, management, and entrepreneurship that facilitate the operation of a company in a non-local market (Farrell, 2008).

Several developing countries provide facilities and implement incentive policies to maintain the international trade and to increase the volume of the foreign investments. Different factors which impact FDI have been largely investigated, such as the country stability and the cost and the quality of the workforce, recently the governance indicators have been examined as factors which may encourage the FDI or discourage it. Vijayakumar et al. (2010) examined the determinants of FDI in BRICS countries through a panel analysis. They concluded that market size, labour cost, infrastructure, currency value and gross capital formation, define the potential determinants of FDI inflows of BRICS countries. However, they found out that the economic stability and growth prospects (measured by inflation rate and industrial production respectively), trade openness (measured by the ratio of total trade to Gross Domestic Product (GDP)) seem to be insignificant determinant of FDI inflows of the BRICS countries. Different studies have discussed the political risk presented by the wars and the political system changes as factors which impact the FDI (McKellar, 2010 among others). Other research studies showed that the governance indicators (for example corruption and rule of law) are also political risk factors that affect negatively the FDI (Amal et al., 2010, Freckleton et al., 2012; Osabutey & Okoro, 2015).

Various papers have examined the FDI contribution to the economic growth of the host country. Indeed, Roy & Berg (2006) and Almfrajia & Almsafir (2013) showed that FDI contributes directly and indirectly to the economic growth of the host countries by easing the transfer of technological and business know-how (Romer, 1993), improving the labour training, skill acquisition and diffusion, and the introduction of new managerial practices and organizational arrangements (De Mello, 1999). Solomon (2011) underlined the existence of a significant relationship between inward FDI and growth. Choe (2003) demonstrated that FDI Granger causes economic growth.

Some research studies showed the possibility of positive impact of FDI on economic growth through some mechanisms such as technology upgrading progress, human capital, absorptive capacity of the host country, and trade policy adopted by the host country (Bosworth & Collins, 1999; Durham, 2004; Li & Liu, 2004; Khawar, 2005; Le & Suruga, 2005; Roy & Von Den Berg, 2006; Ayaydin, 2010; Yilmaz et al., 2011; Chowdhary & Kushwaha, 2013; Zekarias, 2016 among others). However, other studies showed that FDI have negative effects on long-term investments on economic growth (Carkovic & Levine, 2002; Lensink & Morrisey, 2006; Sarkar, 2007). Hirst & Thompson (1994) found out that FDI poses critical problems specially for governance.

Patnaik (1999) claimed that FDI causes an implied form of deindustrialisation and doesn't directly improve the productive

capacity. Chang (2004) argued that the multilateral investment agreement proposed by the World Trade Organisation may harm the developing countries' scenarios for development.

In 2017, according to EY Attractiveness Survey Europe, Turkey was classified as the 7th most popular FDI destination in Europe. Different studies have examined the relationship between FDI and the Turkish economic growth. Katircioglu (2009) investigated empirically the level of relationship and the direction of causality between net FDI and economic growth in Turkey by using the bounds test for co-integration and Granger causality tests, the results showed that these two variables are only co-integrated when net FDI inflows are dependent variable in the ARDL model. Yalman & Koşaroğlu (2017) examined the effect of the FDI on the economic growth and unemployment in Turkey in the period 1988-2016, their results revealed that FDI has not a causality relationship with national income and unemployment.

Hence, to further investigate the relationship between economic growth and FDI in Turkey, this research paper concentrated on analysing empirically this relationship via a Vector Autoregressive Model (VAR). Model that defines the economic growth as a dependent variable and mainly FDI with two governance indicator (control of corruption and rule of law) as independent variables.

The rest of the paper is divided into 5 sections. Section two discusses the FDI framework in Turkey. Section three outlines the research methodology and the dataset. Section four presents the results and summarize the findings. The last section is devoted to the conclusion.

2. FRAMEWORK FOR FDI IN TURKEY

Some basic indicators related to Turkey will be presented in the following table (Table 1).

Table 1: Basic information related to Turkey

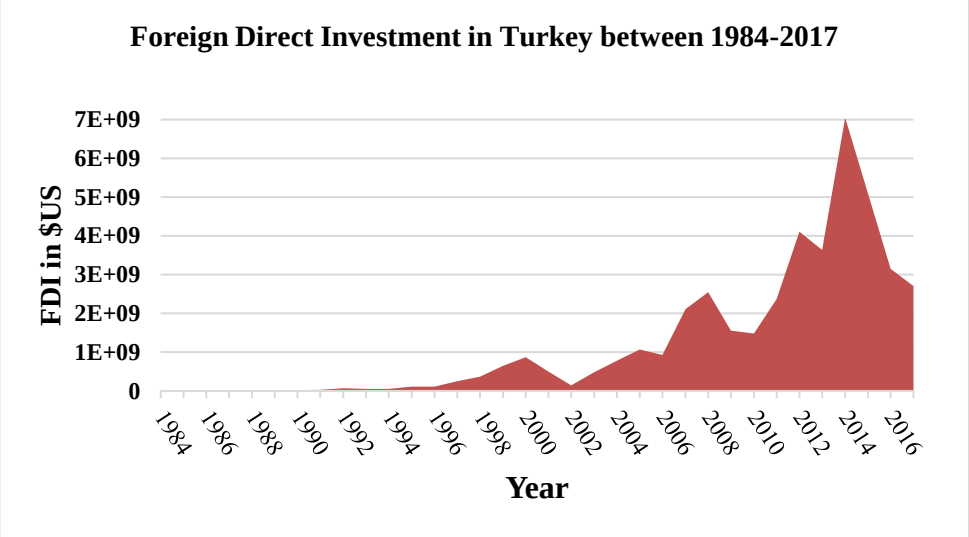
Major indicators, 2018	
Population	82 million
Employment rate (%)	46.3
Unemployment rate (%)	12.7
Gross National Product GNP (Billion USD)	754.813
Gross Domestic Product (GDP) (Billion USD)	766.51
GDP by Sectoral structure, Second quarter of 2019	
Agriculture (TRY THO)	17848921.00
Construction (TRY THO)	29287888.30
Manufacturing (TRY THO)	70922402.50
Services (TRY THO)	99589464.40
Public Administration (TRY THO)	46799195.63
Growth rate	
GDP Growth rate (%), 2018	2.3
Gross National Product (GNP) (Billion USD), 2018	854.31
Trade in goods and services growth rate (Second quarter of 2019) in (Billion USD)	
Exports	12.52
Imports	15.02

Source: Own elaboration, data retrieved from (TUIK, 2018)

Table 1 shows that the unemployment rate increased comparably to 2017 (in 2017, the unemployment rate was approximately 10%). GDP related to the services sector is

the highest in 2018. It should be noted also that the GDP growth rate decreased from 2017 (in 2017, the GDP growth rate was 7,4%) and surprisingly GDP growth reached negative value in the first two quarters of 2019. The following figure shows the change of FDI in Turkey in the period 1984-2017.

Figure 1: Foreign direct Investment in Turkey

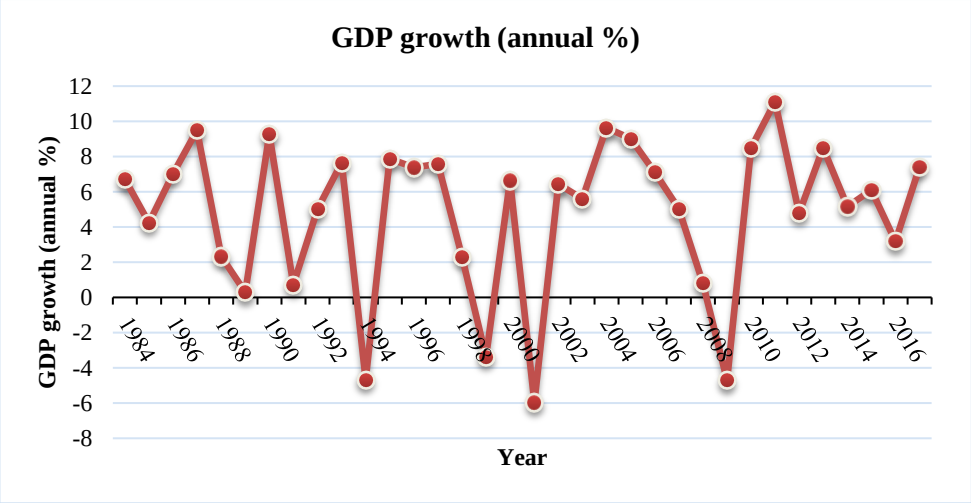


Source: Own elaboration, data retrieved from (World bank, 2018)

FDI volume increased starting from 1999 attending the maximum value in 2014 and decreased in 2002 by 78%. Between 2003-2013, it had ups and downs due to different economic and political reasons.

Figure 2. shows the changes of GDP growth from 1984 to 2017. GDP growth has mean value 4.8%, the maximum value reached 11.11% in 2011 and minimum -5.96% in 2001.

Figure 2: GDP growth (annual %)



Source: Own elaboration, data retrieved from (World bank, 2018)

3. DATA AND METHODOLOGY

This section concentrates on presenting the dataset and the methodology to be followed.

3.1. Data

The dataset of this research covers the period 1984-2017 when data is available. The list of variables, that found in the literature as impacting FDI, is listed in Table 2. Based on the stepwise technic, not all the defined variables in Table 2 will be considered in the estimation of VAR model.

Table 2: The list of variables

Variable	Abbreviation	Description
GDP growth (annual %)	GDPG	Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2010 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. (World Bank national accounts data, and OECD National Accounts data files)
Rule of Law	RLAW	Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Variable was retrieved from Indicators (WGI) website.
Control of Corruption	CCORRP	Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Variable was retrieved from Indicators (WGI) website.
Life expectancy	LEXP	Life expectancy at birth is defined as how long, on average, a newborn can expect to live, if current death rates do not change. (OECD, 2018)
Labour force with basic education	LBFBE	Labor force with basic education (% of total working-age population with intermediate education). Data retrieved from World Development Indicators.
Literacy rate youth	LITR	Adult literacy rate is the percentage of people ages 15 and above who can both read and write with understanding a short simple statement about their everyday life. Data retrieved from World Development Indicators.
Labour force with intermediate education	LBFIN	Labor force with intermediate education (% of total working-age population with intermediate education). Data retrieved from World Development Indicators.
Labour force with advanced education	LBFAD	Labour force with basic education (% of total working-age population with advanced education). Data retrieved from World Development Indicators.

Variable	Abbreviation	Description
Foreign direct investment (BoP, current US$)	FDI	Foreign direct investment refers to direct investment equity flows in an economy. It is the sum of equity capital, reinvestment of earnings, and other capital. Ownership of 10 percent or more of the ordinary shares of voting stock is the criterion for determining the existence of a direct investment relationship. Data retrieved from World bank website.
Inflation rate	INF	Inflation measured by consumer price index (CPI) is defined as the change in the prices of a basket of goods and services that are typically purchased by specific groups of households. (OECD, 2018)

3.2. Methodology

The methodology section consists in providing a general overview about Vector Autoregressive model (VAR) and Granger causality.

3.3. VAR

The statistical analysis is carried out in the context of Vector Autoregressive Model (VAR). VAR Model is especially useful for describing the dynamic behavior of economic and financial time series and for forecasting.

VAR models have the advantage over traditional large-scale macroeconometric models in that the results are not hidden by a large and complicated structure (the "black box"). The results are easily interpreted and available using VAR. Sims (1980) argued that VARs provide a more systematic approach to imposing restrictions and could lead one to capture empirical regularities which remain hidden to standard procedures.

The results from policy exercises on large scale macreconometric models are hard to compare and recreate and can easily be amended by their users with judgmental ex-post decisions. Finally, the lack of consensus about the appropriate structural model to use has led several economists instead to favour the use of a VAR model to examine the effects of different policies (Bjørnland, 2000).

The VAR is often perceived as an alternative to the simultaneous equation method. It is a systems regression model in that there is more than one dependent variable. In the most basic bivariate example, where there are just two variables, then each of their current values will depend on combinations of the previous values of variables and error terms.

$$\begin{aligned} y_t &= \alpha_0 + \alpha_1 x_{t-1} + \beta_1 y_{t-1} ..... + \alpha_k x_{t-k} + \beta_k y_{t-k} + u_t \\ x_t &= \chi_0 + \chi_1 x_{t-1} + \delta_1 y_{t-1} ..... + \chi_k x_{t-k} + \delta_k y_{t-k} + v_t \end{aligned} \quad (1)$$

The number of lags included in the VAR depends on either the data (i.e. monthly data would require 12 lags) or the minimization of the Akaike or Schwarz-Bayesian criteria (maximizing in some textbooks depending on how the criteria is set up). In addition, it is assumed that the error term is not serially correlated. The system can be expanded to include any number of variables and is used extensively in the finance literature.

VAR models have several advantages over univariate time series models, for instance there is no need to specify which variables are exogenous and which endogenous, variables are endogenous. (However, it is possible to specify a purely exogenous

variable as a regressor, in the case there would be no equation in which it was a dependent variable). In addition, the issue of model identification does not occur when using a VAR. Providing there are no contemporaneous terms acting as regressors, Ordinary least squares (OLS) can be used to estimate each equation individually, as the regressors are lagged so treated as pre-determined. Also, VARs are often highly efficient at forecasting compared to traditional models.

A limitation of the VAR approach is that it must be estimated to low order systems. Effects of omitted variables will be in the residuals. They may lead to major distortions in the impulse responses, making them of little use for structural interpretations see e.g. (Hendry, 1995), although the system may still be useful for predictions see e.g. (Hendry & Doornik, 1997) and the references stated there. Further, measurement errors or misspecifications of the model will also induce unexplained information left in the disturbance terms, making interpretations of the impulse responses even more difficult. (Hendry, 1995; Bjørnland, 2000)

3.4. Granger causality

The traditional approach for testing Granger causality compares the prediction errors obtained by a model that relates Y to past and current values of both X and Y (Ajmi et al., 2014). This approach is naturally attractive because the test is simply asked to determine whether the coefficients of the regression model, associated with past and current values of X, are significant. The bivariate Granger (1969) framework investigates the linear Granger causality between two processes X and Y, and involves estimating a p- order linear vector autoregressive model, VAR(p), as follows:

$$\begin{bmatrix} X_t \\ Y_t \end{bmatrix} = \begin{bmatrix} \alpha_1 \\ \alpha_2 \end{bmatrix} + \begin{bmatrix} \phi_{11,1} & \phi_{12,1} \\ \phi_{21,1} & \phi_{22,1} \end{bmatrix} \begin{bmatrix} X_{t-1} \\ Y_{t-1} \end{bmatrix} + \ldots + \begin{bmatrix} \phi_{11,p} & \phi_{12,p} \\ \phi_{21,p} & \phi_{22,p} \end{bmatrix} \begin{bmatrix} X_{t-p} \\ Y_{t-p} \end{bmatrix} + \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \end{bmatrix} \quad (2)$$

where $\varepsilon_t = (\varepsilon_{1t},)'$ is a vector of white noise processes with a nonsingular covariance matrix Σ_ε.

By carrying out either an F-test (restricted versus unrestricted) or Wald-type test, one can find alternative causal relations between X and Y. But, as is indicated following Kratschell & Schmidt (2012), since the all these Granger causality tests in most cases are based on one period ahead predictions, it is not well suited to distinguish short and long run effects. Importantly, the extent and the direction of causality differ between frequency bands (Granger & Lin, 1995), which conventional Granger causality tests are unable to diagnose. Moreover, according to Lemmens et al. (2008), the traditional approach to Granger causality tacitly ignores the possibility that the strength and/or direction of the Granger causality, (if any) can vary over different frequencies. Because of these reasons, as is suggested in (Ding et al., 2006), to get a more precise picture of the short, medium and long run Granger causality, a frequency domain Granger causality test should be used. (Ozer & Kamışlı, 2015)

4. RESULTS AND DISCUSSION

Table 3 summarizes the descriptive statistics of the variables.

Table 3: Descriptive statistics

	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
GDPG (%)	-5,962	11,113	4,830	4,412	-1,100	0,505
RLAW	-0,162	0,160	0,026	0,097	-0,582	-0,549
CCORRP	-0,522	0,158	-0,078	0,177	-0,781	0,643
LEXP (%)	58,600	75,300	68,703	4,538	-0,449	-0,326
LITR (%)	90,901	99,494	96,888	2,686	-1,196	0,822
LBFBE (%)	19,732	28,610	24,571	3,295	-0,479	-1,470
LBFIN (%)	67,031	72,322	69,807	1,548	-0,229	-0,511
LBFAD (%)	29,554	37,743	33,445	2,575	0,163	-0,735
FDI	1,0E+04	7,1E+09	1,2E+09	1,7E+09	1,797	3,192
INF (%)	6,251	105,215	40,172	31,087	0,335	-1,265

Source: Own elaboration

For the rule of law and FDI, the standard deviations (SD) are greater than the corresponding averages, it confirms the variability of those variables (spread out of the mean) or the presence of the outliers (see Figure 1). In the remainder of the paper, the factors which impact the economic growth in Turkey will be defined.

Pearson correlation coefficient demonstrates the degree of dependence between two quantitative variables. In general, when the coefficient is near to the absolute value 1, the linear dependence is strong, and if the coefficient is near to 0, the linear dependence is weak. In addition, to extract the correlated variables, a correlation test can be done to have more credible results. Table 4 presents the Pearson correlation matrix**.**

Table 4: Correlation Matrix

	GDPG	RLAW	CCORRP	LEXP	LITR	LBFBE	LBFIN	LBFAD	FDI	INF
GDPG	1									
RLAW	0,124	1								
CCORRP	-0,102	0,436	1							
LEXP	0,049	-0,079	0,289	1						
LITR	-0,052	-0,547	0,073	,945**	1					
LBFBE	0,357	-0,542	-0,568	,843**	,981**	1				
LBFIN	0,150	-0,519	-,631*	,898**	,953**	,923**	1			
LBFAD	0,107	-,665*	-,752**	,889**	,937**	,910**	,975**	1		
FDI	0,086	-0,178	0,291	**,754****	**,768****	0,575	**,596***	0,509	1	
INF	-0,276	-,486*	-,577*	-,597**	-,824**	-0,110	-0,012	0,009	**-,657****	1

*. Correlation is significant at the 0.05 level (2-tailed).

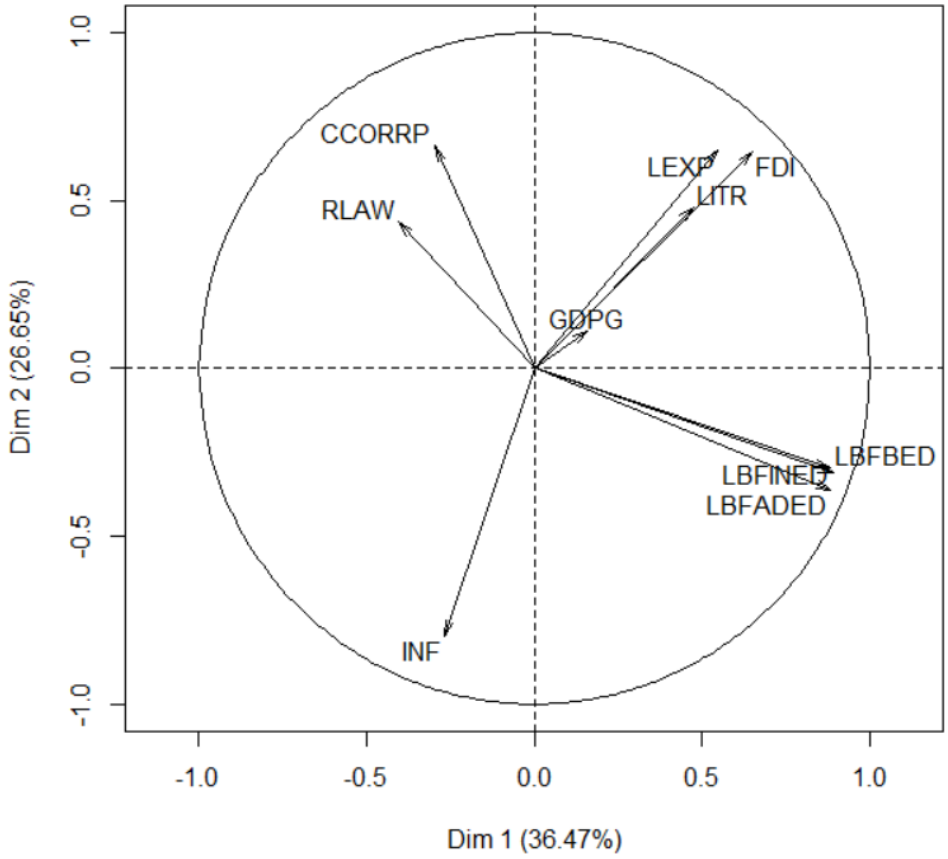
**. Correlation is significant at the 0.01 level (2-tailed).

Source: Own elaboration

The correlation matrix doesn't show any significant correlation between the FDI and the growth rate in Turkey: it is positive but not statistically significant. However, FDI is positively high correlated with life expectancy, literacy rate and labor force at significance level of 1%, 1% and 5% respectively. FDI is negatively high correlated with the inflation rate (0,657) at the significance level 1%. In addition, FDI has a positive correlation with the control of corruption (0,291), but not statistically significant. It is noted that FDI has negative correlation with the rule of law (-0,178) which could be due to estimation issue for the variable rule of law.

The following figure (Figure 3) shows the Principal Component Analysis (PCA), two components were selected as they presented approximately 63% of the data 'total variation.

Figure 3: Principal Component Analysis



Source: Own elaboration

The variable growth rate is mal represented (near to the circle center due to a weak value of cos^2). However, it is positively correlated with FDI, literacy rate and life expectancy. Growth rate and FDI are negatively correlated with inflation rate on the both components.

The stationarity of the variables was tested via Dickey –Fuller[1] (ADF). The significance level is 5%, if the p-value is less than 5% than H0 will be rejected and consequently the variable has not a unit root.

Table 5**:** ADF Stationary Test results

Variable	**t-Statistic**	**Prob.***
GDPG	-6.055337	0.0000*
CCORRP	-3.43	0.0276*
RLAW	-0.85	0.7708
D (RLAW)	-2.13	0.2362
D (RLAW,2)	-2.69	0.1055
D (RLAW (-1),2)	-2.69	0.0273*
LFDI	-2.30	0.1754
D(LFDI)	-7.52	0.0000*

* Significance level 5%

Null Hypothesis (H0): The variable has a unit root

As shown in Table 5, GDP growth (GDPG) has not a unit root, control of corruption (CCORRP) has not a unit root, the second difference of the lagged variables rule of law (D (RLAW (-1),2)) has not a unit root and the first difference of log FDI (D(LFDI)) has not a unit root. To summarize, the variables GDPG, CCORRP, D (RLAW (-1),2) and D(LFDI) will be utilized in the VAR model.

Table 6**:** VAR model output

Dependent Variable : Growth GDP

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Intercept	5.596461	2.792959	2.003775	0.0919
Control of corruption	-2.100680	13.81882	-0.152016	0.8842
Rule of law	-18.50569	16.86478	-1.097298	0.3146
FDI	3.742929	9.888513	0.378513	0.7181
R-squared	0.34			

Source: Own elaboration

The stepwise approach was followed to select the predictors (control of corruption, rule of law and FDI). Following Table 6, the coefficients are not null but not significant in the model (p-value greater than the significance levels 1% and 5%): it shows that the FDI has positive impact on the economic development in Turkey, but it is not significant. Also, the political risk factors (control of corruption and Rule of law) have negative impact on the economic growth in Turkey (the PCA showed also a negative relationship between those factors and the economic growth) which may due to

[1] The augmented Dickey-Fuller test (ADF) examines the stationarity of a time series. The test base is simple: if the null hypothesis (H0) is retained (presence of unit roots), then the process is nonstationary. (Dickey & Fuller, 1979)

the estimation of those factors and proves that despite the estimation of those risk factors is not evident, it shouldn't be ignored that they have negative impact on the GDP growth.

R-squared equals 0,34 which demonstrates that 34% of the variance of the economic growth in Turkey was explained via this model. The following table shows the results of Granger tests.

Table 7: Granger Causality

Null Hypothesis	F-Statistic	Prob.
D(LFDI) does not Granger Cause GDPG	1.33553	0.2805
GDPG_ does not Granger Cause D(LFDI)	0.02058	0.9796
CCORRP does not Granger Cause GDPG	0.57310	0.5853
GDPG_ does not Granger Cause CCORRP	0.32151	0.7340
D (RLAW (-1),2) does not Granger Cause GDPG	0.47300	0.6445
GDPG does not Granger Cause D (RLAW (-1),2)	1.05336	0.4054
CCORRP does not Granger Cause D(LFDI)	0.13403	0.8765
D(LFDI) does not Granger Cause CCORRP	0.29034	0.7556
D (RLAW (-1),2) does not Granger Cause D(LFDI)	0.40472	0.6841
D(LFDI) does not Granger Cause D (RLAW (-1),2)	0.06471	0.9380
D (RLAW (-1),2) does not Granger Cause CCORRP	0.17887	0.8413
CCORRP does not Granger Cause D (RLAW (-1),2)	3.60952	0.1071

Source: Own elaboration

Following Table 7, at the significance level 5% there is no Granger causality between the FDI and the economic growth in Turkey.

5. CONCLUSION

The current research consists in investigating the relationship between the Foreign Direct Investment and the Turkish economic growth. It has been assumed that the FDI contribute positively in the economic growth in Turkey. VAR model and Granger causality Test were carried-out to investigate this relationship.

The GDP growth (annual %), Rule of Law, Control of Corruption, Life expectancy, Labour force with basic education, Literacy rate youth, Labour force with intermediate education, Labour force with advanced education, FDI and the inflation rate were utlized to construct the Granger causality test. Only FDI, rule of law and control of corruption were included in the VAR model after applying stepwise approach to select the variables.

The results revealed that there is no Granger causality between economic growth and FDI, the VAR model confirmed the results as the FDI coefficient is positive but not significant. Therefore, it could be concluded that FDI has not a significant impact on the Turkish economic growth.

The research has limitations. Mainly, the dataset and the missing variables as the study period is limited for some variables. Notwithstanding the political risk factors have been utilized as independent variables, some researchers see that quantifying those variables is not crucial. The analysis with only political risk factors is not enough explanotary power, so further research studies should take into account that.

REFERENCES

1. AJMI, A.N., EL-MONTASSER, G. and NGUYEN, D.K. (2013). Testing the relationships between energy consumption and income in G7 countries with nonlinear causality tests. Economic Modelling, 35, 126-133.
2. ALMFRAJIA, M.A. and ALMSAFIR, M.K. (2013). Foreign Direct Investment and Economic Growth Literature Review from 1994 to 2012. Procedia - Social and Behavioral Sciences, 129, 206 – 213.
3. AMAL, M., TOMIO, B. and RABOCH, H. (2010). Determinants of foreign direct investment in Latin America. Journal of Globalization. Competitiveness and Governability, 4(3), 116-133.
4. AYAYDIN, H. (2010). Doğrudan Yabancı Yatırımlar ile Ekonomik Büyüme Arasındaki İlişkinin İncelenmesi: Türkiye Örneği, Dumlupınar University Journal of Social Sciences, 26(1), 133-145.
5. BJØRNLAND, H. C. (2000). VAR Models in Macroeconomic, Research. Statistics Norway Research Department.
6. BOSWORTH, B. and COLLINS, S. M. (1999). Capital Inflows, Investment and Growth, Tokyo Club Papers, 12, 35-74.
7. CARKOVIC, M. and LEVINE, R. (2002). Does Foreign Direct Investment Accelerate Growth? Financial Globalization: A Blessing or a Curse, World Bank Conference.
8. CHANG, H.J. (2004). Regulation of Foreign Investment in Historical Perspective. The European Journal of Development Research, 16(3), Autumn 2004, 687–715.
9. CHOE, J. (2003). Do Foreign Direct Investment and Gross Domestic Investment Promote Economic Growth? Review of Development Economics, 7(1), 44–57.
10. CHOWDHARY, R. and KUSHWAHA, V. (2013). Domestic Investment, Foreign Direct Investment and Economic Growth in India since Economic Reforms. Journal of Transformative Entrepreneurship, 1(2), 74-82.
11. DE MELLO, L. R. (1999). Foreign direct investment-led growth: evidence from time series and panel data. Oxford Economic Papers, 51(1), 133–151.
12. DICKEY, D. and FULLER, W.A. (1981). Likelihood ratio statistics for autoregressive time series with a unit root. Econometrica, 49, 1057-1072.
13. DING, M., Y. Chen and BESSLER, S.L. (2006), Granger Causality: basic Theory and Application to Neuroscience, B. Schelter, M. Winterhalder and J. Timmer (eds.) Handbook of Time Series Analysis. Wiley, 437-460.
14. DURHAM, J.B. (2004). Absorptive capacity and the effects of foreign direct investment and equity foreign portfolio investment on economic growth. European Economic Review, 48(2), 285-306.
15. FARRELL, R. (2008). Japanese Investment in the World Economy: A Study of Strategic Themes in the Internationalisation of Japanese Industry. Britain: Edward Elgar.
16. FRECKLETON, M., WRIGHT, A. and CRAIGWELL, R. (2012). Journal of Economic Studies, 39(6), 639-652.
17. GRANGER, C.W.J. (1969). Investigating Causal Relations by Econometric Models and Cross-spectral Methods. Econometrica, 37(3), 424-438.
18. GRANGER, C.W.J. and LIN, J.L. (1995). Causality in the Long Run. Econometric Theory, 11(3), 530-536.
19. HENDRY, D. F. (1995). Econometrics and Business Cycle Empirics.

Economic Journal (London), 105(433), 1622.

20. HENDRY, D.F. and DOORNIK. J.A. (1997). The Implications for Econometric Modelling of Forecast Failure. Scottish Journal of Political Economy.
21. HIRST, P. and THOMPSON, G. (1994). Globalization, Foreign Direct Investment and International Economic Governance. Sage Journal, 1(2).
22. IMF. (2003), The International Monetary Fund (IMF), Retrieved from https://www.imf.org
23. KAHVECI, Ş. and TERZI, H. (2017), Causality Analysis of the Relationship between Foreign Direct Investment and Economic Growth in Turkey. Erciyes University Journal of Economics and Administrative Sciences, 49, 135-154.
24. KATIRCIOGLU, S. (2009). Foreign Direct Investment and Economic Growth in Turkey: An Empirical Investigation by The Bounds Test For Co-Integration And Causality Tests. Original scientific paper Izvorni znanstveni rad., 1(560).
25. KHAWAR, M. (2005). Foreign Direct Investment and Economic Growth: A Cross-Country Analysis. Global Economy Journal, 5(1), 1-11.
26. KRATSCHELL, k. and SCHMIDTH, T. (2012). Long-Run Trends or Short-Run Fluctuations: What Establishes the Correlation Between Oil and Food Prices? SSRN Electronic Journal, 357.
27. KUMAR, N. and PRADHAN, P. (2002). Foreign Direct Investment, Externalities and Economic Growth in Developing Countries. RIS Discussion Papers, 1, 1-37.
28. LE, M. V. and SURUGA, T. (2005). Foreign direct investment, public expenditure and economic growth: the empirical evidence for the period 1970-2001. Applied Economics Letters, 12, 45 – 49.
29. LEMMENS, A., CROUX, C. and DEKIMPE, M.G. (2008). Measuring and testing Granger-causality over the spectrum: an application to European production expectation surveys, 24, 414-431.
30. LENSINK, R. and MORRISSEY, O. (2006). Foreign Direct Investment: Flows, Volatility, and the Impact on Growth. Review of International Economics, 14(3), 478-493.
31. LI, X. and LIU, X. (2004). Foreign Direct Investment and Economic Growth: An Increasingly Endogenous Relationship. World Development, 33(3), 393-407.
32. MCKELLAR, R. (2010). A Short Guide to Political Risk. Gower Publishing Limited, England.
33. OSABUTEY, E.L.C. and OKORO, C. (2015). Political Risk and Foreign Direct Investment in Africa: The Case of the Nigerian Telecommunications Industry. Thunderbird International Business Review, 57(6), 441-456.
34. OZER, M. and KAMISLI, M. (2015). Frequency Domain Causality Analysis of Interactions between Financial Markets of Turkey. International Business Research, 9(1), 176-186.
35. PATNAIK, P. (1999). The real face of financial liberalisation. India's National Magazine. 16(4). National Seminar on financial liberalisation organised in Ernakulam on January 19, 1999 by the Bank Employees Federation of India (BEFI).
36. ROMER, P. (1993). Idea gaps and object gaps in economic development. Journal of Monetary Economics, 32(3), 543-573.
37. ROY, A.G. and VON DEN BERG, H.F. (2006). Foreign Direct Investment and Economic Growth: A Time-Series

Approach. Global Economy Journal, 6,1-19.

38. SARKAR, P. (2007). Does Foreign Direct Investment Promote Growth? Panel Data and Time Series Evidence from Less Developing Countries, 1970-2002. MPRA Paper No: 5176.

39. SIMS, A.C. (1980). Macroeconomics and Reality. Econometrica, 48(1), 1-48.

40. SOLOMON, E. (2011). Foreign Direct Investment, Host Country Factors and Economic Growth. Ensayos Revista de Economía, 33(1).

41. VIJAYAKUMAR, N., SRIDHARAN, P. and RAO, K.C.S. (2010). Determinants of FDI in BRICS Countries: A panel analysis. Int. Journal of Business Science and Applied Management, 5(3).

42. WORLD BANK. Retrieved from http://data.worldbank.org/indicator. (last Accessed 2018).

43. YALMAN, İ. N. and KOŞAROĞLU Ş. M., (2017). Effect on Direct Foreign Investments on Economic Growth and Unemployment. International Journal of Economics, Business and Politics, 1(2), 191-205.

44. YILMAZ, Ö., KAYA, V. and AKINCI, M. (2011). Impact on Economic Growth and Foreign Direct Investment in Turkey (1980-2008). Atatürk University Journal of Economics and Administrative Sciences, 25 (4), 13-30.

45. ZEKARIAS, S. M. (2016). The Impact of Foreign Direct Investment (FDI) on Economic Growth in Eastern Africa: Evidence from Panel Data Analysis. Applied Economics and Finance, 3(1), 145-160.