The Relationship Between Direct Foreign Capital Investment, Economic Freedom And Economic Growth In Emerging Markets^{*}

Gelişen Piyasalarda Doğrudan Yabancı Sermaye Yatırımı, Ekonomik Özgürlük Ve Ekonomik Büyüme İlişkisi

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ÖZ

Ekonomik büyüme bir ekonominin zaman içindeki üretim hacmindeki artış olarak tanımlanmaktadır. Yabancı sermaye yatırımları genellikle ikiye ayrılmaktadır: Doğrudan yabancı sermaye yatırımları ve dolaylı yabancı sermaye yatırımları. Gelişmekte olan ülkelere giren doğrudan yabancı sermaye yatırımları ekonomik büyümenin, istihdamın ve milli gelirin artmasının ana itici gücü olarak görülmektedir. Küreselleşme ile 1990'lardan itibaren Doğrudan Yabancı Sermaye Yatırımlarında (DYSY) önemli artışlar olmuştur. Literatürde yer alan doğrudan yabancı sermaye yatırımının evsahibi ülkelere önemli yararlar sağladığı bulgularına rağmen, DYSY – büyüme ilişkisine yönelik araştırmalarda çelişkili sonuçlar bulunmaktadır. Bu çalışmada 1995-2016 yılları arasında gelişmekte olan piyasa olarak tanımlanan 12 ülkede DYSY, ekonomik özgürlük ve ekonomik büyüme ilişkisinin Dinamik Panel Veri metodu ile analiz edilmesi amaçlanmıştır. Analiz sonuçlarına göre % 5 anlamlılık düzeyinde DYSY ve ekonomik büyüme arasında anlamlı bir ilişki bulunmaktadır. Ancak ekonomik özgürlükler ile bir ilişkiye rastlanılmamıştır. Ayrıca, yüksek teknolojik ürün ihracatı ve nüfus Doğrudan Yabancı Sermaye Yatırımlarını etkilemektedir. Dışa açıklık, faiz oranları, işsizlik oranı ve iç tüketim arasında ilişki bulunamamıştır.

ANAHTAR KELİMELER

Doğrudan Yabancı Sermaye Yatırımı, Ekonomik Büyüme, Ekonomik Özgürlük, Faiz Oranları, Panel Veri Analizi.

ABSTRACT

Economic growth is defined as an increase in the volume of production of an economy over time. Economic growth is important for the country at every level of development. Foreign capital investments are generally divided into two categories: direct foreign capital investments and indirect foreign capital investments. Foreign direct investment flows in developing markets are seen as the main driving force of economic development, employment and national income. With globalization, there have been significant increases in Foreign Direct Investment since 1990s. Despite the fact that the foreign direct investment (FDI) inflows predicts tremendous benefits to the host country, there are conflicting results in the FDI - growth relationship in the literature. The aim of this study is to analyze the relationship between direct foreign investment, economic freedom and economic growth in the 12 countries defined as emerging markets in the period of 1995-2016 by using dynamic panel data method. According to the results of the analysis, there is a relation between FDI and economic growth. Also no relation with economic freedom has been observed. Moreover, high technological product exports and population affect FDI. There is no relation between FDI and trade openness, interest rates, unemployment rate, domestic consumption.

KEYWORDS

Foreign Direct Investment, Economic Growth, Economic Freedom, Interest Rates, Panel Data Analysis.

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INTRODUCTION

Economic growth is defined as an increase in the volume of production of an economy over time. Economic growth is important for the country at every level of development. Opinions on productivity and economic growth are based on Neo-classical and internal growth theories. According to the neo-classical view, the shortterm determinant of growth is capital accumulation. Neo-classical theory does not accept that, in spite of their flexibility, the national income per capita may continuously increase in an economy. These models are insufficient to explain the source of technological development, arguing that the main source of economic growth in the long run is the technological development. Given the emerging market economies, foreign direct investment is the most important item in total private capital movements. Foreign direct investment flows in developing countries are seen as the main driver of economic growth, employment and national income in general.

Foreign capital investments are generally divided into two categories: direct foreign capital investments and indirect foreign capital investments. Foreign direct investment (FDI) is an investment made by foreign investors in the form of establishing production facilities, opening branches, acquiring immovables or purchasing part or all of the shares of an existing company. Direct foreign capital investments offer several advantages to host countries; capital and technology transfers, turning off savings gaps, reducing production costs and increasing production, employment, expansion of foreign exchange reserves and competition environment. The indirect ones are deposit transactions, purchase of shares and bonds etc. and portfolio investments.

Three conditions, known as OLI Paradigm, must be provided in the same way for the FDI occurance. In the OLI Paradigm (Dunning, 1993);

- a) Ownership: The company owns products, technology, patents, brands, etc.
- b) *Market position*: the commercial and legal regulations in the investing country, financial and political stability and stability in exchange rates.
- c) Internalization: To produce in the host country instead of international licensing or franchising,

Since the early 1980s, many countries, including developing countries, have abolished most of their restrictions on foreign investment. With globalization, there have been significant increases in Foreign Direct Investment since 1990s. As a result, the world direct investment inflow, which was 57 billion US dollars in 1982, showed a steep increase and in 2016 it was 1.75 trillion US dollars (Table 1).

	2003	%	2007	%	2016	%
World	557,9	100,0	2.100,0	100,0	1.746,4	100
Developed Economies	358,5	64,3	1.444,1	68,8	1.031,4	59,06
EU	253,7	70,8	923,8	64,0	566,2	54,90
USA	53,2	14,8	266	18,4	391,1	37,92
Japan	6,3	1,8	22,6	1,6	11,4	1,1
Developing Economies	175,1	31,4	564,9	26,9	646,0	40,94
China	53,5	30,6	83,5	14,8	133,7	20,7
Brazil	10,1	5,8	34,6	6,1	58,7	9,1
India	4,6	2,6	25,0	4,4	44,5	6,9
Russia	8,0	4,6	55,1	9,8	37,7	5,8
Turkey	1,8	1,0	22,0	3,9	12	1,9

Table	1:	Foreign	Direct	Capital	Investment
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Source: UNCTAD, World Investment Report 2017

There are many studies to investigate the relationship between FDI and employment, competitive financial development, know-how and technology transfers. In particular, the impact of direct foreign investment on economic growth is being discussed to a great extent.

Economic freedom explains the protection of private property rights and the freedom of voluntary transactions (Gwartney, et al. 1996). Economic freedom occurs when properties which individuals acquire without the use of force, fraud, or theft are protected from physical invasions by others and they are free to

use, exchange, or give their property as long as their actions do not violate the identical rights of others. An index of economic freedom should measure the extent to which rightly acquired property is protected and individuals are engaged in voluntary transactions.

The Economic Freedom Index prepared by the Heritage Foundation is used in this study. The Economic Freedom Index (EFI) is published annually. The Economic Freedom Index has 12 quantitative and qualitative subcomponents and these components are grouped into 4 groups:¹

- Rule of law (property rights, freedom from corruption);
- Limited government (fiscal freedom, government spending);
- Regulatory efficiency (business freedom, labor freedom, monetary freedom); and
- Open markets (trade freedom, investment freedom, financial freedom).

Each of the 12 economic freedoms is graded on a scale from 0 to 100. The 10 component scores are equally weighted and averaged to get an overall economic freedom score for each economy. The high score indicates that the level of freedom is high. Countries are ranked by scoring on the subindexes of the economic freedom index. Economic freedoms are generally described as a mechanism that activates the dynamics of economic growth and development, brings the economy to the natural balance without any external intervention, and allows individuals in society to freely take and implement economic decisions. An institutional structure guarantees economic freedoms. In other words, a liberal market economy creates an environment increasing growth and accelerating development. Economic freedoms, low and predictable rates of inflation affect interest rates, competitive exchange rates and balance of payments to meet the needs of the country as well as macroeconomic stability. Depending on the combination of the factors mentioned, the growth process is accelerated and a sustainable momentum is gained.

There are numerous studies on the relationship between direct foreign investment, economic freedoms and the economic growth. Controversial results has been found in these studies. The aim of this study is to reanalyze the relationship between direct foreign investment, economic freedom and economic growth in the 12 countries defined as emerging markets between 1995-2016 by using panel data method and to investigate the effect of direct foreign investment and economic freedom on economic growth. For this purpose, the relationship between the variables has been empirically tested and other variables have also been added to the model.

1.LITERATURE

There are a number of studies on the impact of foreign capital investment on economic growth in international markets. Despite the fact that the introduction of foreign direct investment inflows suggests tremendous benefits to the host country, there are conflicting results in the FDI - growth relationship (Herzer et al. 2008). In some studies in the literature, there is no such evidence (Ericsson and Irandoust, 2001), while direct investment is found to have a positive growth effect in host countries (De Mello, 1999; Chong et al. 2010; Woo, 2009; Baltabaev, 2014) or a negative effect was observed (Moran, 1998). The studies on FDI and economic growth are summarized in Table 2.

¹ http://www.heritage.org/index/about

Authors	Nr. of Country	Period	Method	Results
Azman-Saini et al. (2010)	85	1975 2005	GMM	No relation
Alfaro & Sayek (2009)	62	1975 1995	Regression	No relation
Baltabaev (2014)	49	1974 2008	Dynamic panel GMM	Positive effect on economic growth
Woo (2009)	92	1970 2000	OLS and Panel Data	Positive effect on economic growth
De Mello (1999)	33	1970 1990	Panel Data	Significant in developed countries and nonsignificant in developing countries
Wang & Wong (2009)	69	1970 1989	Panel (SUR)	No relation
Borenszteina et al. (1998)	69	1970 1989	SUR	No relation
Herzer & Donaubauer (2015)	49	1981 2011	Panel Cointegration & Causality	Negative impact on developing countries. FDI-Growth in the long term, Growth-FDI causality relation in the short term
Özgür & Demirtaş (2017)	Turkey	1992 2013	Cointegration	Positive contribution of FDI to growth
Ayaydın (2010)	Turkey	1970 2007	VAR	Positive positive relationship between FDI and economic growth
Acar	Turkey	2001 2015	Granger Causality	No relation
Vergil, & Karaca (2010)	Turkey	1980 2005	Panel Data	Positive effect on economic growth
Ilgun et al. (2010)	Turkey	1980 2004	VAR	There is a two-way causality relationship
Adalı & Yüksel (2017)	30	1991-2015	Panel Causality	Foreign direct investments is granger cause of economic growth

Table: Literature

Source: prepared by author.

There are many studies on economic freedom, growth and foreign direct investment in literature ((Hanke & Walters (1998), Quazi, R. & Rashid, S. (2004), Doucouliagos & Ulubaşoğlu (2006), Kobeissi, N. (2005), Quazi, R. (2007), Caetano, J. & Caleiro, A. (2009), Beşkaya & Manan, (2009), Altunışık, Çakmak & Peker (2011), Türen & Gökmen et (2011), Tunçsiper & Biçer (2014), Akıncı, Yüce & Yılmaz (2014), Kızılkaya, Ay & Akar (2016), Güney (2017), Sucu (2017)).

However, there are rare studies on growth and direct foreign investment, economic freedom. Bengoa and Sanchez-Robles (2003) investigated the impact of foreign direct investment and economic freedom on economic growth. They use panel data analysis covering data of 18 countries for the period of 1970-1999 and observe that the direct foreign capital investment volume increases parallel to the expansion of economic freedom. In addition, this leads to rapid economic growth.

Azman-Saini, Baharumshah and Law (2010), analyze the economic freedom, foreign direct investment and growth relatio in 85 countries by using panel data analysis. The results show that foreign direct capital does not have a direct (positive) effect on economic growth by itself. However, FDI is significant in the host countries due to the level of economic freedom. In other words, countries encouraging the freedom of economic activities are benefiting from FDI.

Hossain (2016), investigates economic freedoms, foreign capital investments and economic growth relationship in 79 developing countries between 1998 and 2014. As a result of the analysis, it is seen that economic freedoms increase foreign direct investments. Zghidi et al. (2016), examines economic freedom, growth and foreign capital investments between the relationship in Tunisia, Morocco, Algeria, Egypt in the period of 1980-2013. There is a positive relationship between the variables. Moreover, economic freedom is complementary to foreign direct investments. Kazemi and Saini (2017), analyze economic freedoms, foreign direct investments and democracy interaction in 87 countries between 1981 and 2010. Economic freedom positively affects foreign direct investments. The findings of the analysis shows that democracy does not play an important role in attracting foreign direct investments.

Şahin (2018), examines the relationship between direct foreign capital investments, economic freedoms and economic growth in BRICS-T countries by using data from the period 1995-2014. Şahin uses the bootstrap panel causality analysis developed by Kloya (2006). The causality relation from economic freedom to foreign direct investment has been observed in Turkey. Morevover, the causality from foreign direct investment to economic growth is observed in South Africa. There is no causality relationship in other countries.

2.DATA AND METHOD

This study covers 1996 - 2016 period and 12 countries identified as emerging markets, (Brazil, China, Indonesia, South Africa, India, Malaysia, Mexico, Poland, Russia, Chile, Thailand and Turkey). Annual data are used and there are 2.160 observations in total. 9 independent, 2 main (Economic Freedom Index and Growth Rate) and 7 instrumental variables have been analyzed and are shown in Table 3.

Variables	Abbreviation
Foreign Direct Investment	FDI
Economic Freedom Index	EFI
Economic Growth (USD)	GDP
Population	POP
Annual Deposit Rate	DIR
Savings/GDP Ratio	Savings
High Technology Rate in Exports	HT Export
Householder Consumption/GDP	HH/GDP
Unemployment Rate	UR
Openness Index	Trade

		•	
Table 3:	Variables	Used in	Analysis

This study aims to analyze the relationship between direct foreign investment, economic freedom and economic growth in the 12 countries defined as developing markets between 1995-2016 by using the Dynamic Panel Data Method. Dynamic Panel Data model is a model that contains lagging variables or variables together. Lagging variables are considered as explanatory factors.

3.RESULTS

Correlations between the variables used in the model are weak. The correlation is 0,5863 between the Foreign Direct Investment and the Savings/GDP Ratio, - 0,6356 between the Household Consumption/GDP Ratio. Also correlation between the Economic Freedom Index and the Population is - 0.5811. Thus, there is no multicollinearity between variables.

Individual and/or Time Effect test results show that there is individual and time effect in the model. The LR test also analyzes individual and time effects separately. According to LR Test, the model has individual effect. Hovewer time effect does not exist. (Table 4). As a result of the Hausman test, a fixed effect model is appropriate to use in panel data analysis (Table 5).

Tests	Individual and Time Effect LR Tests	Individual Effect LR Tests	Time Effect LR Tests
Prob.	(0.0000)	(0.0000)	(0.6605)
Individual Effect	Yes	Yes	-
Time Effect	Yes	-	No

Table 4: Individual and/or Time Effect Test Results

Table 5: Hausman Test Sonuçları.



The next step is to test the model's assumptions. These assumptions are autocorrelation and heteroskedasticity. Probability value (0.0000) is to be < 0.05 in the test and heteroskedasticity problem occurs in the model (Table 6). In the Baltagi-Lee test statistics, null hypothesis (H0) claiming no autocorrelation at level 1 is rejected and autocorrelation subsists (Table 7).

Table 6: Heteroskedasticity Test



Table 7: Autocorrelation Test

H0: No $AR(1)$) in the follow	ving specification	on for the	error terms AR(1) disturbances				
F test that all u_i=0:	F(11,250) =	12.95	Prob. > F = 0.0000				
Baltagi-Lee = 98.23							

The problem of Endogeneity occurs when an explanatory variable is correlated with the error term. Endogeneity occurs as a result of measurement error, autocorrelation errors, simultaneous causality (instrumental variable), and non-modeled variables. There are two common causes: an uncontrolled mixer that causes independent and dependent variables of a model, and a causality loop between independent and dependent variables of a model (Woolridge, 2013). According to Durbin Score and Wu-Hausmann test results, EFI and GDP variables are endogenous. That is, there is no problem of Endogeneity (Table 8).

Table 8: Endogeneity Test

Ho: Variables are endogenous							
GDP			EFI				
Chi ² (1)	0,0602	Prob	0,8062	Chi ² (1)	1,0056	Prob	0,3160
F (1,248)	0,5790	Prob	0,8100	F (1,248)	1,1060	Prob	0,2960

Cross-sectional dependence in the error term of the predicted model leads to inconsistent coefficient estimates if the independent variables are correlated with ambiguous common variables or shocks. The effect that cross-sectional patterns have on the diffusion behaviour of a variable across time and space. Breusch-Pagan LM test results show that the model has cross-sectional dependency. (Table 9).

Table 9:	Cross-section	al Dependency	Test
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Test	Sonuç
Breusch-Pagan LM	$Chi^2(66) = 141.844 \text{ prob} = 0.0000$

Since the model has cross-sectional dependency, second-generation unit root tests must be used. For this purpose, the cross-sectionalally Augmented Dickey Fuller test (CADF) developed by Pesaran (2006) is applied. The results of the CADF test are presented in Table 10. The first difference of the variables containing the unit root is converted to be stable.

Variable	CADF*	CADF **
FDI		- 3,058 (0.003)
GDP	- 2,808 (0.000)	
EFI		- 2,904 (0.015)

Table 10: Unit Root Test Results

* Test statistics and probability values obtained at the level

** Test statistics and probability values obtained at the second difference

The model carries the problem of heteroskedasticity, autocorrelation and crosssectional dependency. Thus, it is better to use FGLS (Feasible Generalized Minimum Squares) estimator developed by Kmenta (1986). FGLS makes effective and consistent estimates in investigating the relationships between variables when N (number of variables) is < T (number of periods) and solves the problem of varying variance, autocorrelation and horizontal section dependency. The panel data regression equation and model are calculated as follows.

FDI_{it}= $\beta_0+\beta_1$ **GDP**_{it}+ β_2 **EFI**_{it} + ϵ_{it}

Table 11 shows the model results for Panel GLS Regression (Generalized least squares) with a fixed effect model at 5% significance level. The panel regression result is statistically significant at the 5% significance level (F-statistic value = 0.0098 < 0.05). According to this result, there is a relationship between foreign direct investment and economic growth. Investors prefer investing in economically growing countries as expected. This result of the study is consistent with the findings of Woo (2009), Ayayadın (2010), vergil and Karaca (2010), Baltabaev (2014), Özgür and demirtaş (2017) and Adalı and Yüksel (2017). Also there is no such relationship between foreign direct investment and economic freedoms although it is expected. Economic freedoms have no effect on foreign investments. This is also consistent with the literature.

		Wald chi ² (2)	9,25
		Probability	0,0098
d(FDI)	Coefficents	Std. Error	Probability
GDP	0,0014	0,006	0,002

 Table 11: Panel FGLS Regression Results

Then, instrumental variables (Population, Deposit Interest Rate (Annual), Saving / GDP Ratio, High Rate of Exports in Technology, Household Consumption / GDP Rate, Unemployment Rate and Openness Ratio) have been added to model. Table 12 shows the Panel Regression model results at the 5% significance level with fixed effects model.

C -1,97 2,816 0,484

Table 12: Panel Regression Results

		Wald chi2(2)	372,13
		Probability	0.0000
d(FDI)	Coeeficients	Std. Error	Probability
GDP	0,0082	0,0015	0.0000
HT Export	3,3500	1,5400	0.0290
POP	- 9,2200	4,1500	0,0038
С	.4908	.0499	0.0000

According to these results, there is a relationship between direct foreign capital investment and high technological product exports. As expected, investors prefer to invest in countries that export high technological products. Moreover, the population change also affects FDI. However, the coefficient is negative

despite the positive expectation. Other factors such as interest rates, unemployment rate and domestic consumption do not affect FDI. Although the relationship between openness and foreign investment is expected, this relationship has not been observed. Robust tests are performed with Arellano-Bond Test on both models and are shown in Table 13.

Arellano-Bond Test					
Order	Z	prob>z			
1	-7,1152	0,0000			
2	1,0550	0,2914			

Table 13: Arellano-Bond Test Results

CONCLUSION

Economic growth is important for the country at every level of development. Given the emerging market economies, foreign direct investment is the most important item in total private capital movements. Foreign direct investment flows into developing countries are seen as the main driving force of economic development, employment and national income in general. Recently there have been significant increases in Foreign Direct Investment overall the world.

There are many studies on foreign direct investment in the literature. The results of FDI's effects on growth are different from each other. While there is a significant relationships in some studies, it is seen that there is no relationship in others. Hovewer, there is a rare work in the field of FDI, economic freedom and economic growth. In this study, the relationship between foreign direct investment, economic freedom and economic growth between 1995 and 2016 is analyzed in the 12 countries defined as developing markets by using the Dynamic Panel Data method. According to panel regression results, there is a significant relationship between FDI and economic growth, and investors prefer to invest in growing countries. Despite the expectation of FDI and economic freedoms relation, no relation is observed. In addition, openness, interest rates, population, unemployment rate and domestic consumption factors do not affect foreign investment. There is a link between FDI and high technological product exports and it is seen that FDI flows to the country that exports high technological products.

Turkey and the developing countries should benefit more from foreign direct investment by the contributions of direct foreign investments to growth. In this context, research & development operations should be carried out to attract foreign direct investment. Also, technological innovations and qualified workforce structure should be developed. Turkey and emerging countries will employ foreign direct investment, technology and high added value in the form of new investments if it is open to further contribute to economic growth and employment. In order to increase the performance of foreign trade and competitiveness of emerging countries, it should be given importance to increase product diversity and development of adaptability to innovation. Investment in physical and human capital will also enable the absorption, adaptation and reproduction of new information and technology, which are introduced into the country through openness.

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