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The Determinants of FDI Inflows in Romania

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ABSTRACT

The growth of foreign direct investment around the world has been significant in recent years. It is a critical element of any and every nation's economy, including Romania's. The main objective of the study is to examine the potential determinants of FDI inflows in Romania during the period from 1997 to 2019. We employed the Autoregressive Distributed Lag (ARDL) bound co-integration technique to identify the potential determinant factors of FDI inflows such as trade openness, gross domestic product, interest rate, education level of the labor force, exchange rate, inflation, and control of corruption. As per the findings, the log of gross domestic product and labor force education variables have a positive impact on inbound FDI, whereas trade openness has a negative impact in the long run. In the long run, other variables, such as interest rates, real effective exchange rates, and corruption control variables, cannot explain the variation in inbound FDI. In the short run, the log of gross domestic product, labor force education, real effective exchange rate, and corruption control explain the variation in FDI inflows, although the interest rate and inflation are insignificant. The findings revealed some important policy implications, including the need to maintain a stable exchange rate and promote strong open trade policies to improve the investment climate, increase gross domestic product to create needed markets for foreign investors, improve labor force education by introducing training and workshops, and control corruption by implementing rules that are more effective.

Keywords: *ARDL Bound Test, Determinants of Inward FDI, Romania*

Introduction

Foreign direct investment is an important component of economic development criteria, globalization, and the global economy, and most countries have paid attention to attracting and promoting FDI by using numerous strategies, especially some trade and market-oriented policies,

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developing infrastructure facilities, increasing the quality of their labor force, improving the investment environment, controlling corruption, etc. In general, there are several advantages of FDI for the economy of the receiving country. Foreign direct investment (FDI) is found to play a significant role in developing and enhancing economic growth while helping to improve a country's technological sector and getting access to new job opportunities. All of these advantages have a considerable impact on a developing country's economic growth (Blomström & Kokko, 2003; Rathnayaka Mudiyanselage et al., 2021). And also, in the globalized era, foreign direct investment has been regarded as one of the most important drivers of international capital flows to developing countries, emerging economies, and transition economies (Organisation for Economic Cooperation and Development, 2002). It creates an international linkage among nations and is a very important feature of financial globalization. This is why, in order to attract economic benefits, countries such as Romania engage in marketing through foreign direct investment promotion. It is, however, critical to comprehend what these countries have to offer foreign investors. This can be understood by looking at what motivates investors to invest in a different country. Foreign direct investment is a significant theme for many countries because it helps in many ways, such as promoting economic growth, access to management skills, financial backing, marketing skills, and job creation (Kariuki, 2015).

As a developing country that has drawn high levels of foreign investment in recent decades, it is preferable to determine the factors affecting FDI. Foreign direct investments represent a considerable proportion of the Romanian economy. It has an impact on the financial situation, balance of payments, and market structure of the country (Statista Research Department, 2022). Furthermore, as explained by Mirela et al. (2015), foreign direct investment is one of the main ways in which Romania gets involved in international economic structures. Many investors prefer to invest in Romania. One of the most notable advantages of investing in Romania is its strategic geographical location. Romania is located in a central location within the European Union. It allows overseas investors to enter other European marketplaces and the markets of the Middle East. Furthermore, due to its large local markets, rapidly expanding industrial and manufacturing sectors, low production costs, and well-educated workforce, Romania attracts foreign direct investment. The Romanian government creates a variety of marketing strategies to draw in foreign investors. Romania ranks among the lowest tax rates in the European Union (Mihăilă, 2014). The tax regime fairly tends to favor advanced manufacturing investment and new entrepreneurship. Therefore, in this particular instance, it is essential to investigate potential factors that influence FDI inflows into Romania.

FDI in Romania, in particular, has a positive impression. The Romanian government adopted a law establishing foreign investment in the country in 1991. Under the law, foreign investors could take advantage of a number of potential financial advantages, such as tax breaks on capital spending, low-interest loans, and tax breaks on investing in real estate. Donciu (2013) proved that after the Foreign Investment Law was adopted and the Romanian Development Agency was established in March 1991, Romania started its operations and the establishment of a process to take a leading role in attracting foreign direct investment. Initially, the inflow of FID into Romania

increased gradually until 1998. The graph in Figure 1 depicts Romania's net foreign direct investment from 1990 to 2019. Though inward foreign direct investment in Romania has fluctuated in recent years, it has generally increased from 2000 to 2019, reaching $7.365 billion in 2019 (The World Bank Group, 2021). Various domestic and international economic activities influence FDI inflows into Romania. The highest net FDI inflow was recorded in 2008, at USD 13.67 billion. After that, due to the impact of the European economic crisis, Romania has seen a decrease in FDI inflows since 2008. After the instability of the financial market, FDI inflows in Romania reported the lowest value in 7 years, at $3.2 billion, in 2011. In 2019, Romania received $7.365 billion in net FDI inflows. After the start of the COVID-19 global epidemic at the end of 2019, Romania, as well as the rest of the world, is still feeling the effects of the outbreak. In the most recent year of 2020, FDI inflows were USD 3.6 billion, which was half of what was received prior to the pandemic. In recent years, industrial production, manufacturing, real estate transactions, trade, financial intermediation, and insurance were among the key sectors attracting FDI in Romania, according to the National Bank of Romania (2019).

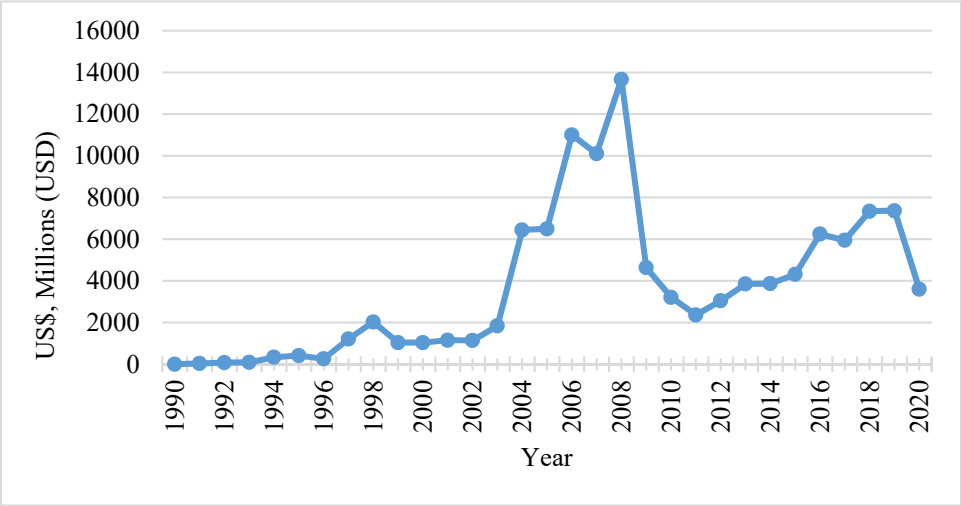

Figure 1. Inward Foreign Direct Investment in Romania

Source: World Development Indicator Romania (2021)

In order to attract FDI, many countries have adopted a variety of reforms. Trade openness, market size, inflation rate, labor force, interest rate, infrastructure facilities, exchange rate, good governance indicators, and other factors all influence FDI decisions in the country. For example, Rathnayaka Mudiyanselage et al. (2021) analyzed how trade openness impacts on foreign direct investment inflows in Romania and the direction of the causality between FDI inflows and trade openness. Janicki and Wunnava (2004) investigated bilateral FDI between European Union members and Central and Eastern European economies. Romania is also in that sample country.

Under the topic of "Determinants of Foreign Direct Investment Development," Donciu (2013) examined the performance of Romania in attracting foreign direct investment. This study employed some statistical data and descriptive analysis. Popovici et al. (2014) examined the

relationship between gross domestic product and foreign direct investment in Romania using an ARMA technique for the period 1990-2013 and estimated the value of the GDP level for further attracting FDI. It is essential to recognize the prospective drivers of FDI inflows into Romania in recent years with potential determinants of FDI. Previous research has covered some potential determinants; however, government indicators of corruption factors have not been thoroughly examined, and no study has been conducted using recent data and sophisticated econometric techniques. It is critical to identify the potential drivers of FDI inflows into Romania. It will assist the nation by clarifying implications for policy and attracting more FDI into the country. As a result, we employed trade openness, GDP, interest rate, labor force education level, exchange rate, inflation rate, and corruption control variables to influence FDI inflows into Romania from 1997 to 2019.

Literature review

The results of the growing importance and interest in the causes and effects of foreign direct investment have led to the creation of various theories focusing on determining the factors that influence FDI. Previous research has also classified the elements that influence FDI inflows into several groups. For example, in several studies (Agarwal, 1980; Moosa, 2002; Faeth, 2009; Denisia, 2010). The electric theory of Dunning is one of the ideas that can accurately describe the potential determinants for FDI inflows (Saleem et al., 2021). The OLI paradigm is another name for this eclectic theory (Dunning, 2016).

The eclectic theory is a business and economic method for determining the attractiveness of foreign direct investment. Ownership, location, and internalization are the major sources of this theory. This may have an impact on a company's choice to integrate with another company. This theory mainly describes the potential determinants of FDI inflows. Previous scholars have conducted a variety of empirical studies in order to determine the factors that influence FDI inflows. However, the variables identified as FDI determinants are different from country to country and research to research. As a result, creating a single list of determinants is impractical. It is because the value of some variables has increased over time while the importance of other variables has decreased. This study focuses on empirical studies conducted by a number of academics on the determinants that affect foreign direct investment. In this literature review part, we provide brief summaries of the research examining the determinants of inward foreign direct investment into diverse economies.

Several studies have been conducted to identify the factors that influence FDI inflows in various countries and regions. As for single country analysis, (Ang, 2008; Dar et al., 2004; Ebiringa & Yadirichukwu, 2013; Jayasekara, 2014; Kinyanjui & Mansoob, 2015; Koojaroenprasit, 2013; Mugableh, 2021; Wafure & Nurudeen, 2010; Wijeweera & Mounter, 2008) studied the determining factors of foreign direct investment. Some studies examined the determinants of FDI using cross-country analysis. As examples, (Demirhan & Masca, 2008; Hailu, 2009; Hoang & Bui, 2015; Jha et al., 2013; Kumari & Sharma, 2017; Onyeiwu & Shrestha, 2004; Phung, 2016; Ranjan & Agrawal, 2011; Saini & Singhania, 2018; Sajilan et al., 2019; Wahid et al., 2009). In Romania

as well, some research has examined the impact of FDI. In line with a review of previous empirical studies, the potential factors employed in this study are presented below.

Trade openness: In our study, we emphasize trade openness as a crucial factor determining FDI inflows. In theory, trade restrictions or liberalization could have a positive, negative, or insignificant influence on inward FDI. The degree of openness is measured by the total of imports and exports generalized by gross domestic product. Theoretically, the openness of trade either raises or lowers foreign direct investment, depending on the country's trade sector policies, actions, integration, etc. Many empirical studies have defined trade openness as the sum of total exports plus total imports generalized by GDP, trade as a ratio of GDP, or exports and imports separately.

According to OECD Science (2011), the ratio of trade to GDP is commonly used to measure the relative importance of foreign and domestic transactions. Several studies have been conducted. Several empirical studies (Kandiero & Chitiga, 2006; Demirhan & Masca, 2008; Cantah et al., 2014; Güriş & Gözgör, 2015; Sazali et al., 2018; Zaman et al., 2018; Asiamah et al., 2019; Sajilan et al., 2019) found that trade openness caused an increase in inward foreign direct investment. Rathnayaka Mudiyanselage et al. (2021) indicated that trade openness decreases inward foreign direct investment, whereas Vijayakumar et al. (2010) found an insignificant impact.

Market size: The size of the market is one of the key determinants of the inflow of FDI. To determine market size, several studies use variables such as GDP, GDP per capita, and the rate of economic growth. The markets of larger economies should get higher inflows than those of smaller countries. An increase in market size attracts more FDI flows, as observed by (Ranjan & Agrawal, 2011; Güriş & Gözgör, 2015; Aziz & Mishra, 2016; Sazali et al., 2018; Asiamah et al., 2019; Sajilan et al., 2019; Wickramarachchi, 2019). Ho and Ahmad (2011) indicated that GDP negatively affects inward FDI.

Interest rate: The interest rate variable represents the cost of capital. It also shows the price of setting up production activities and businesses. Low-interest rates will encourage investors to raise capital and secure their investment activities. Because they expected a negative association between interest rates and FDI, the authors chose lending rates as the variable in their analysis. Interest rate increases, as Asiamah et al. (2019), and Tri et al. (2019) have found, reduce FDI inflow.

Education level of the labour force: Foreign investors are more concerned with the education level of the workforce compared to what domestic investors expect. The quality of your workforce can help you achieve your cost-cutting objectives. They prefer to invest in places where high-quality human resources are available. Workers with greater education find it easier and faster to understand and accept new technology. As a result, work quality may have a substantial impact on FDI. According to Rathnayaka Mudiyanselage et al. (2021) the level of education of the labor force has a great influence on inward foreign direct investment.

Real effective exchange rate: In some studies, the money exchange rate has been observed to have a favorable impact on FDI inflows. Some have a negative impact, whereas others have shown an insignificant impact. The majority of empirical studies (Dinda, 2012; Castro et al., 2013; Jha et al., 2013; Kumari & Sharma, 2017; Mugableh, 2015; Tri et al., 2019) revealed that an increased

exchange rate attracted FDI inflows. An increase in the exchange rate decreased FDI flows observed by Ang (2008), Ho and Ahmad (2011), Ebiringa and Yadirichukwu (2013), Asiamah et al. (2019), and Wickramarachchi (2019). Das (2020) indicated that the exchange rate has no statistically significant impact on inward foreign direct investment.

Inflation: In empirical studies, the rate of inflation is frequently used as a proxy for macroeconomic uncertainty. The rate of inflation has long been recognized as one of the key factors determining foreign direct investment inflows. Inflation is measured using the Consumer Price Index (CPI) and the Wholesale Price Index (WPI). In many studies, Demirhan and Masca (2008), Ranjan and Agrawal (2011), Dinda (2012), Phung (2016), and Wickramarachchi (2019) discovered a negative relationship between inflation and FDI inflows. Some studies found that the inflation rate was an insignificant determinant of FDI inflows (Onyeiwu & Shrestha, 2004; Azam & Lukman, 2010; Kumari & Sharma, 2017; Rathnayaka Mudiyanselage et al., 2021).

Control of corruption: As per the theory, the higher the level of corruption, the lower the FDI flows. Corruption levels can be measured using the World Bank's Worldwide Governance Indicators control of corruption (COC) Index and corruption perception index (CPI). Control of corruption is used as one of the non-economic factors in many studies as a determinant factor of FDI (Vijesandiran & Vinayagathasan, 2020). Many studies found a positive relationship between control of corruption and foreign direct investment inflows (Alemu, 2012; Hoang & Bui, 2015).

Methodology

Data sources and description of variables

The study used annual time series data extracted from the World Development Indicator and World Governance Indicator, 2020, spanning the years 1997–2019. The time span was based on the maximum number of observations and the availability of data. To identify the potential factors that influence inward foreign direct investment in Romania throughout the time span, we employ determinant factors such as gross domestic product, trade openness, interest rate, education, exchange rate, inflation, and control of corruption. The choice of the potential variables is based on several reviews of the literature and the model analysis using econometric analysis.

Table 1.

Description of variables

Variable	Description
FDI	Per capita Foreign Direct Investment Inflows (Current US$)
TOP	Trade Openness (Exports + Imports)/GDP
LGDP	Gross Domestic Product (current US$)
INT	Lending Interest Rate (%)
EDU	Labour Force Education (% of total working-age population with advanced education)
EXR	Real Effective Exchange Rate Index (2010 = 100)
INF	Inflation, Consumer Prices (annual %)
COC	Control of Corruption (%)

Source: Authors' own research, 2020.

Regression model and estimation methods

This study adopted the theoretical framework to examine the potential factors for foreign direct investment inflows in Romania following the study that was conducted by Rathnayaka Mudiyanselage et al. (2021). Furthermore, modified the model by adding the interest rate variable, and control of corruption variable. The functional form model specification is shown in (Eq.1) below.

$$FDI = f(TOP, GDP, INT, EDU, EXR, INF, COC) \quad \text{(Eq.1)}$$

The above functional form can be specified in the following econometric model equation (Eq.2):

$$LFDI_t = \theta_0 + \theta_1 FDI_t + \theta_2 TOP_t + \theta_3 LGDP_t + \theta_4 INT_t + \theta_5 EDU_t + \theta_6 EXR_t + \theta_7 INF_t + \theta_8 COC_t + \varepsilon_t \quad \text{(Eq.2)}$$

Where, θ_1 to θ_8 are the slope of the coefficients and ε_t is the white noise error term.

The ARDL model examines whether or not there is a long-run and short-run relationship between the variables. When all of the variables are stationary purely at the level I (0), purely at the first different I (I), or mixed stationery, the ARDL model is used (Pesaran et al., 2001).

Equation (3) represents an ARDL representation of equation (2) as follows:

$$\begin{aligned}\Delta FDI_t = {} & \theta_0 + \sum_{i=1}^{n} \theta_{1i} \Delta FDI_{t-i} + \sum_{i=0}^{n} \theta_{2i} \Delta TOP_{t-i} + \sum_{i=0}^{n} \theta_{3i} \Delta LGDP_{t-i} + \sum_{i=0}^{n} \theta_{4i} \Delta INT_{t-i} + \sum_{i=0}^{n} \theta_{5i} \Delta EDU_{t-i} \\ & + \sum_{i=0}^{n} \theta_{6i} \Delta EXR_{t-i} + \sum_{i=0}^{n} \theta_{7i} \Delta INF_{t-i} + \sum_{i=0}^{n} \theta_{8i} \Delta COC_{t-i} + \theta_9 FDI_{t-1} + \theta_{10} TOP_{t-1} + \theta_{11} LGDP_{t-1} \\ & + \theta_{12} INT_{t-1} + \theta_{13} EDU_{t-1} + \theta_{14} EXR_{t-1} + \theta_{15} INF_{t-1} + \theta_{16} COC_{t-1} + \varepsilon_t\end{aligned}$$

(Eq.3)

After establishing a long-run relationship, equation 3 is estimated using an appropriate lag selection criterion. It is also possible to perform a parameter stability test for the selected ARDL representation of the error correction model during the second stage of the ARDL cointegration procedure. The following is a general error correction model (ECT) (4):

$$\begin{aligned}\Delta FDI_t = {} & \theta_0 + + \sum_{i=1}^{n} \theta_{1i} \Delta FDI_{t-i} + \sum_{i=0}^{n} \theta_{2i} \Delta TOP_{t-i} + \sum_{i=0}^{n} \theta_{3i} \Delta LGDP_{t-i} + \sum_{i=0}^{n} \theta_{4i} \Delta INT_{t-i} + \sum_{i=0}^{n} \theta_{5i} \Delta EDU_{t-i} \\ & + \sum_{i=0}^{n} \theta_{6i} \Delta EXR_{t-i} + \sum_{i=0}^{n} \theta_{7i} \Delta INF_{t-i} + \sum_{i=0}^{n} \theta_{8i} \Delta COC_{t-i} + \lambda ECT_{t-i} + u_t\end{aligned}$$

(Eq.4)

Where λ the speed of adjustment parameter and ECT is the residuals that are obtained from the estimated co-integration model of the equation. When identifying potential determinants affecting inward FDI, the stationary properties of the variables are first checked using the Augmented

Dickey-Fuller (ADF) test, and Phillips-Perron (PP) unit root tests.

Then we select the lag order using the lag selection criteria test. The second step of the estimation ARDL bound test approach is used to investigate the existence of a long run relationship. According to the ARDL bound test result, if the calculated F-statistics are greater than the critical values corresponding to the upper bound, the null hypothesis is rejected, implying co-integration. In the next phase of the estimation procedure, we test the long run and short run coefficients and check the error correction. Finally, the cumulative sum of recursive residuals (CUSUM) and cumulative sum of recursive residuals squared (CUSUMSQ) tests are used to investigate the model's stability.

Results and discussion

The results of the unit root statistics for all variables are shown in Table 2. The results of ADF and PP unit root tests confirmed that FDI, LGDP, INT, EDU, EXR, and COC variables are integrated with the first difference I (I). However, TOP and INF variables are stationary at their level of (0). At I (2), none of the variables are stationary.

The results of the stationarity tests confirmed that in the study we could employ the ARDL bound test to check whether there is a long run and short run relationship between a dependent variable and independent variables.

Table 2.

Stationarity test of variables

Variable	Stationarity test				Order
	ADF		PP		
	I (0)	I (I)	I (0)	I (I)	
FDI	-1.99	-5.04*	−2.16	−5.01*	I(I)
TOP	-3.89**	-5.84*	−3.94**	−6.19*	I(0)
LGDP	-1.51	-2.96***	−1.25	−3.02***	I(I)
INT	-0.74	-7.23*	-1.84	-7.23*	I(I)
EDU	-2.79	5.35*	−2.82	−5.28*	I(I)
INF	-12.69*	-4.54*	−10.12*	−21.87*	I(0)
EXR	-2.42	-6.42*	−2.43	−6.17*	I(I)
COC	-0.99	-4.45**	-1.24	-4.45**	I(I)

Note: *, **, and *** show significant at 1%, 5%, and 10% levels. ADF stands for Augmented Dickey-Fuller, and PP stands for Phillips-Perron.
Source: Authors' computation using E-views 10

The optimal lag level is usually determined by observing the values of the sequential modified LR test statistic (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Bayesian Criterion (SBC), and Hannan-Quinn Information Criterion (HQIC). Table 3 illustrates the findings of the LR, FPE, AIC, SBC, and HQC. One lag is the best number to include in the analysis according to all of the lag selection criteria mentioned above.

Table 3.

Lag selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-491	NA	7.07e+09	45.4	45.8	45.5
1	-301.6	224.1*	117063*	33.9*	37.5*	34.8*

Note: * indicates lag order selected by the criterion.

Source: Authors' computation using E-views 10.

Using this single lag, the AIC criteria chose the ARDL (1, 1, 1, 0, 1, 1, 0, 0) as the best model among the top 20 models, because the model with the lowest residual value is chosen as the best.

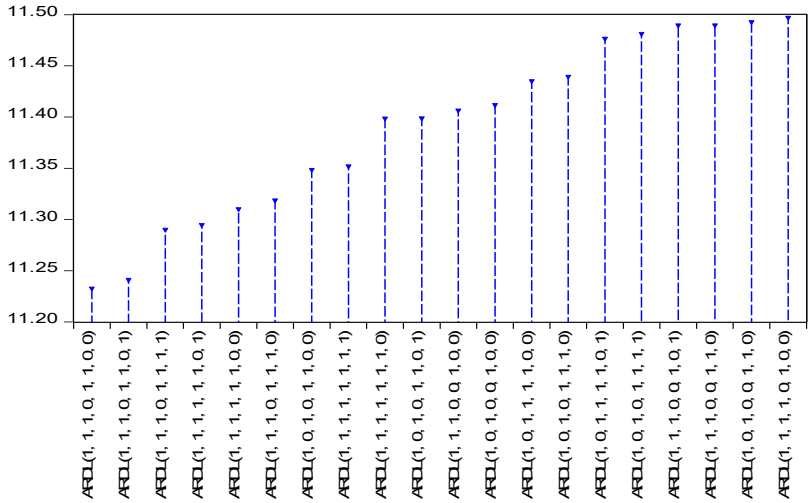

Figure 2. AIC criteria selected ARDL (1, 1, 1, 0, 1, 1, 0, 0)

Source: Authors' computation using E-views 10.

When using the VAR approach, the polynomial graph is also used to confirm the appropriate lag length, as shown in Figure 3. The graph's dots inside the circle confirm the validity of good results at lag 1.

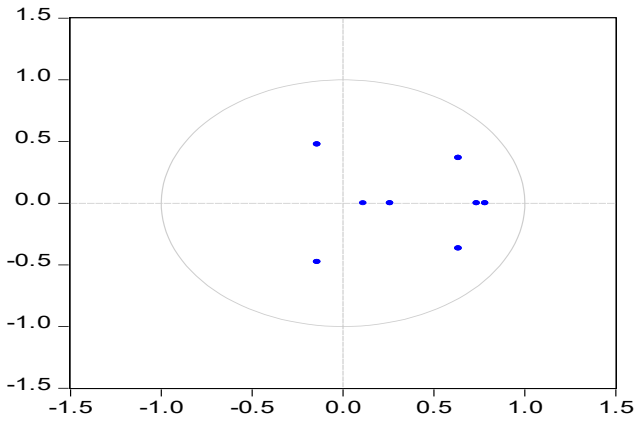

Figure 3. Polynomial graph

Source: Authors' computation using E-views 10.

To investigate the cointegration relationship between the identified variables, we used the ARDL bound testing approach. Table 4 shows the estimated model results, which show that the results exceed the upper bound value. According to the ARDL bound test result, the calculated F-statistics are greater than the critical values corresponding to the upper bound; the null hypothesis is rejected, implying cointegration. At the 1% significance level, the F-statistic value is greater than 3.9. The F-statistic is 5.8343.

Table 4.
ARDL bound test

Test Statistic value	Value	K
F-statistic value	5.8343	7
Significance Level	I(0)	I(1)
10%	1.92	2.89
5%	2.17	3.21
2.5%	2.43	3.51
1%	2.73	3.9

Source: Authors' computation using E-views 10.

Table 5 shows the estimated long-term coefficients. As the results show, TO, LGDP, and EDU variables are statistically significant in the model, whereas INT, INF, EXR, and COC variables are insignificant in the model. In the long term, the coefficient of trade openness (TO) was found to be negative and statistically significant at 1%.

Table 5.
Estimated long-run coefficients results

Variable	coefficient	Probability Value
Constant	865.785	0.0005*
TOP	-11.1019	0.0005*
LGDP	184.7642	0.0697***
INT	-1.5456	0.6831
EDU	59.0861	0.0014*
EXR	-2.2559	0.4495
INF	-1.4654	0.6897
COC	7.6655	0.1726
R^2 value	0.9498	
Adjusted R-squared value	0.8829	
F statistics	14.1983*	

Note: *, **, *** show significant at 1%, 5% and 10% level respectively.
Source: authors' computation using E-views 10

A similar negative relationship were observed by Kariuki (2015), and Rathnayaka Mudiyanselage et al. (2021). This implies that, in the long run, the greater the level of trade openness, the less likely it is to attract foreign direct investment. The coefficient of the variable log of gross domestic product (LGDP) was found to be positive and statistically significant at 10%.

It implies that increased market size attracts long-term foreign direct investment flows. Similar positive relationship were observed by (Ranjan & Agrawal, 2011; Güriş & Gözgör, 2015; Aziz & Mishra, 2016; Sazali et al., 2018; Asiamah et al., 2019; Sajilan et al., 2019; Wickramarachchi, 2019). The coefficient of the labour force education (EDU) variable was found to be positive and statistically significant at 1%. The coefficient of the education level of the labour force (EDU) suggests that an increase in the education level of the labor force attracts foreign direct investment. A similar positive relationship was observed by Rathnayaka Mudiyanselage et al. (2021). The real effective exchange rate, interest rate, corruption control, and inflation rate are variables that, while statistically insignificant in the long term, exhibit expected signs, according to theory. The R^2 value indicates that the model's input variables explain 94.98 percent of the variations in per capita FDI inflows in Romania.

Table 6.
Estimated short-run coefficients results

Variable	Lag Order	
	0	1
D(FDI)		-0.9889*
D(TOP)	-29.1814*	3.9039
D(LGDP)	1091.55*	-673.44*
D(INT)	-3.28	
D(EDU)	62.76*	46.84*
D(EXR)	-14.80*	13.97*
D(INF)	-2.96	
D(COC)	16.09**	
ECT (-1)	-0.99 (0.0147)**	

Note: *, **, *** show significant at 1%, 5% and 10% level respectively.
Source: authors' computation using E-views 10

Table 6 shows the estimated short-run coefficients. It demonstrates that, with the exception of interest rate and inflation, the estimated coefficients are significant for all variables in the model. In the short run, trade openness reduces FDI inflows. In lag (0), the openness coefficient is statistically significant at 1%. This suggests that openness to trade is an important variable in explaining foreign direct investment inflows to Romania. However, trade openness has a negative impact on FDI inflows, contrary to theory, which suggests that higher levels of openness are less likely to attract FDI in the long run. With a coefficient of 1091.55 in the short run lag (0), LGDP has a positive and statistically significant impact on foreign direct investment inflows. Numerous empirical studies show that market size is an important factor in FDI inflows. A larger host country's market, in general, attracts more foreign direct investment. However, in lag (1), the impact of LGDP on FDI inflow is negative and statistically significant, the opposite of the hypothesis. In the short run, both within the lag (0) and lag (1), Romania's education level encourages per capita FDI inflows (I). The theory and the majority of existing empirical studies indicate that the corruption control variable has a statistically significant and positive effect on

FDI inflows (Alemu, 2012; Hoang & Bui, 2015). The clear evidence is that the exchange rate (EXR) determinant has a statistically positive and significant effect on foreign direct investment in lag (1), as predicted by theory and the majority of existing empirical research. According to the findings, a depreciation of the host country's currency would encourage FDI inflows. Inflation has a short-term negative impact on FDI. In addition, the inflation variable is unable to explain the variation in FDI inflow.

The coefficient of 0.99 is the (ECT_{t-1}) at the 5% significant level, and it indicates how speedily the variables adjust to equilibrium, with a statistically significant negative coefficient sign. The error correction term indicated that 99 percent of the time after the exogenous shock, the entire system could return to long-run equilibrium. Figure 4 illustrates the results of the cumulative of the recursive residuals (CUSUM) and cumulative sum of squares of the recursive residuals (CUSUMSQ) tests. As a result, both plots are stable because the residual plots fall between the upper and lower boundaries at the 5% significance level.

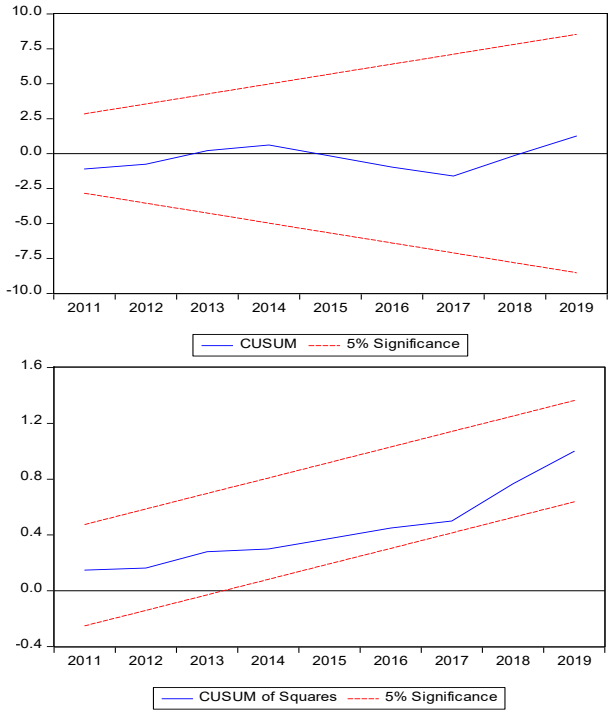

Figure 4. Plots of coefficients stability tests.

Source: authors' computation using E-views 10

We used diagnostic tests such as the serial correlation LM test, the Breusch-Pagan-Godfrey (BPG) heteroscedasticity test, the Ramsey reset test, and the Jarge-Bera normality test to determine whether the model was effective sufficiently.

Table 7 presents the findings of the diagnostic tests, which revealed that the model passed all of them.

Table 7.
Diagnostic tests results

Statistics	Probability
LM Serial Correlation Test	0.6587
Harvey Heteroscedasticity Test	0.5498
Ramsey Reset Test	0.1246
Jarge-Bera Normality Test	0.6976

Source: authors' computation using E-views 10

Conclusion

A number of factors in Romania influence FDI decisions. Dunning's OLI theory is one of the theories that explain the determinants of inward FDI. FDI inflows are considered a critical financial instrument for the Romanian economy. This study aims to investigate the potential determinants of foreign direct investment inflows into Romania from 1997 to 2019. An ARDL bound test approach was used to investigate the long-term and short-term effects of trade openness, gross domestic product, labor force education level, interest rate, exchange rate, inflation, and corruption control. We used a number of different econometrics tests, such as unit-root tests, lag selection criteria, the ARDL bound test with short and long run coefficient analyses, and diagnostics tests. The results of the ARDL bounds tests show that trade openness discourages per capita FDI inflows in both the long and short run. In the long run, the log of GDP is a proxy for market size, and the labor force's education level encourages per capita FDI inflows to Romania. In the short run, the log of gross domestic product, labor force education, the real effective exchange rate, and corruption control explain the variation in FDI inflows, while interest rates and inflation are insignificant. It indicated that interest rates and inflation were not key factors determining FDI in Romania throughout the period, in line with the study (Faroh & Shen, 2015). In addition, the relationship between LGDP and exchange rate variables is mixed in the short-run lag period. In the short run, the labor force's education level encourages attracting more FDI, and the control of corruption variables has a statistically significant and positive effect on FDI inflows.

The conclusions highlighted above have important policy implications. The size of the market, the education level of the labor force, and the host country's control of corruption all have a significant impact on FDI. There is a need to continuously increase gross domestic product in order to create needed markets for foreign investors, improve labor force education by introducing training and workshops, and control corruption by implementing more effective rules, keeping a stable exchange rate, and promoting appropriate open trade policies and activities to improve the investment environment.

This study only considers a few potential variables in light of available data and the ease of measurement methods due to time constraints and other variables beyond the researcher's control. In future research, if we identify the potential determinants that impact FDI inflows as economic factors (GDP, trade openness, interest rate, inflation, etc.) and non-economic factors (corruption indicators, rule of law, political stability, etc.) separately, that could best explain the variability of FDI flows in Romania.

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