

## Foreign Direct Investments and Economic Freedom in OECD Countries

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### ABSTRACT

*The aim of this paper is to investigate the link between economic freedom (EFI) and foreign direct investments (GFC) in the case of 34 OECD countries. The annual panel data are collected in the time-span between 1997 and 2016. The results of linear static and dynamic panel data estimators suggest a positive link between EFI and FDI suggesting that economic freedom tends to contribute significantly to the inflow of foreign direct investments. The findings of linear dynamic panel data estimators suggest also the positive link between the variables of interest indicating that the estimation issues assigned with linear static panel data estimator tend to overestimate the impact of EFI on FDI. With regard to Granger causality test, the results outlined a bidirectional causal relationship between EFI and GFC suggesting that EFI tends to attract the foreign direct investors but also that the country with higher FDI results in the rise in economic freedom. At last, ARDL model suggests a positive link between the variables of interest but only in the short-run, assuming that policy makers need to propose the necessary strategies that will stimulate not only economic freedom but also monetary policy and financial development as well as to ease the business activities in the country in order to increase the inflow of FDI.*

## **INTRODUCTION**

The role of foreign direct investments (FDI) in economic growth has received a lot of attention among research community. Scholars in general agree on the positive FDI-growth nexus. Apart from this, FDI is expected to help developing countries to mitigate a gap and converge to developed countries. This is due to the fact that FDI expands domestic products and infrastructure (Dag, et al. 2018).

Foreign direct investments are defined as investments running from the foreign to host county (Rajapakse, 2016). With regard to this definition, we have selected the proxy variable of FDI to be gross capital formation as a share of GDP since it includes outlay on additions to the fixed assets such as machines, equipment, land, railways etc. Besides this definition, Yazdi et al. (2017) outlines that FDI serve to fund new capital in the host country. Besides this, very important feature of FDI is the knowledge spillover connected to the managerial skills of managers in multinational corporations.

Foreign capital in general aims to fund the new business, constructions, equipment etc. FDI is even more important since it implies the long-run relationship between the host and foreign country due to the fact that long-run decisions are not easily reversed (Satrovic and Muslija, 2017). Thus, FDI is considered to play an important role in long-run financing. In addition, Yazdi et al. (2017) indicates that foreign direct investment plays an increasingly important role in the global economy and has an enormous impact on a domestic economy.

On the other hand, economic freedom is receiving more attention by research community day by day. It can be defined as the freedom to engage in the economic activity on personal choice each individual. In addition to personal choice, it is important to mention voluntary exchange, freedom to compete in markets, and protection of person and property as very important components of economic freedom.

Yet without establishing institutions and policies, that would allow and protect property rights, voluntary exchange and individuals, it is highly unlikely that the economy will be able to enjoy the benefits of true economic freedom. Both theory and praxis agree that economic freedom leads to economic growth of the country. Apart from the fact that FDI significantly drives economic growth, empirical evidence up-to-date emphasize that positive externalities of FDI can be hardly achieved without economic and other freedoms (Satrovic and Sehic, 2015). For instance, Sambharya and Rasheed (2015) advocate the importance of the economic freedom but also suggest that policy makers need to improve the monetary policy as well as to stimulate the financial development of the country especially banking sector (Satrovic, 2017).

Taking into account previous paragraphs, economic freedom is expected to have a positive impact of foreign direct investments. This is since the lack of economic freedom can be a limitation to nation's or firm's abilities to use new technologies introduced by multinational corporations and will hardly contribute to the economic growth of host country. By providing FDI, multinational corporations actually grant access to new technology and enable host countries to use these advantages of foreign capital. Besides this, host countries also benefit from the increase in human capital since multinational corporations train executive staff as well as workers who can start new firms after hand (Satrovic, 2018b). In addition, economies with weak government intervention, with stronger property rights, bigger monetary freedoms etc. tend to be more attractive for foreign direct investors.

Recently, only a few empirical studies have analyzed the links between economic freedom and foreign direct investments. This is since most of the authors were interested in the moderating role of economic freedom on the FDI-growth nexus. The direct relationship between economic freedom and foreign direct investments has not been researched quite extensively. This is why this paper aims to fill in this gap by providing empirical evidence on the matter of interest.

Azman-Saini et al. (2010) outline the fact that economic freedom encourages individuals to face a risk and to start up new business. In addition, economic freedom stimulates foreign

trade and tends to attract foreign direct investors. This is especially the in the case of OECD countries due to the fact that these countries have experienced the tremendous increase in economic freedom do date and governments do much effort in order to make it rise. These countries also experience significant growth of FDI. Thus, the positive link between these two macroeconomic variables of interest is expected to be positive. For the purpose of this paper we have summarized the recent empirical evidence on the economic freedom-FDI nexus in the literature review section. Besides that, we have introduced the methodology together with the explanation of the variables used. Results section provides the findings of the research. This paper ends by presenting the concluding remarks.

## **1. Literature Review**

The researchers to date have explored extensively the link between foreign direct investments and economic growth. However, the link between foreign direct investments and economic freedom has not been explored very much. Hence, we have selected some of the recent paper on the matter and present their results below.

Azman-Saini et al. (2010) investigate the relationship between economic growth, foreign direct investment and economic freedom. For the purpose of the empirical study, they have collected panel data for a sample of 85 countries over the period 1976-2004. In terms of methodology, they have used generalized method of moment system estimator. The obtained results suggest that FDI has no direct impact on economic growth by itself. Instead, in order to promote economic growth over FDI, the authors suggest that countries need to improve the economic freedom. The overall conclusion of this paper indicates that greater economic freedom tends to significantly increase the gains from economic activities connected with multinational corporations.

The EFI-FDI nexus at the macroeconomic level has been explored by Moussa et al. (2016). They have collected the data concerning 156 countries over the period ranging from 1995 to 2013. Apart from previous studies, this paper includes often neglected nations such as Fragile and Conflict-Affected states, Sub-Saharan, Oceania, and Post-Soviet countries. The present research explores the impact on global as well as regional level. Findings of this paper suggest a positive impact of economic freedom on FDI in global case. The highest impact is in terms of the countries in Europe.

Hossain (2016) researches the relationship, if any, between economic freedom, foreign direct investments and economic growth for the sample of 79 countries. He has collected the annual panel data in the time span between 1998 and 2014. The author has employed panel data econometrics. The findings suggest a positive link between various kinds of freedom and foreign direct investments.

Kapuria-Foreman (2007) finds that increased economic freedom increases FDI in the case when aggregate measures of economic freedom are not employed in regression. The paper suggests that the increase in the protection of property rights and lowering barriers to capital flows and foreign investment are likely to increase FDI.

Taking into account results presented in research to date, a positive link between economic freedom and FDI is expected. Therefore, the increase in the protection of property rights, the increase in investment freedom and trade freedom as well as the other components of economic freedom tend to increase the attractiveness of host countries for foreign investors.

## **2. Data, Variables and Methodology**

### **2.1. Data and Variables**

In order to investigate the relationship between economic freedom and foreign direct investments, there was a need to select appropriate proxy variables. One of the most challenging tasks in this paper was to find appropriate proxy variable of economic freedom. The empirical studies to date in general agree that that the Economic Freedom Index (EFI) developed by The Heritage Foundation can be accepted as appropriate proxy of economic freedom (Heckelman, 2000; Dawson, 2003; and Ozcan et al., 2017). This index is consisted

of the twelve factors grouped into the four groups that cover the rule of law, the size of the government, the efficiency of the governments and the indicators of the trade liberalization.

With regard to the proxy of FDI, as indicated before, gross capital formation as a percentage of GDP is assumed to be appropriate. This validity of this variable is justified by Satrovic (2018a). Thus, this variable will be used in present research in order to explore whether or not economic freedom matters for the inflows of foreign capital.

The sample of 34 OECD countries is retrieved from: <https://www.oecdwatch.org/oecd-guidelines/oecd>. The time-period is selected based on the data availability. The first available year in terms of EFI is 1995, but there are some missing data for the year 1995 and 1997, thus the starting year is 1997. With regard to the data sources, we have used The World Bank database to extract the data on gross capital formation and The Heritage Foundation database to collect the data on economic freedom.

## 2.2. Methodology

The econometric methodology employed follows few steps. At first, we have employed the two stationarity tests. Moreover, we have estimated the link between the variables of interest using the linear static panel data estimators (random effects) as well as linear dynamic panel data estimators (GMM). In addition, we have employed the Granger causality test to check for the potential causal links between the variables. At last, we explore the link between economic freedom and FDI in the short- and long-run by employing the ARDL model.

The stationary properties have been tested using Levin–Lin–Chu (LLC)  $t^*$  test and Im–Pesaran–Shin test. It is important to emphasize that trend is included in the models. With regard to linear static panel data estimators, we have employed first fixed effects and later random effects. To decide between these we have employed the Hausman test (Somun-Kapetanovic et al., 2016). Due to the estimation issues connected with the linear static panel data estimators, we rather proceed to the GMM. To incorporate dynamics into the model, model equation can be written as an AR (1) model in general form in the following (Muslija et al., 2017):

$$y_{it} = \alpha_t + (v + 1)y_{it-1} + \beta x_{it} + u_i + \varepsilon_{it} \quad (2)$$

where  $y_{it}$  is the dependent variable,  $y_{it-1}$  is the lagged value of the dependent variable,  $x_{it}$  represents a vector of explanatory variables,  $u_i$  is individual effect,  $\varepsilon_{it}$  – error term while  $\alpha_t$  represents the period specific intercept terms to capture changes common to all countries (Muslija et al., 2017).

The coefficients in equation (2) can be derived using Arellano-Bover two-step GMM estimator (Muslija et al., 2017; Satrovic and Muslija, 2018). Potential bias due to the endogeneity of some of the regressors and potential dynamics will be controlled (Baum, 2009). Diagnostic tests include: Sargan test of overall validity of instruments and the test of second order autocorrelation.

The focus of this research is to explore the causal relationship between economic freedom and foreign direct investments using panel causality techniques. For this purpose Dumitrescu-Hurlin (DH) test is used. Lopez and Weber (2017) emphasize that DH provides an extended test designed to detect causality in panel data. The underlying regression may be summarized as:

$$y_{i,t} = \alpha_i + \sum_{k=1}^K \beta_{ik} y_{i,t-k} + \sum_{k=1}^K \mu_{ik} x_{i,t-k} + \varepsilon_{i,t} \quad (1)$$

where  $x_{i,t}$  and  $y_{i,t}$  are the observations of two stationary variables for individual  $i$  in period  $t$ . Coefficients are allowed to differ across individuals. The lag order  $K$  is assumed to be identical for all individuals and the panel must be balanced.

Lastly, ARDL model can be characterized as the error correction model. It enables us to estimate the relationship in the long-run by not taking into account the order of integration.

In addition, it calculates lag level of all of the variables and thus deals with the problem of endogeneity. Moreover, it provides the efficient estimation of the parameters.

### 3. Results of The Research

Following the steps explain in the methodology section, the results of the findings are summarizes in the paragraphs below. The analysis starts by introducing the main measures of summary statistics in the Table 1.

**Table 1: Descriptive Statistics**

Statistics	GCF	EFI
mean	23.41	70.04
sd	4.12	6.93
max	39.35	83.10
min	9.82	50.60
skewness	0.48	-0.15
kurtosis	4.01	2.28

Source: Author

Average economic freedom index equals 70.04 for 34 observed countries. The highest reported value of EFI equals 83.1 in 2012 in the case of Australia. With regard to the lowest value, it is reported for Turkey in the year 2005. In terms of foreign direct investment proxy, it reaches the average value of 23.41% for the sample of OECD countries. The maximum value of 39.35% is reported for the case of Estonia in 2006 while the minimum value of 9.81% is reported in Greece in 2015 which is quite expectable taking into account the economic and political situation in these countries in the period of interest. The skewness and kurtosis values imply the variables to deviate from normal distribution. Thus, we have calculated log values and used them in the research to follow. The research proceeds further to the unit root tests.

**Table 2: Unit Root Tests**

Trend included in the model	lnGFC		D.lnGFC		lnEFI		D.lnEFI	
	Stat.	p-value	Stat.	p-value	Stat.	p-value	Stat.	p-value
Levin–Lin–Chu (LLC) t* test	-7.55	0.000	-15.03	0.000	-4.17	0.000	-19.42	0.000
Im–Pesaran–Shin test	-3.95	0.000	-13.05	0.000	0.39	0.651	-15.68	0.000

Source: Author

Table 2 summarizes the results of two unit root tests with the included trend. With regard to the GFC variable, both tests agree on the rejection on null hypothesis in terms of both log level and first difference value. Thus, the variable is considered stationary. In terms of EFI, tests provide the mixed evidence on the log level value. However, both of the tests agree on the stationarity of the first difference value. Thus the variables are found to be stationary in the first difference.

In terms of linear static panel data estimators, we have employed both, fixed and random effects. Results of Hausman test suggest random effects. Coefficient with economic freedom index (Table 3) is reported to be significant and positive indicating that economic freedom attracts foreign investors in the observed countries.

**Table 3: Panel Data Estimators**

VARIABLES	(1) RE	(2) GMM
GFC L1.		0.036*** (0.006)
EFI	0.225* (0.135)	0.126*** (0.024)
Constant	-0.007 (0.003)**	-0.007 (0.000)***
Hausman test p value	0.07 0.790	
Sargan test p value		1.00
AR(II) p value		0.07
Observations	646	612

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Source: Author

However, the coefficient with EFI is significant for a 10% level of significance. In addition, RE does not take into account the potential dynamics in variables as well as the potential endogeneity issue. For this reason, GMM is employed. Results of system GMM two step estimator indicate a significant positive impact of economic freedom on foreign direct investments. Estimation issues assigned with linear static panel data estimators tend to overestimate the impact of economic freedom on FDI. Since the coefficient with economic freedom is lower than 1, it implies that foreign direct investments are inelastic to the change in economic freedom. Sargan test suggests the overall validity of instruments while the diagnostic test on second order serial correlation indicates the absence of this estimation issue. The positive impact of economic freedom on foreign direct investments is also suggested by Moussa et al. (2016) and Azman-Saini, et al. (2010), to mention a few.

To identify the causality links between the variables we have applied the Wald statistics tests. Table 4 summarizes the obtained results. The findings advocate the bidirectional causal relationship between economic freedom and foreign direct investment meaning that the economic freedom tends to attract foreign direct investment but can also be the result of the FDI inflow. This research ends by presenting the results of ARDL model.

**Table 4: DH Granger Non-Causality Test Results**

Dependent variable	Independent variable	W-bar	Z-bar	Z-bar tilde	Decision
GFC	EFI	2.018	4.198 (0.000)*	2.824 (0.005)	EFI Granger causes GFC.
EFI	GFC	14.920	22.512 (0.0000)	7.924 (0.000)	GFC Granger causes EFI.

Note: \* - p value

Source: Author

**Table 5: ARDL Model**

		Coef.	St. Error	z	P>z	95% Conf. Interval	
OECD countries	ECT						
	EFI	-0.486	1.851	-0.26	0.793	-4.11	3.14
	SR						
	ECT	-0.396	0.046	-8.68	0.000	-0.49	-0.31
	EFI	0.537	0.137	3.93	0.000	0.27	0.80
	D1.						
	_cons	2.648	0.583	4.54	0.000	1.50	3.79

Source: Author

Table 5 shows the results of long-term and short-term relationship between FDI and EFI. The error correction is not significant (for 1% level of significance). This result proves that the process does not converge over the long-term. The study reveals a positive and significant relationship between FDI and EFI only in the short-run. Thus, to it is necessary to develop first, monetary policy as well as the financial development especially financial sector in order to make FDI available to use the long-run benefit of the economic freedom.

## CONCLUSION

A few scholars have analyzed the direct impact of economic freedom on foreign direct investments. However, the empirical evidence to date agrees on the positive impact of economic freedom on the attractiveness of the host country for foreign investors. Hence, the economic freedom is expected to foster FDI.

In order to determine the direction of relationship between the variables of interest, we use the panel data framework due to the well-known fact that panel data methods increase the power of the tests. The relevance of economic freedom on foreign direct investments is explored in the panel of 34 OECD countries. The observed period ranges between 1997 and 2016. The authors aimed to include the most recent data.

Models are initially estimated using linear static panel data estimators. Results of Hausman test suggest random effects. Coefficient with economic freedom index is reported to be significant and positive indicating that economic freedom attracts foreign investors in the observed countries. However, the robustness tests indicate that the assumptions on no-autocorrelation and homoscedasticity are not satisfied.

Granger causality test suggests the bidirectional causal relationship between the variable of interest. In addition, these results imply that countries with higher levels of economic freedom are more attractive for foreign investors. In order to deal with estimation issues connected with the linear static panel data estimators, the system GMM two step estimator is suggested. Results indicate a significant positive impact of economic freedom on foreign direct investments. Estimation issues assigned with linear static panel data estimators tend to overestimate the impact of economic freedom on FDI. Lastly, ARDL models suggests the positive impact between the variables of the interest only in the short-run.

The policy implications of the general results of this paper point out that economic freedom appeared as the policy variable for attracting foreign direct investors. In order to increase FDI, policymakers need to create incentives for economic freedom in terms of property rights, government integrity, judicial effectiveness, tax burden, government spending, fiscal health, business, labor, monetary, trade, investment and financial freedom. The recommendations for future research include the necessity to take into account the components of economic freedom separately and to control for the impact of human capital that is closely connected to the knowledge spillovers results from the inflow of foreign direct investments and foreign human capital.

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