

The Determinant of Foreign Direct Investment: An Empirical Evidence from OECD Countries

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Abstract

This study examines the determinants of foreign direct investment (FDI) in OECD nations by evaluating the impact of key macroeconomic variables. The study employs scatter plot diagrams, descriptive statistics, and regression analysis. The study identifies the positive relationship between FDI and GDP per capita growth, political stability, logistics, and rule of law and the negative relationship between FDI and inflation, thereby emphasizing macroeconomic stability. These insights present important implications for policymakers aiming to enhance FDI inflow by fostering favorable economic conditions and institutional frameworks.

Keywords: Foreign Direct Investment, OECD, Scatter plot, regression

Introduction

Through the introduction of capital, technology, and knowledge, foreign direct investment (FDI) makes a substantial contribution to economic growth and development. Foreign direct investment is a crucial source of funding for OECD nations, as it is necessary to promote innovation and increase global competitiveness. Understanding the factors that influence foreign direct investment (FDI) is essential because it helps policymakers create an environment that encourages economic expansion and FDI.

This study employs regression analysis, descriptive statistics, and scatter plot diagrams to analyze the determinants of foreign direct investment in OECD countries. The empirical evidence highlight that political stability, logistics, GDP per capita growth, inflation, and the rule of law are statistically significant determinants of FDI. The study of these variables gives us useful information about how different factors affect foreign direct investment. It also gives policymakers suggestions on how to make their economy more attractive to investors.

The structure of this paper is as follows: section 2 reveals the relevant literature on FDI determinants. Section 3 describes the data and methodology used in the analysis. Section 4

represents the empirical findings. Finally, section 5 concludes with policy implications and suggestions for future research.

Literature Review

Foreign direct investment (FDI) significantly contributes to the economic development of host countries through cash inflows, knowledge transfer, and job creation. Over the years, a large number of studies have looked at the factors that influence foreign direct investment. This literature review presents the principal findings of many studies to provide a thorough grasp of the determinants influencing FDI. Faeth (2008) indicated that ownership advantages are a major factor of foreign direct investment (FDI). This paper indicates that horizontal FDI is motivated by consumer proximity, whereas vertical FDI is affected by variations in factor endowments. Biswas (2002) examined both conventional and unconventional determinants affecting FDI through an analysis of 44 countries. Conventional factors such as infrastructure, wage levels, and market size strongly influence foreign direct investment (FDI), whereas non-conventional elements such regime kinds, property rights, and governance equity are equally crucial. Schneider and Frey (1985) investigated foreign direct investment in less developed nations by evaluating economic and political factors. This analysis identified the primary determinant variables as real GNP per capita, GNP growth rate, inflation, wage costs, and the availability of skilled labor. Tatoglu and Glaister (1998) discovered that firm-specific advantages significantly influence foreign direct investment (FDI). The ownership structure of foreign direct investment varies according to transaction-specific costs. Blonigen and Piger (2011) conducted a global analysis on the determinants of FDI, identifying a comprehensive collection of 56 variables. This analysis indicates that regional trade agreements, GDP, distance, and relative labor endowments significantly influence FDI. Nevertheless, the attributes of the host country exerted a diminished influence on foreign direct investment (FDI). A study by Kumari and Sharma (2017) analyzed FDI inflows in 18 developing nations, revealing that FDI is significantly affected by market size, trade openness, and human capital. This analysis identified infrastructure and inflation as critical factors of FDI. Aqeel and Nishat (2004) conducted a study in Pakistan and found that reducing import tariffs and corporation tax rates favorably impacted FDI growth. Moreover, the appreciation of exchange rates was seen to stimulate foreign direct investment (FDI). This analysis highlighted that policy enhancements substantially facilitated the rise of FDI inflows. Kolstad and Villanger (2008) examined the influence of political and institutional determinants on foreign direct investment (FDI) in 57 countries, emphasizing the significance of democracy, institutional quality, and political risk. Their findings indicated that political and institutional variables greatly affect foreign direct investment (FDI), while also noting that FDI is mostly driven by local market size rather than trade openness. Mottaleb (2007) emphasizes the

significance of modern infrastructure, particularly internet and telephone services, in attracting foreign direct investment (FDI). This study concludes that nations with a more business-friendly environment and reduced corruption levels are more likely to successfully attract foreign direct investment (FDI). Islam and Beloucif (2023) conducted a systematic literature analysis across 150 countries, analyzing the economic, political, institutional, and social aspects that affect foreign direct investment (FDI). This analysis concludes that market size is the primary driver, whereas trade openness, infrastructure quality, labor costs, and microeconomic stability also affect FDI. The authors observe that the influence of these elements differs according to the country's level of development.

Tocar (2018) analyzes several institutional, technological, infrastructural, and economic indicators influencing global foreign direct investment. This study indicates that infrastructure, cheap labor costs, and market size are significant determinants of foreign direct investment (FDI). In their 2019 study, Mahbub and Jongwanich examine the determinants of foreign direct investment (FDI) in Bangladesh, revealing that regulatory considerations are the most influential element. Furthermore, proficient labor, gas infrastructure, and economic growth significantly contribute to attracting foreign direct investment (FDI). Asongu, Akpan, and Isihak (2018) examined foreign direct investment (FDI) in the BRICS and MINT nations, identifying trade liberalization, market size, and infrastructural accessibility as significant FDI determinants. This analysis indicates that foreign direct investment (FDI) is minimally influenced by institutional quality or natural resources. Dees (1990) examines foreign direct investment (FDI) in China during the 1990s and concludes that trade relations and market size positively influence FDI. Moreover, foreign direct investment in China significantly influences economic growth. Agiomirgianakis, Asteriou, and Papathoma (2003) analyzed foreign direct investment in OECD countries, emphasizing variables such as GDP per capita, GDP growth, trade openness, human capital, government spending, and infrastructure. This study determined that foreign direct investment in OECD nations is significantly affected by human capital, trade openness, infrastructure development, and GDP growth. Çevis and Çamurdan (2007) examined 17 emerging economies, revealing that FDI inflows are positively correlated with GDP growth, trade openness, and real interest rates, but negatively impacted by inflation. Singhania and Gupta (2011) demonstrated that inflation and research and development significantly affect foreign direct investment (FDI). Mottaleb and Kalirajan concluded that trade openness, GDP growth rates, and elevated GDP are significant determinants of FDI attraction after evaluating inflows in 68 countries. Yang, Groenewold, and Tcha (2000) examined foreign direct investment in Australia by analyzing parameters such as interest rates, GDP, trade openness, wages, industrial conflicts, and inflation. Their results show that higher interest rates have a positive effect on FDI.

Empirical Evidence

Data

The Appendix 1 presents various economics and foreign direct investment variables from the World Bank World Development Indicator data set. The foreign direct investment variables include net current US\$, logistics performance index as the ability to track and trace consignments (1=low to 5=high), real effective exchange rate index (2010 = 100), taxes on international trade as % of revenue, rule of law, political stability and absence of violence/terrorism, population, inflation as a consumer price as an annual %, labor force participation rate as % of total population ages 15+, and GDP per capita growth as an annual %.

Descriptive Statistics

Table 1. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
FDI_net	37	166.8097	436.6027	-256.52	1558.719
Logistic	37	3.749	.401	3	4.3
Exchange Rate	32	95.446	14.9	61.006	128.511
Taxes	19	1.111	1.035	0	3.052
Rule of Law	37	1.113	.69	-.867	1.958
Political Stability	37	.511	.595	-1.285	1.312
Population	37	.3708	.60552	.0038	3.332
Inflation	37	10.844	11.152	2.498	72.309
LFP	37	61.872	5.028	49.1	74.603
GDP_percapita_g	37	3.122	2.243	-1.783	8.292

Table 1 provides descriptive statistics for various economic indicators used in the analysis. FDI_net has 37 observations with a mean of 166.809 and a standard deviation of 436.6027, ranging from a minimum of -256.52 to a maximum of 1558.719.

Logistic has 37 observations with a mean of 3.749 and a standard deviation of .401, ranging from a minimum of 3 to a maximum of 4.3.

Exchange Rate has 32 observations with a mean of 95.446 and a standard deviation of 14.9, ranging from a minimum of 61.006 to a maximum of 128.511.

Taxes has 19 observations with a mean of 1.111 and a standard deviation of 1.035, ranging from

a minimum of 0 to a maximum of 3.052.

Rule of Law has 37 observations with a mean of 1.113 and a standard deviation of .69, ranging from a minimum of -.867 to a maximum of 1.958.

Political Stability has 37 observations with a mean of .511 and a standard deviation of .595, ranging from a minimum of -1.285 to a maximum of 1.312.

Population has 37 observations with a mean of .3708 and a standard deviation of .60552, ranging from a minimum of .0038 to a maximum of 3.332.

Inflation has 37 observations with a mean of 10.844 and a standard deviation of 11.152, ranging from a minimum of 2.498 to a maximum of 72.309.

LFP has 37 observations with a mean of 61.872 and a standard deviation of 5.028, ranging from a minimum of 49.1 to a maximum of 74.603.

GDP_percapita_g has 37 observations with a mean of 3.122 and a standard deviation of 2.243, ranging from a minimum of -1.783 to a maximum of 8.292.

Figure 1. Scatter plot graphics of FDI vs. GDPpercapitagrowth

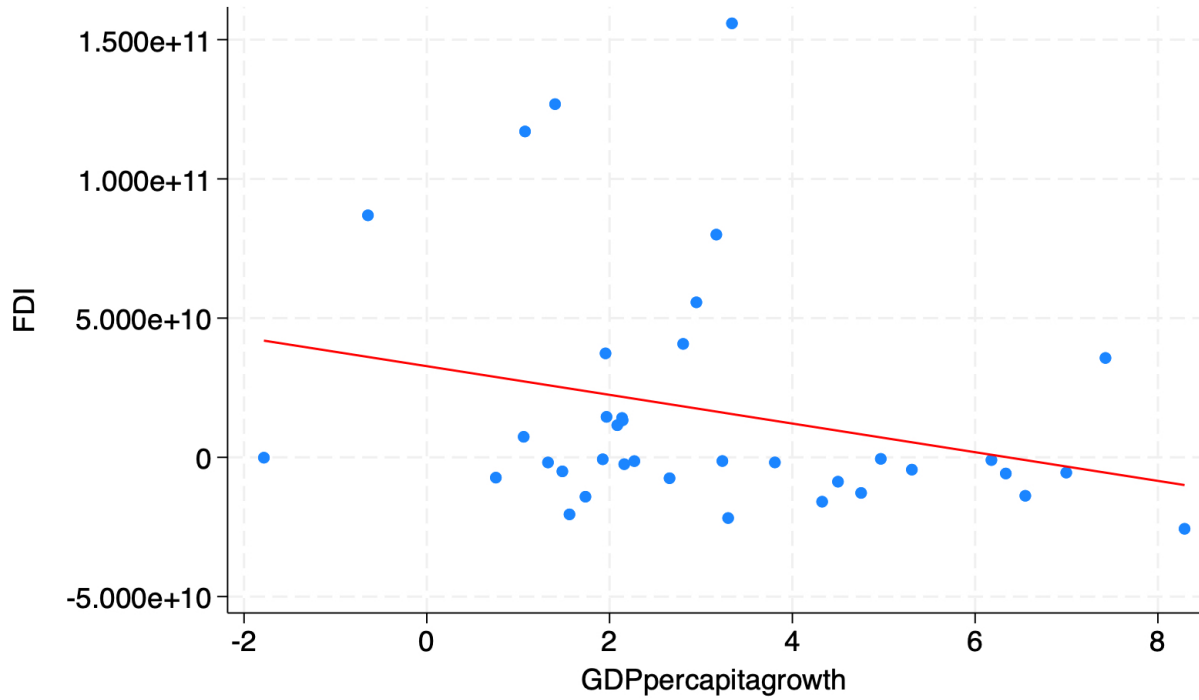


Figure 1 indicates a negative correlation between FDI_net and GDP_percapita, suggesting that a higher level of GDP_percapitagrowth might contribute to a lower level of FDI_net.

Figure 2. Scatter plot graphics of FDI vs. Labor Force Participation Rate

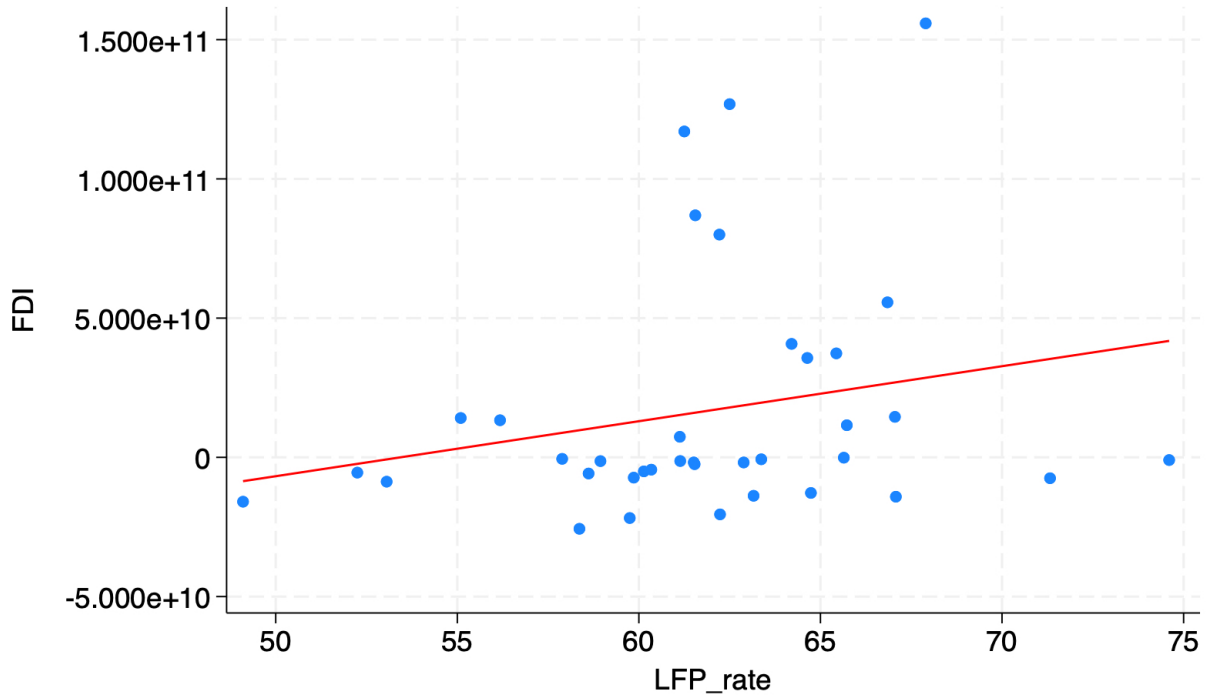


Figure 2 indicates a positive correlation between FDI_net and LFP_rate, suggesting that a higher level of LFP_rate might contribute to a higher level of FDI_net.

Figure 3. Scatter plot graphics of FDI vs. Taxes on International Trade

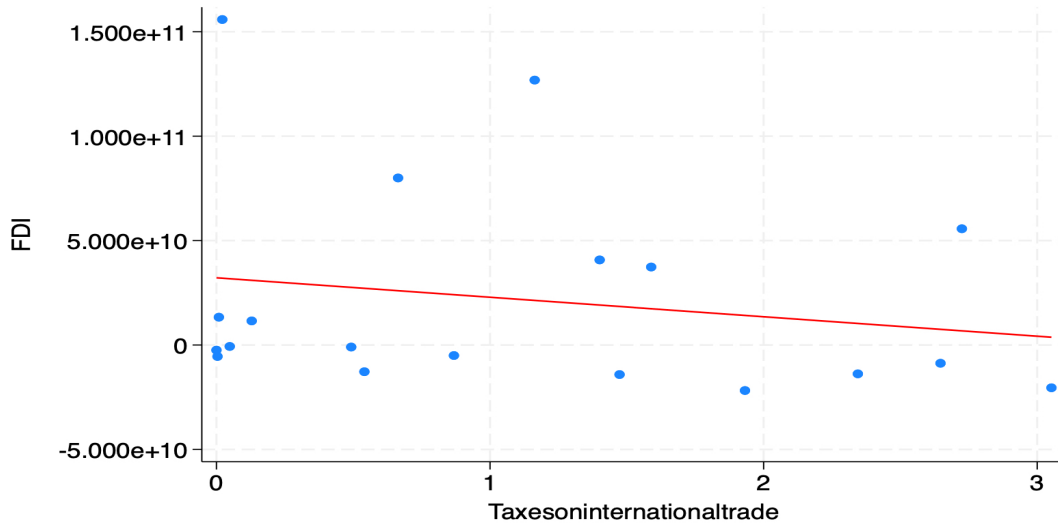


Figure 3 indicates a negative correlation between FDI_net and Taxes on international trade, suggesting that a higher level of Tax on international trade might contribute to a lower level of FDI_net.

Figure 4. Scatter plot graphics of FDI vs. Rule of Law

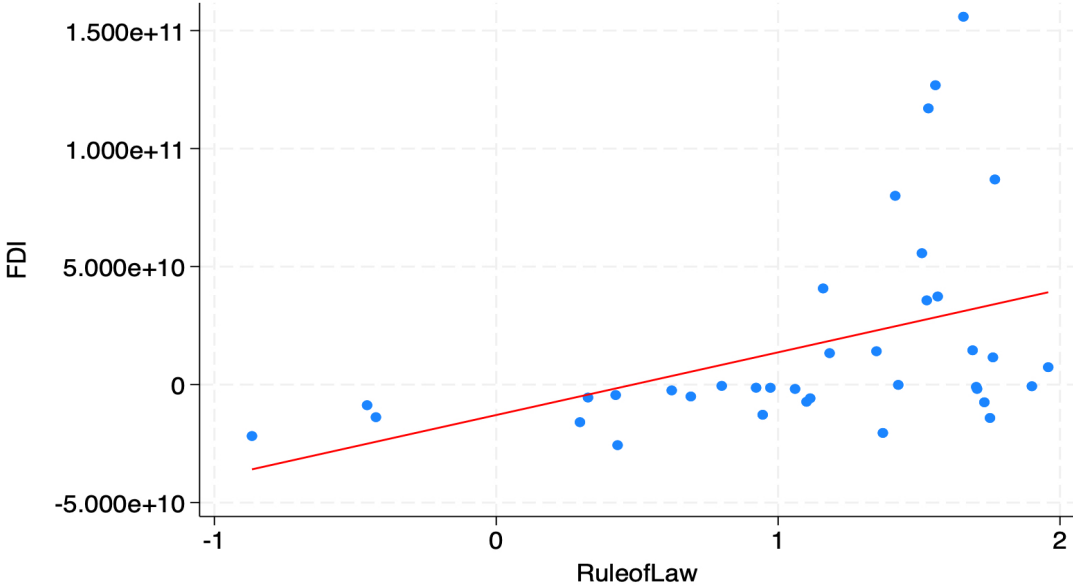


Figure 4 indicates a positive correlation between FDI_net and Rule of Law, suggesting that a higher level of Rule of Law might contribute to a higher level of FDI_net.

Figure 5. Scatter plot graphics of FDI vs. Logistics Performance

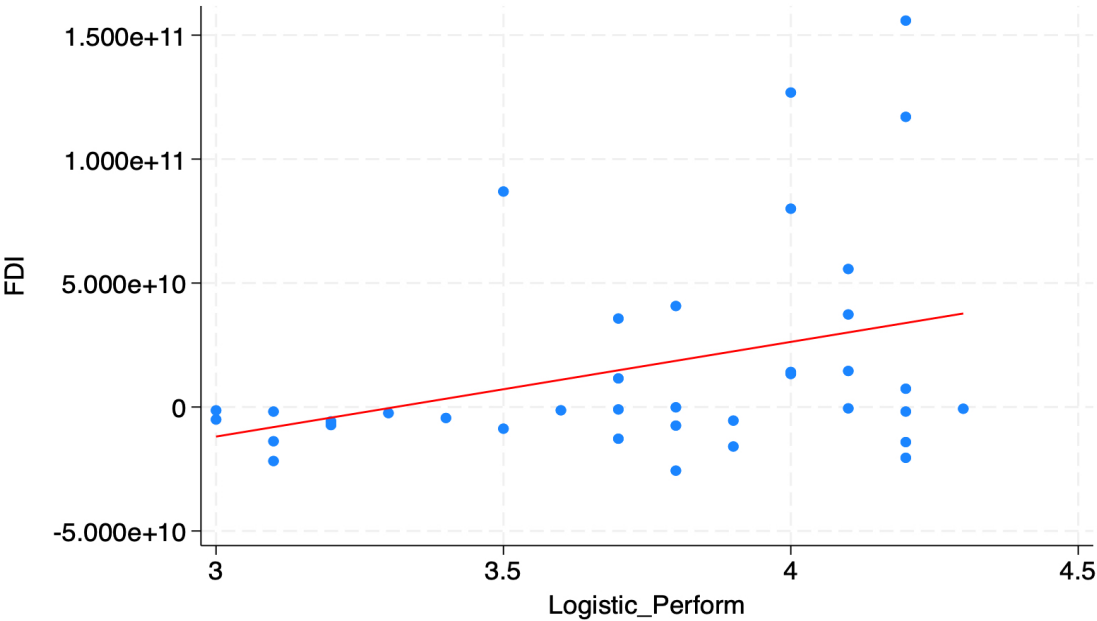


Figure 5 indicates a positive correlation between FDI_net and the Logistic performance index, suggesting that a higher level of logistic performance index might contribute to a higher level of FDI_net.

Figure 6. Scatter plot graphics of FDI vs. Exchange Rate

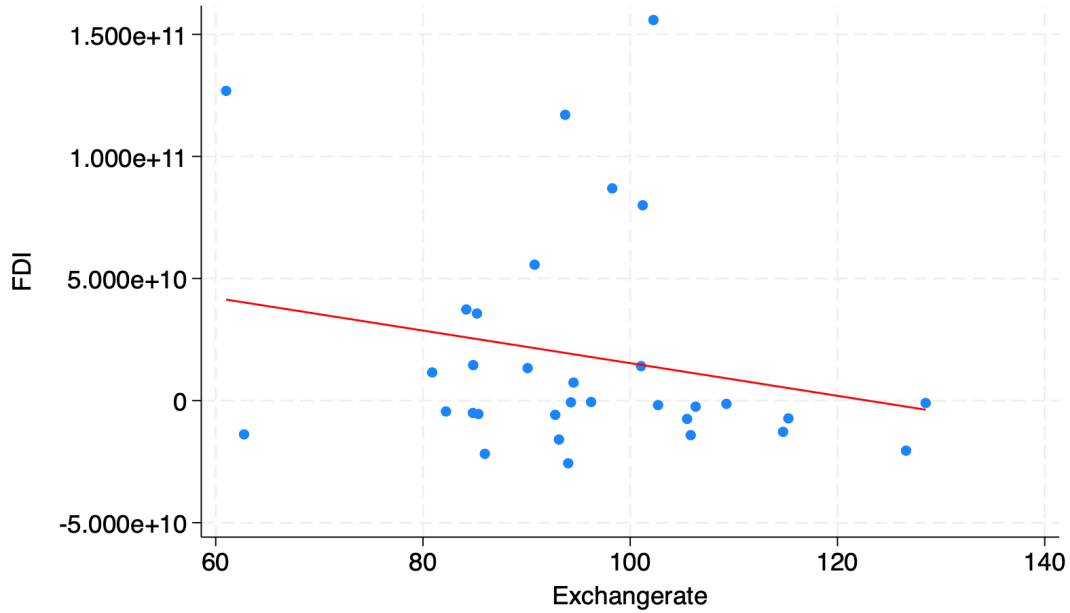


Figure 6 indicates a negative correlation between FDI_net and Exchange rate, suggesting that a higher level of exchange rate might contribute to a lower level of FDI_net.

Figure 7. Scatter plot graphics of FDI vs. Inflation

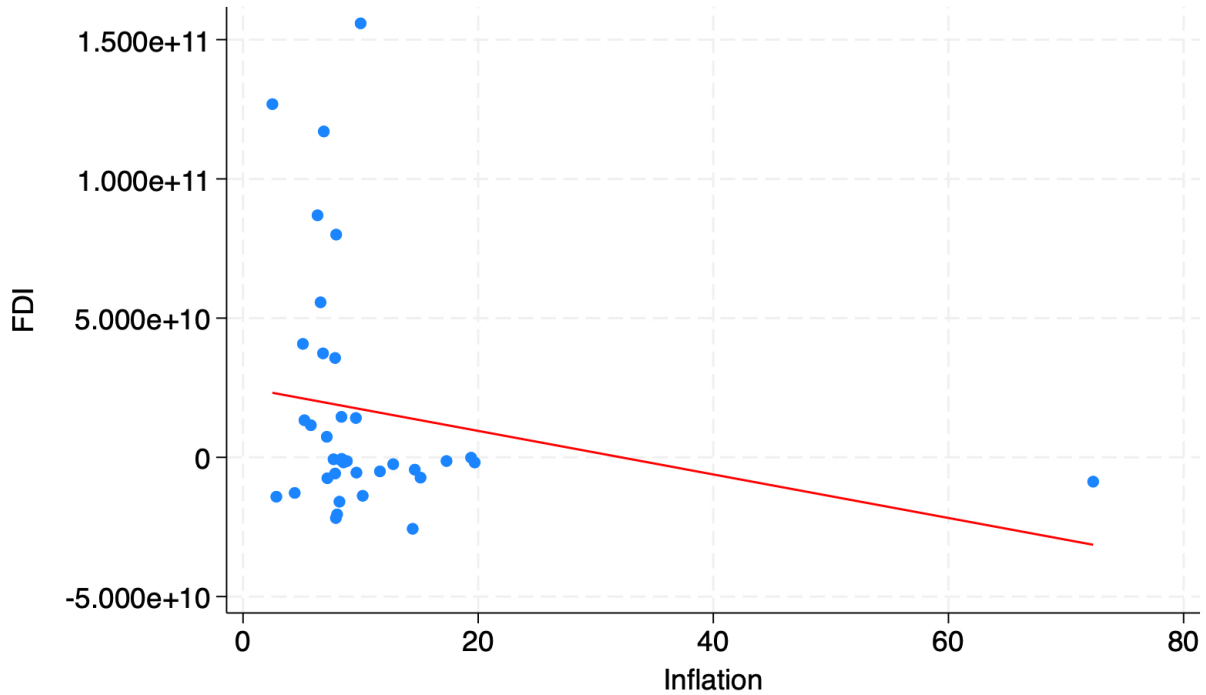


Figure 7 indicates a negative correlation between FDI_net and Inflation, suggesting that a higher level of Inflation might contribute to a lower level of FDI_net.

Model

$$Y_I = \beta_0 + \beta_1 X_{1I} + \beta_2 X_{2I} + \dots + \beta_n X_{nI} + \varepsilon_I$$

Where Y_I is the dependent variable for observation i which refers to foreign direct investment net. β_0 is a constant term, representing the expected value of the dependent variable when dependent variables are zero. β_1 to β_n are the coefficient for the independent variables, which include GDP_per capita_g, LFP, Rule of Law, Inflation, Political Stability, Population, Taxes, Exchange Rate, and Logistic. ε_I is the error term, which represents the difference between the actual value and the predicted value from the model.

Findings

Table 1a. Regression Analysis

	(1)	(2)	(3)	(4)
VARIABLES	FDI_net	FDI_net	FDI_net	FDI_net
GDP_percapita_g	-51.507*			
	(26.178)			
LFP		19.760		
		(12.439)		
Rule of Law			265.607***	
			(76.380)	
Inflation				-7.822*
				(4.162)
Constant	327.616**	-1,055.797	-128.826**	251.635**
	(128.954)	(733.958)	(49.673)	(98.268)
Observations	37	37	37	37
R-squared	0.070	0.052	0.176	0.040

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

According to the regression analysis in Table 1, FDI_net is negatively and statistically significantly impacted by both inflation and GDP per capita growth. Both of these effects have p-values below 0.10. Conversely, FDI_net is positively and statistically significantly impacted by the rule of law, while Models 1 and 4 show that higher inflation slightly lowers FDI_net. FDI_net also goes down a little when GDP per head grows. Overall, the study shows that the Rule of Law has the biggest and most positive effect on foreign direct investment. On the other hand, GDP per capita growth and inflation have negative effects on FDI_net.

Table 1b. Regression Analysis

	(1)	(2)	(3)	(4)	(5)
VARIABLES	FDI_net	FDI_net	FDI_net	FDI_net	FDI_net
Political Stability	233.073***				
	(78.311)				
Population		29.64			
		(142.95)			
Taxes			-93.251		
			(103.948)		
Exchange Rate				-6.683	
				(5.678)	
Logistic					382.090**
					(159.986)
Constant	47.649	155.814**	322.020	821.746	-1,265.510**
	(51.279)	(73.719)	(194.371)	(566.782)	(551.087)
Observations	37	37	19	32	37
R-squared	0.101	0.002	0.037	0.046	0.123

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 1b shows that Political Stability and Logistics are important factors that affect FDI_{net}, with a p values less than 0.10, which means that higher FDI is linked to better political stability and logistics. Population, taxes, and the exchange rate don't have statistically significant effect on FDI_{net}, which suggests they can't explain much in this case. This regression analysis highlights the importance of Political Stability and Logistics as key drivers of foreign direct investment.

Conclusion

This study explains the main determinants of foreign direct investment (FDI) in OECD nations, highlighting the significance of important macroeconomic factors in shaping the decisions about foreign investments. The analysis indicates that GDP per capita growth, political stability, logistics, and the rule of law are vital for attracting FDI inflows. Conversely, higher inflation results in reduced FDI inflows.

Policymakers in OECD countries should focus on improving economic stability, enhancing governance frameworks, and fostering an investment-friendly environment to encourage greater FDI inflows.

Future studies may investigate the influence of green investment on foreign direct investment patterns to yield more comprehensive insights.

Appendix

Appendix 1. Definition of Variable

Ticker	Variable	Definition	Source
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FDI_net	Foreign direct investment, net (BoP, current US\$)/10 ⁸	Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments.	WDI: World Bank
Logistic	Logistics performance index: Ability to track and trace consignments (1=low to 5=high)	Data are from the Logistics Performance Index survey conducted by the World Bank in partnership with academic and international institutions and private companies and individuals engaged in international logistics.	WDI: World Bank

Exchange Rate	Real effective exchange rate index (2010 = 100)	Real effective exchange rate is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs.	WDI: World Bank
Taxes	Taxes on international trade (% of revenue)	Taxes on international trade include import duties, export duties, profits of export or import monopolies, exchange profits, and exchange taxes.	WDI: World Bank
Rule of Law	Rule of Law: Estimate [RL. EST]	Rule of law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	WDI: World Bank

Political Stability	Political Stability and Absence of Violence/ Terrorism: Estimate	Political Stability and Absence of Violence/ Terrorism measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.	WDI: World Bank
Population	Population, total/10 ⁸	Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship. The values shown are midyear estimates.	WDI: World Bank
Inflation	Inflation, consumer prices (annual %)	Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. The Laspeyres formula is generally used.	WDI: World Bank

LFP	Labor force participation rate, total (% of total population ages 15+) (modeled ILO estimate)	Labor force participation rate is the proportion of the population ages 15 and older that is economically active: all people who supply labor for the production of goods and services during a specified period.	WDI: World Bank
GDP_percapita_g	GDP per capita growth (annual %)	Annual percentage growth rate of GDP per capita based on constant local currency. GDP per capita is gross domestic product divided by midyear population.	WDI: World Bank

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