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An Empirical Investigation on Determinants of Sustainable Economic Growth. Lessons from Central and Eastern European Countries

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Abstract: The study focuses on the effects of imports, exports, financial direct investment inflow and financial direct investment outflow on sustainable economic growth expressed by various macroeconomic indicators (gross domestic product, gross domestic savings, gross domestic capital) using the least squares panel method. Sample data were selected for ten Central and Eastern European (CEE) countries and the time frame considered was 2005–2016. Generally, transitional economies have to incorporate strong savings and a steady capital formation in order to achieve higher economic growth via foreign direct investment. Results showed that the analyzed factors played a major role in the sustainable economic growth of CEE countries. Another important and valuable insight of this study is that the financial sector steers the process of achieving sustainable economic growth across CEE countries.

Keywords: emerging markets; gross domestic product; gross domestic savings; gross domestic capital; imports; exports; financial direct investment inflow; financial direct investment outflow

JEL Classification: F2; F20; F23

1. Introduction

Along other variables, the gross domestic product (GDP) growth rate is one of the main indicators used in assessing the performance of an economy. The recent 2008 banking crisis coupled with the 2010 sovereign debt crisis and the recent coronavirus pandemic context have all led to a sharp decline in the GDP of worldwide countries. With respect to Central and Eastern European (CEE) countries, such phenomena can pose serious threats to increasing citizens' living standards and might even jeopardize sustainable development in the medium and long run. In this context, the main aim of this study is to analyze the determinants influencing economic growth in CEE countries (i.e., Bulgaria, Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Romania, Slovakia and Slovenia). These countries, which are located in the Baltic area, and Central and Eastern Europe, are former communist nations belonging

to the Soviet Bloc. There are several reasons for why countries from the aforementioned list are researched less. One reason is that their economies have been closed for long periods. A second reason is their centralized economies, inherited from the socialist production model that regulated business prospects during the communist regime. A third reason is that state policies have been secluded from the market economy. Moreover, the lack of competition has mitigated challenges regarding business survival, which triggered a low motivation for growth. Back in those days, central governments established the nature of funded business projects. Therefore, people participated less in the capital formation and investment choices. According to the general rule, capital was the instrument of the state and, hence, there was less room for free flow of foreign direct investment. Consequently, the product life cycle was entirely controlled by the state.

The selected countries differ from developing economies when considering various aspects. During the period of the 1950s, the Soviet Bloc countries achieved a higher annual growth rate in per capita GNP of 4.5% than 3.7% of market economies (Gregory and Stuart 1997). The average growth rates of GNP per capita in market economies were 4.5% in the 1960s, 2.8% in the 1970s and 2% in the 1980s, while the Soviet Bloc countries had achieved lower average growth rates in per capita GNP of 3.6% in the 1960s, 2.8% in the 1970s and 0.8% in the 1980s (Svejnar 2002). Hence, by the end of the transition process, central planning was replaced with a market economy.

The main goal of this study is to investigate the dynamics of the relationship between main macroeconomic indicators (i.e., gross domestic product, gross domestic savings, gross domestic capital, GDP per capita income, GDP purchasing power parity, exports, imports, financial direct investment inflow, financial direct investment outflow) based on information retrieved from the World Bank. We therefore analyzed the evolution of these indicators in ten CEE countries during the period 2005–2016. Our results revealed that the macroeconomic indicators played a fundamental role in shaping the economies of the selected countries.

The research methodology includes comparative analysis, synthesis of theoretical approaches and econometric modeling. Results indicate that all independent variables are connected with the GDP, an aspect that is extremely beneficial for any economic system.

The remainder of the paper has the following structure. Section 2 highlights relevant studies tackling the factors that influence economic growth. Section 3 presents the research hypotheses, the proposed econometric models and estimated outcomes. Section 4 emphasizes the main results of the study and policy implications.

2. Literature Review

The competitiveness of an economy is associated with economic performance measured by the increase in productivity and GDP, decrease in inflation, growth in the number of jobs and improvement of citizens' welfare. Therefore, the main political goal of any government is to stimulate competitiveness growth in the industry and agriculture as a necessary basis for economic and social development. Undoubtedly, such a goal can be achieved by increasing capital investments in the economy, raising imports that are necessary to modernize the economy, but especially by stimulating exports, which represent the leading signal that economic competitiveness expands.

Sustainable economic growth denotes continuity without a wide fluctuation in the rate of economic growth and aims that future generations do not suffer from depleting resources. Sustainable development includes three principles of economic, social and environmental growth (Armeanu et al. 2018). Economic growth is enhanced with higher income reflected by the GDP, which transfers into per capita income and promotes living standards and savings. Production surplus leads to exports that increase the GDP, which in turn generates financial direct investment outflows. Moreover, imports adjust to the increasing demand, while financial direct investments facilitate the production of raw materials via technology transfers. As savings increase, domestic capital is enhanced through financial direct investment outflows. Taking into account the aggregate demand and supply at a given price, the purchasing power parity of GDP indicates the stability of economic growth.

2.1. Brief Taxonomy Regarding the Impact of Financial Direct Investments on Economic Growth

There are various studies tackling the relationship between financial direct investment (FDI), trade, exports, imports, GDP per capita and economic growth using Granger causality tests and panel cointegration techniques.

Several researches reported a bidirectional Granger causality between FDI and exports (e.g., Durairaj 2011; Falk and Hake 2008; Hsiao and Hsiao 2006; Liu et al. 2001; Naveed and Shabbir 2006; Ray 2012; Szkorupova 2014). Lenka and Sharma (2014) investigated the link between FDI inflow and economic growth using data from 62 countries during 1991–2010 and found that FDI financed domestic capital formation. Similar results were reported by Balasubramanyam et al. (1996), Banga (2006), Chowdhury and Mavrotas (2006) and Li and Liu (2004).

According to the literature, FDI inflows facilitate a country's integration into the world economy, yet they are unevenly distributed. Namely, the top 30 countries in the world receive 95% of FDI inflows (Pournarakis and Varsakelis 2002). Among the countries with transition economies that share a small part of global FDI, Central Europe and Baltic nations received higher FDI shares than Southeastern European countries and nations belonging to the Commonwealth of Independent States (Glaiser and Atanasova 1998; Pournarakis 2001; Sengenberger 2002; Barry and Lipsey 2002; Tuselmann 1999; Tondel 2001; te Velde 2001). FDI inflows can help local firms to increase their competitive advantage via knowledge transfer of technology, production and management techniques and experience (Contessi and Weinberger 2009; Melnyk et al. 2014).

The literature acknowledges multiple studies regarding the link between FDI and multinational corporations (MNC) (Blonigen 2005; Blonigen and Piger 2014; Paul and Singh 2017; Pilipovic et al. 2015; Sharma and Kautish 2020; Hertenstein et al. 2017). In this context, Justin and Feliciano-Cestero (2020) concluded that FDI have emerged as a fundamental element of international business. Auzairy et al. (2020) examined the impact of Chinese FDI on the economy of Malaysia and opined that, on one hand, FDI inflow contributed to stock market growth and the supply of goods and services, and it mitigated production prices. On the other hand, investment directed towards sections such as construction and industry impacted negatively on the Malaysian economy. Other studies such as Zhang et al. (2020) emphasized that Chinese FDI fueled economic growth in developing countries because it enabled the modernization of industry, the improvement of human capital and institutional transition. Yet, such beneficial results of FDI inflow can be observed in the long run, usually in 6–8 years.

Another important sector that contributes substantially to the economic development of a country is tourism. Using data from 1995–2017, Arain et al. (2020) showed that the relationship between inbound tourism and FDI was largely positive for all countries considered, except for Mexico and Russia.

Chandio et al. (2020) investigated the relationship between electricity consumption, FDI inflow and sustainable economic growth in Pakistan for the period 1997–2017. According to the authors, national authorities should focus on optimally using available resources in order to generate energy, but also incentivize FDI inflow in the energy sector with economic and fiscal stimuli. At the end of the day, renewable energy can be used to decrease carbon emissions and attract sufficient FDI. Cao et al. (2020) investigated FDI impact on energy intensity in BRICS and non-BRICS countries. Results indicated that the relationship between these variables was significant and moderated by innovation capacity.

Wong et al. (2020) analyzed the specific determinants of FDI in East, Central and Western China, using economic and spatial analysis on data from 31 Chinese provinces and autonomous regions, for the period 2005–2015. Findings suggested that governments aiming to attract FDI should use local opportunities in order to stimulate economic activities. Other specialists like Seyoum and Camargo (2020), with a sample of 93 developing countries, studied the relationship between economic growth and FDI inflow in human capital and alternatives to improve economic efficiency by transferring new technologies, marketing and management skills. According to the results, economic fragility at the national level can generate a country's economic decline when FDI inflows are significant.

Reurink and Garcia-Bernardo (2020) pointed out that globalization has accentuated competition among states for obtaining FDI inflow. Authors identified five categories of FDI, namely: production subsidiaries; shared service centers; research and development facilities; intermediary capital companies; and top capital companies. Bayar et al. (2020) showed that competition has intensified financial direct investment flows in recent decades, which are an important source to increase economic competitiveness. Chetthamrongchai et al. (2020) focused on the factors influencing the non-competitiveness of foreign trade and economic growth. Their results reported that the negative factors influencing the variables of interest were corruption, political instability and the limited quality of state institutions. In the same line, Andrašic et al. (2020) examined the choice of investment model on six transition countries from the Southwest Balkans using a multivariate cluster analysis and considering economic growth, competitiveness and institutional distance as evaluation criteria. They concluded that no unique investment model could be identified and that types of models differ from one country to another.

Govori and Fejzullahu (2020) examined the impact of external financial flows (i.e., foreign direct investment, external debt, net exports) on GDP growth in Kosovo and concluded that such financial flows generally increased the number of jobs and mitigated unemployment and dependence on imports. Maryam and Mittal (2019) studied the link between financial direct investment flows and the determinants of GDP, such as trade liberalization, exchange rate, gross capital formation and infrastructure, in the case of BRICS countries. The authors reported that, in the short run, predictors of FDI differed from country to country. Overall, China registered significant and higher positive effects of the variables of interest on FDI inflows.

2.2. Brief Overview Regarding the Impact of the Banking Sector on Economic Development

The banking sector is the center of economic development. In this regard, Katircioglu et al. (2020) investigated the long-term equilibrium between the profitability of the banking sector and its internal and external determinants (inflation, economic growth and oil price) in Turkey. The authors concluded that changes in the oil price indirectly affected the profitability of the banking sector by increasing inflation and decreasing the volume of loans granted to Turkish companies. In the authors' opinion, their insights could be generalized to oil-importing and developing countries, whose economies depend on oil price fluctuations. Hoeck et al. (2020) studied the impact of business sustainability on credit risk for European corporations, since banks were generally interested in granting capital to investments that ensured a sustainable economic growth. Results showed that sustainable companies could access investment loans with low-risk premiums more easily because their target was sustainable development.

Mutize and Nkhalamba (2020) conducted a comparative analysis focused on how the size of economic growth would determine sovereign currency credit ratings in 30 countries from Africa, Europe, Asia and Latin America for the period 2010–2018. Using the least squares approach with fixed and random effects, they found no significant differences when comparing African countries to countries in Asia, Europe and Latin America. The authors concluded that macroeconomic factors were relatively unimportant when determining the risk profile of an African country as opposed to other developing and developed countries. Seraj et al. (2020) investigated how the exchange rate influenced economic growth. Using the Rodrik method on data from 1990 to 2006, the authors reported a positive link between the variables of interest for Germany, South Africa and Slovakia. GDP per capita was a major determinant of economic growth in Germany and South Africa, while the exchange rate was the determining factor in Slovakia.

2.3. Brief Overview Regarding the Impact of International Trade, Human Capital, Shadow Economy and Other Factors on Economic Growth

Understanding the importance of international trade for the economic growth of a country is pivotal (e.g., (Gries and Grundmann 2020)). In the same line, Marfatia (2020) studied the determinants

of global revenue growth with an autoregressive distributed lag framework. Results showed that the national projected income would be more relevant than the income determined from information corresponding to previous years. Using data on 120 developing countries for the period 1996–2014 and a dynamic generalized method of moments (GMM), Uddin et al. (2020) concluded that, in developing countries, the factors impacting negatively on economic growth were institutions and human capital.

Kleineick et al. (2020) investigated the factors influencing investments of multinational companies in EU countries and concluded that green investment projects offered important opportunities to multinationals. Moreover, investments in ecological and urban areas were strongly connected with citizens' education level. Pegkas et al. (2020) investigated the relationship between economic growth and several factors (investment, human capital, trade openness, public debt) in countries from the euro area, where imbalances continued to exist after the banking and sovereign debt crisis. They showed that, in the long run, economic growth would be positively influenced by investment, human capital, exports and imports. In addition, public debt would negatively influence economic growth. The authors suggested that euro area countries should design growth strategies with a focus on fiscal consolidation, public investment, increase in exports and a considerable improvement in human capital.

In the opinion of Gamidullaeva et al. (2020), small and medium enterprises are among the most important factors influencing economic development in Russia. Moreover, the development of such economic entities can be greatly hindered by widespread phenomena such as shadow economy, corruption and also high taxation (Batrancea et al. 2012, 2018, 2019; Kogler et al. 2013).

Bruns and Ioannidis (2020) tackled the predictors of economic growth, namely demography, education, trade, investment and religion. Results showed that, during periods of recent growth, education and demography had a significant impact. In the view of Nam et al. (2020), financial markets and the quality of accounting and auditing positively influenced direct investment flows in the national economy. Tolmacheva (2020) conducted an empirical research regarding the role of migration on the socio-economic development of countries and regions in the European Union. Results reported that the most important factors were employment, GDP growth rate and labor cost index. In addition, the study also found a positive relationship between GDP growth and migration flow. Tran and Nguyen (2020) investigated whether business cycles would significantly influence the link between financial development and banking risk, using data from 95 banks operating in six Southeast Asian countries during the period 2004–2018. Based on their results, the authors concluded that the business cycle did not moderate the proposed link. In a recent empirical research, Osinska et al. (2020) analyzed the relationship between economic growth (i.e., GDP growth rate, industrial production growth rate) and independent variables such as public debt, rate of inflation, interest rate and unemployment rate. As shown by the results, the monetary mechanism played a massive part in the process of establishing business cycle stages for most European economies.

2.4. Brief Overview Regarding the Impact of Energy and Technology Transfer on Economic Growth

Acknowledging the importance of renewable energy for economic growth, Topcu and Tugcu (2020) analyzed the degree to which renewable energy consumption would affect income inequality in developed economies during 1990–2014. Results indicated a negative relationship between the two variables. Moreover, it was suggested that income inequality could be mitigated through using renewable energy sources. Nguyen et al. (2020) investigated how information, communication technologies and innovation in controlling carbon dioxide emissions would impact economic growth on data from 13 G-20 countries over a 15-year time frame. The authors suggested that energy prices, FDI, technology, innovation expenditures and propensity for trade hampered carbon emissions. Using data from Albania, Konstandina and Gachino (2020) showed that FDI played an important role in technology transfer (direct and indirect mode).

In addition, Eluwole et al. (2019) analyzed the connection between economic growth, foreign direct investment and trade in energy resources. They concluded that a 1% increase in energy consumed would lead to a 0.918% increase in environmental degradation, while a 1% increase in real revenues

through foreign direct investment would decrease environmental degradation by 0.635%. According to these authors, governments are called to implement economic and environmentally sustainable measures in order to foster a cleaner environment for both current and future generations across the globe.

3. Method and Results

There are several economic theories tackling economic growth, yet two of the most important models are the neoclassical one and the endogenous model. The Robert Solow growth model belongs to the neoclassical economy and it is based on capital formation, human resources and innovation. In contrast to the Solow model, Romer and Lucas developed the endogenous growth model, which gives importance to constant economic returns and capital increase in time. Our study is grounded in this endogenous growth model. The sample included ten CEE countries: Bulgaria, Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Romania, Slovakia and Slovenia. We chose these particular countries because they number transition economies that are also successful emerging markets and register high GDP growth rates. With the purpose of investigating the degree of internationalization reached by the selected countries, which feature characteristics of emerging markets, we examined the impact of financial direct investment inflows and outflows, exports, imports, investments and savings for the period 2005–2016. Data were retrieved from the World Development Indicators database.

The first dependent variable (GDP) is the nominal gross domestic product of annual growth and it is a measurement of economic output that is adjusted for inflation. Nominal GDP includes goods and services, indicates the size and the health of the national economy and also the economic growth rate.

The variable GDP per capita (GDP_P_CAP) is the total economic output of a country divided by the number of its population. The variable suggests living standards and the benefits citizens are granted in a particular country. Generally, GDP per capita is used to compare national prosperity.

Gross domestic product purchasing power parity (GDP_PPP) offers a reasonable measurement of real-world purchasing power. This is used to compare economic outputs of different nations. GDP_PPP relies on the economic theory that prices of goods and services must equalize among countries overtime. Socialist countries incur high costs because of high taxes, but the existence of agreements among countries might decrease such costs. In this sense, GDP_PPP may facilitate cost equalization across countries.

Gross domestic savings (GDS) indicates GDP that is diminished by final consumption expenditure. This variable includes savings of households, the private corporate sector and public sectors. Gross domestic capital formation (GDC) is a function of gross domestic savings that shows the financial state and growth of a country, with household savings being the main source of government borrowing to finance public goods and services.

Our predictors were exports, imports, FDI inflows (FDI_INF) and FDI outflows (FDI_OUTF). All variables were measured in percent.

Figure 1 shows that, during the world financial crisis, all countries registered significant annual decreases in the GDP growth rate, especially Lithuania (approximately 15% in 2009), Estonia and Latvia (approximately 14% in 2009), who incurred the largest decreases. On the other hand, we noticed that the GDP registered important increases in 2005 in countries such as Latvia (approximately 11%), Lithuania (approximately 8%), Slovakia (approximately 7%), Slovenia and Romania (approximately 4%).

Figure 2 shows that the largest decreases in the indicator were recorded by Estonia and Lithuania during the 2009 financial crisis (approximately 14%), followed by Latvia (approximately 13%) and Slovenia (8%). Regarding the year 2005, we found important increases in the indicator in the case of Latvia (approximately 12%), Lithuania (approximately 10%), Slovakia (approximately 7%) and Romania (approximately 5%).

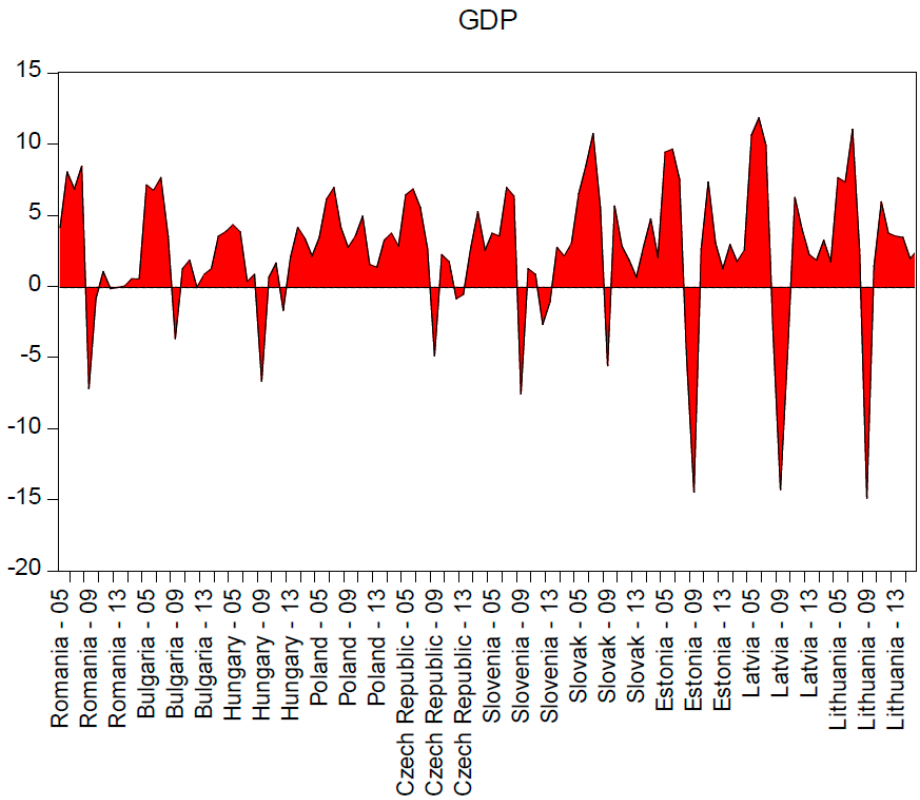

Figure 1. Gross domestic product (GDP) annual percentage change in Central and Eastern European (CEE) countries.

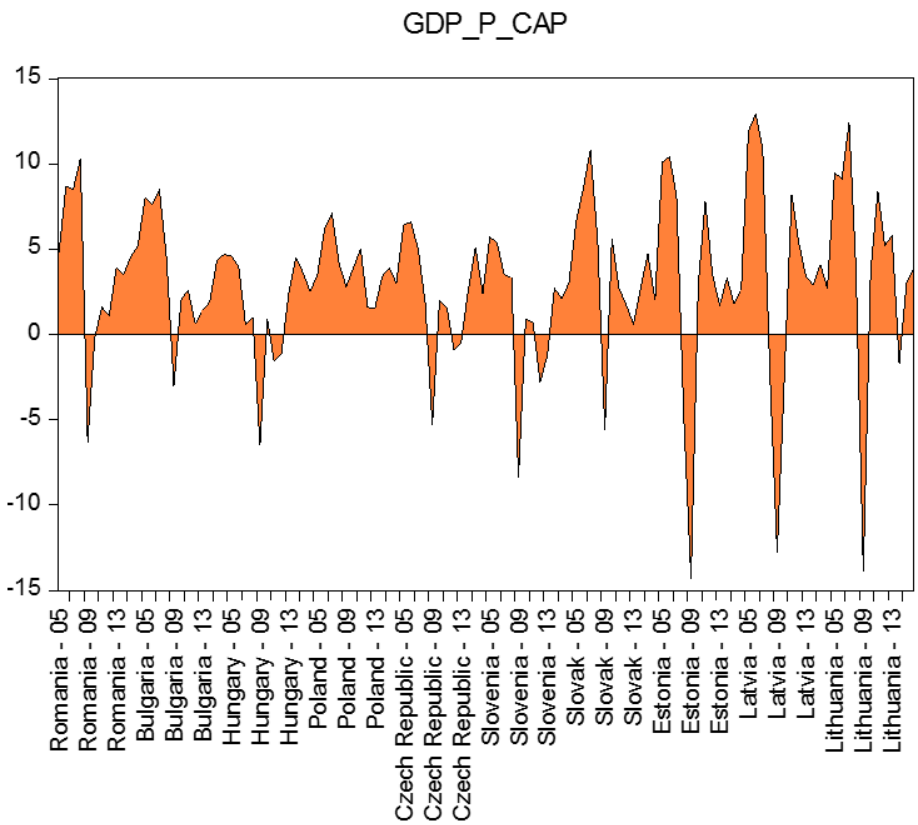

Figure 2. GDP per capita (GDP_P_CAP) annual percentage change in CEE countries.

In the case of the variable gross domestic product purchasing power parity (GDP_PPP), one can see that it registered the same evolution in all CEE countries during the entire period (Figure 3). Thus, the highest annual increases were identified in 2006 for Slovenia (approximately 18%), Estonia (16%), Latvia (15%) and Slovakia (13%). The largest decreases in the indicator were recorded in 2009 by Latvia (13%), Lithuania (12%) and Estonia (10%), followed by Slovenia, Romania, Hungary (approximately 6%) and Czech Republic (approximately 5%).

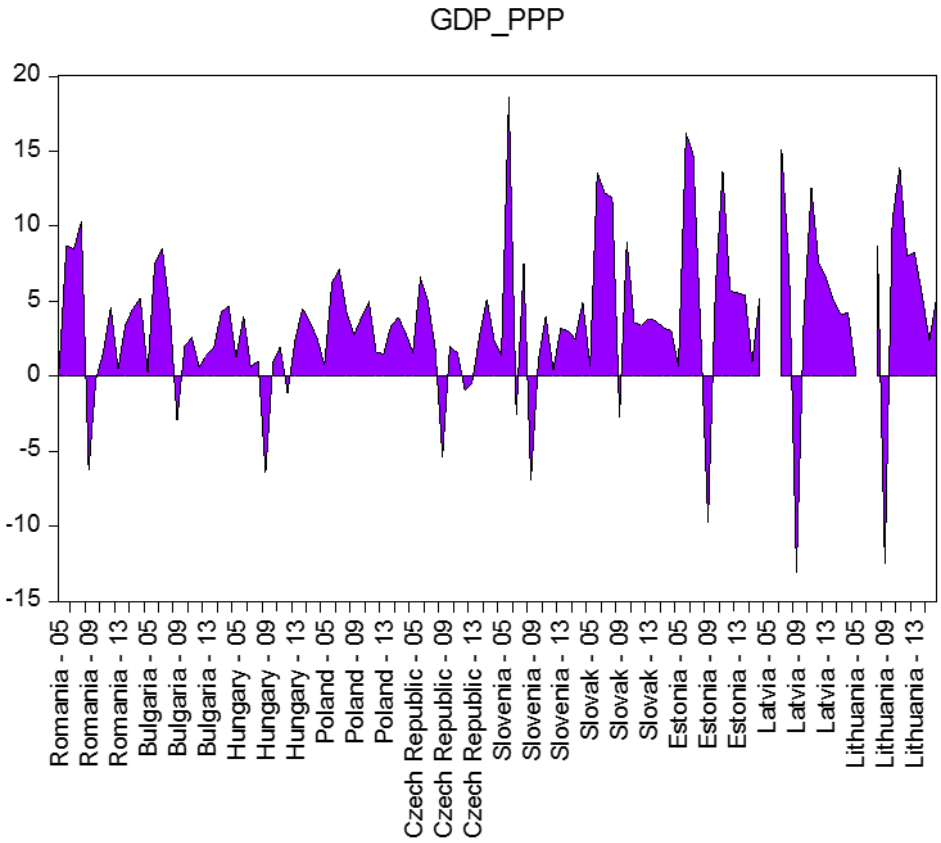

Figure 3. Gross domestic product purchasing power parity (GDP_PPP) annual percentage change in CEE countries.

Another important indicator of economic growth in Central and Eastern European countries is gross domestic capital (GDC) (Figure 4). During the analyzed period (2005–2016), the indicator registered important annual increases, which highlighted the increasing economic development of these nations after the collapse of communism in Central and Eastern Europe. Thus, it can be seen that Latvia recorded the highest average annual growth in 2005 of about 35%, followed by Bulgaria (approximately 28%) and Lithuania (24%). At the same time, we found that during the financial crisis (especially in 2009), Slovenia and Estonia recorded annual decreases of about 30%.

In our analyses, we considered that gross domestic savings (GDS) was also an important indicator of economic growth in Central and Eastern European countries (Figure 5). We found that the indicator registered substantial annual increases. Thus, it can be observed that the highest increases were registered in 2005 by Czech Republic (approximately 31%), Slovenia (approximately 28%) and Romania (approximately 24%). It can also be seen that in 2009, Estonia decreased with about 20%.

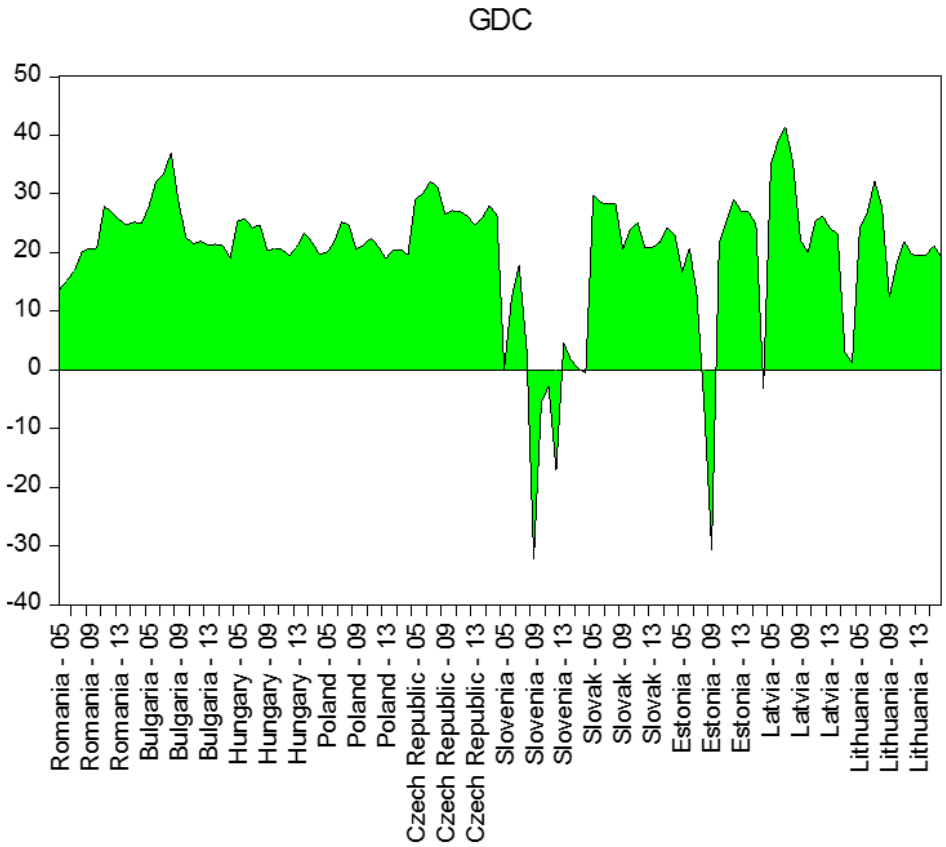

Figure 4. Gross domestic capital (GDC) annual percentage change in CEE countries.

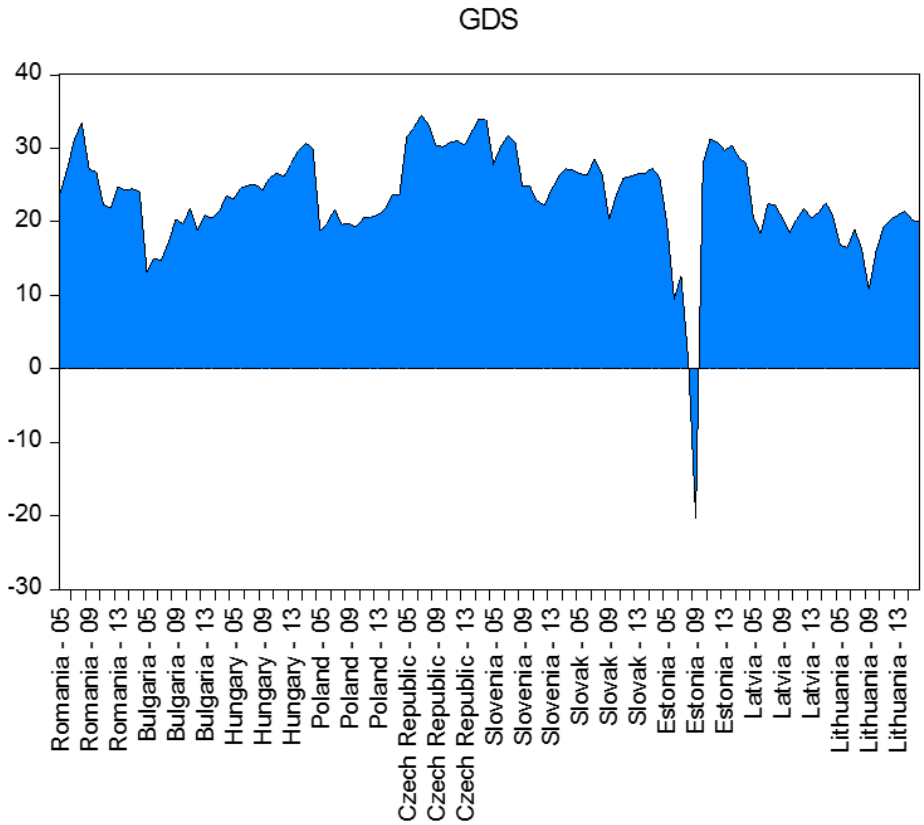

Figure 5. Gross domestic savings (GDS) annual percentage change in CEE countries.

3.1. Analysis of Central Tendency and Variation

In this study, we investigated the determinants on economic growth in the CEE countries. Descriptive statistics (i.e., mean, median) provide a summary of our data. Table 1 displays the mean, median and standard deviation, calculated for the period 2005–2016.

Table 1. Descriptive statistics.

Variable	GDP	GDP_P_CAP	GDP_PPP	GDS	GDC	EXPORTS	IMPORTS	FDI_INF	FDI_OUTF
Mean	2.595000	3.033333	3.701131	23.49167	20.23833	33.37000	32.98655	5.568333	2.817500
Median	2.800000	3.350000	3.514668	23.75000	21.85000	28.95000	35.70000	3.700000	1.350000
Maximum	11.90000	12.90000	18.56318	34.50000	41.40000	90.20000	81.40000	54.60000	52.70000
Minimum	−14.80000	−14.30000	−13.05911	−20.30000	−32.20000	−16.40000	−32.20000	−28.00000	−18.90000
Std. Dev.	4.641552	4.770380	5.156009	6.913105	11.67648	28.04579	28.48459	9.478689	8.189988
Skewness	−1.228007	−1.039220	−0.154285	−2.368945	−2.088830	0.427487	0.002608	2.595301	4.530885
Kurtosis	6.178526	5.560661	4.840111	15.50138	8.840930	2.035468	2.060095	15.87023	27.45001
Jarque–Bera	80.67516	54.38449	16.82592	893.6600	257.8465	8.306515	4.380430	962.9255	3399.593
Probability	0.000000	0.000000	0.000222	0.000000	0.000000	0.015713	0.111893	0.000000	0.000000
Observations	120	120	116	120	120	120	119	120	120

Source: our computations.

Table 1 presents the descriptive statistics for our data. The means of GDP, GDP_P_CAP, GDP_PPP, GDS, GDC, EXPORTS, IMPORTS, FDI_INF and FDI_OUTF indicate that their series are concentrated around the values of 2.59, 3.03, 3.70, 23.49, 20.23, 33.37, 32.98, 5.56 and 2.81, respectively. The variable EXPORTS has the largest volatility, followed by IMPORTS, while GDP has the smallest volatility.

Positive skewness indicates that four variables (EXPORTS, IMPORTS, FDI-INF, FDI_OUTF) have a right-skewed distribution, while the other five have a left-skewed distribution. The kurtosis of GDP, GDP_P_CAP, GDP_PPP, GDS, GDC, FDI_INF and FDI_OUTF is above 3, meaning that the distributions are leptokurtic. In addition, IMPORTS and EXPORTS have platykurtic distributions, since their kurtosis values are less than 3[1]. The Jarque–Bera test indicates that six of the variables are significantly non-normally distributed at the 1% level.

3.2. Econometric Models

The statistical software EViews version 11 was used to estimate econometric models via the panel least squares (cross-section weights), panel fully modified least squares (FMOLS) and dynamic ordinary least squares methods (DOLS). We also used cointegration and causality tests to examine the dynamics between variables. There were nine variables of interest: GDP; GDP_P_CAP; GDP_PPP; GDS; GDC; EXPORTS; IMPORTS; FDI_INF; and FDI_OUTF. As previously mentioned, the data for the period 2005–2016 were retrieved from the World Development Indicators database, which is compiled by the World Bank. Our empirical research is based on the following five hypotheses:

Hypothesis 1 (H1). *There is a linear dependence between GDP and EXPORTS, IMPORTS, FDI_INF and FDI_OUTF.*

Hypothesis 2 (H2). *There is a linear dependence between GDP_P_CAP and EXPORTS, IMPORTS, FDI_INF and FDI_OUTF.*

Hypothesis 3 (H3). *There is a linear dependence between GDP_PPP and EXPORTS, IMPORTS, FDI_INF and FDI_OUTF.*

[1] The leptokurtic distribution shows a much higher peak around the mean value, and fat tails, or higher densities of values at the extreme ends of the probability curve. The platykurtic distribution shows the exact opposite.

Hypothesis 4 (H4). *There is a linear dependence between GDS and EXPORTS, IMPORTS, FDI_INF and FDI_OUTF.*

Hypothesis 5 (H5). *There is a linear dependence between GDC and EXPORTS, IMPORTS, FDI_INF and FDI_OUTF.*

The general form of the econometric model is as follows:

$$Y_{it} = a_0 + a_1X_{1it} + a_2X_{2it} + a_3X_{3it} + a_4X_{4it} + \delta_i + \theta_t + \varepsilon_{it}$$

where

- a_0 represents the intercept;
- a_i represents the coefficient parameter, taking values from 1 to 4;
- X represents the independent variable;
- i refers to the country's activity, taking values from 1 to 10;
- t refers to the analyzed time frame (2005–2016), taking values from 1 to 12;
- δ_i represents the fixed effects intended to control for time-invariant country-specific factors;
- θ_t represents the fixed effects that control for common shocks (for instance, the global financial crisis);
- ε_{it} is the error term.

Country-specific unobserved effects (δ_i) should be considered in order to compensate for the omission of other factors influencing our variables of interest. On the ground that, with time, common shocks have an impact on dependent variables, we also estimated our models with and without fixed effects. Model adequacy was indicated by the R^2 coefficient, namely the coefficient of multiple determination. The adjusted R-squared (taking values from 0 to 1) confirms or invalidates the adequacy of independent variables. The closer its value is to 1, the better the model explains the dependent variable(s). F-statistic explains the proportion in which the dependent variable is influenced by independent variables. Estimations of the models testing the relationships of interest are presented in Table 2.

3.3. Discussion

In the first model, the coefficient of the variable IMPORTS was 0.245, meaning that a one percent increase in IMPORTS triggered a 0.245% increase in GDP. The negative coefficient of EXPORTS was 0.0437, meaning that a one percent increase in EXPORTS would lead to a 0.0437% decrease in GDP (statistically not significant). Regarding the coefficient of FDI_INF, it can be stated that an increase of one percent would trigger an increase of 0.3291% in GDP (statistically significant at the 1% level). The negative coefficient of FDI_OUTF showed that a one percent change in FDI_OUTF would generate a 0.3051% decrease in GDP (significant at the 1% level). R-squared was 0.574, while adjusted R-squared was 0.521, indicating that 52.09 percent of the variance in GDP was caused by the combined effect of imports, exports, financial direct investment inflow and financial direct investment outflow. Overall, the analyses revealed an F-statistic of 10.872 ($p < 0.001$), indicating that the combined effect of the independent variables was statistically significant.

According to the second model, IMPORTS registered a coefficient of 0.2542, meaning that a one percent increase in this variable would generate a 0.2542% increase in GDP_P_CAP (significant at the 1% level). The coefficient of FDI_INF was 0.3547, indicating that an increase of one percent in FDI_INF would lead to a 0.3547% increase in GDP_P_CAP (statistically significant at the 1% level). FDI_OUTF had a coefficient of −0.3438, namely that a one percent change in FDI_OUTF would lead to a 0.3438% decrease in GDP_P_CAP (statistically significant at the 1% level). The analyses revealed that the value of R-squared was 0.514, meaning that 51.4% of the variance in GDP_P_CAP could be attributed to the combined effect of imports, exports, financial direct investment inflow and financial

direct investment outflow. Overall, the value of the F-statistic (8.553470) showed that the combined effect of the independent variables on the dependent variable was statistically significant.

Table 2. Econometric models corresponding to the dependent variables GDP, GDP_P_CAP, GDP_PPP, GDS and GDC for Central and Eastern European countries.

	Model 1:	**Model 2:**	**Model 3:**	**Model 4:**	**Model 5:**
	$GDP = a_0 + a_1 Imports + a_2 Exports + a_3 FDI_{INF} + a_4 FDI_{OUTF}$	$GDP_P_CAP = = a_0 + a_1 Exports + a_2 Imports + a_3 FDI_{INF} + a_4 FDI_{OUTF}$	$GDP_PPP = a_0 + a_1 Exports + a_2 Imports + a_3 FDI_{INF} + a_4 FDI_{OUTF}$	$GDS = a_0 + a_1 Exports + a_2 Imports + a_3 FDI_{INF} + a_4 FDI_{OUTF}$	$GDC = a_0 + a_1 Exports + a_2 Imports + a_3 FDI_{INF} + a_4 FDI_{OUTF}$
Constant	−5.037878 ** (−2.040909)	−4.610732 ** (−2.163483)	−4.705574 (−1.401286)	21.28604 *** (29.55628)	18.24710 *** (29.168833)
IMPORTS	0.245422 *** (7.083616)	0.254232 *** (0.643967)	0.249404 *** (2.646696)	−0.072846 *** (−3.166139	0.496179 *** (6.271028)
EXPORTS	−0.043674 (−1.011192)	−0.053029 (−1.528984)	−0.018633 (−0.295489)	0.131381 *** (6.537375)	−0.451929 *** (−6.556460)
FDI_INF	0.329177 *** (8.189671)	0.354729 *** (9.250830)	0.197549 ** (5.027329)	−0.030850 (−0.229545)	0.153821 *** (2.979367)
FDI_OUTF	−0.305146 *** (−6.764424)	−0.343824 *** (−7.508574)	−0.180761 ** (−4.824277)	0.032291 (0.255098)	−0.137367 ** (−2.491484)
Prob. > F	0.000000	0.000000	0.000000	0.000000	0.000000
Cross-section effects	Fixed	Fixed	Fixed	None	Fixed
R^2	0.573761	0.514328	0.415360	0.266779	0.763116
Adjusted R-squared	0.520988	0.454197	0.340847	0.241052	0.733787
F-statistic	10.87235	8.553470	5.574337	10.36958	26.01955
Observations	119	119	116	119	119

Note: The dependent variables are *GDP* in Model 1, *GDP_P_CAP* in Model 2, *GDP_PPP* in Model 3, *GDS* in Model 4 and *GDC* in Model 5 for country i in t year. Robust t-statistics are shown in parentheses; **, *** indicate statistical significance at 5% and 1% levels. Prob. > F is the probability of non-existing fixed effects. For all estimated models, the hypothesis of multicollinearity is investigated using the variance inflation test (VIF). In all cases, the VIF values are lower than 5, which indicates a low risk of multicollinearity. We also tested the homoscedasticity, based on the White test. All statistics reject the null hypothesis of homoscedasticity.

In the third model, FDI_INF registered a coefficient of 0.197549, meaning that a 1% change in this factor would generate a 0.19% decrease in GDP_PPP (statistically significant at the 1% level). FDI_OUTF had a coefficient of −0.180761, meaning that a 1% change in such outflows would generate a 0.18% decrease in GDP_PPP (statistically significant at the 1% level). At the same time, IMPORTS had a coefficient of 0.249404, meaning that a 1% change in such outflows would generate a 0.24% increase in GDP_PPP (statistically significant at the 1% level). The analyses revealed that the R-squared was 0.415360, indicating that 41.53% of the variance in GDP_PPP could be attributed to the combined effect of imports, exports, financial direct investment inflow and financial direct investment outflow. Overall, the F-statistic of 5.574337 ($p < 0.001$) showed that the combined effect of the independent variables on the dependent variable was statistically significant.

In the fourth model, the variable IMPORTS had a coefficient of −0.073, meaning that a 1% increase in IMPORTS would trigger a 0.073% decrease in GDS (statistically significant at the 1% level). EXPORTS had a coefficient of 0.131, namely a one percent change in the variable would lead to a 0.131% increase in GDS (statistically significant at the 1% level). R-squared was 0.267, indicating that 26.7% of the variance in GDS was due to the combined effect of imports, exports, financial direct investment inflow and financial direct investment outflow. Overall, the F-statistic of 10.37 indicated that the combined effect of the independent variables on the dependent variable was significant.

In the fifth model, IMPORTS had a coefficient of 0.496, meaning that a 1% change in the variable could trigger a 0.496% increase in GDC (statistically significant at the 1% level). EXPORTS had a coefficient of −0.452, meaning that a one percent change in EXPORTS would lead to a 0.452% decrease in GDC (significant at the 1% level). The coefficient of FDI_INF (i.e., 0.1538) showed that a 1% change

in FDI_INF would lead to a 0.1538% increase in GDC (significant at the 1% level). FDI_OUTF had a coefficient of −0.1373, meaning that a one percent change in FDI_OUTF would lead to a 0.1373% decrease in GDC (statistically significant at the 5% level). According to the analyses, the *R*-squared of 0.7631 showed that 76.31% of the variance in GDC could be attributed to the combined effect of our independent variables. Overall, the *F*-statistic of 26.02 indicated that the combined effect of the independent variables on the dependent variable was statistically significant.

3.4. Unit Root and Stationarity, Panel Fully Modified Least Squares (FMOLS) and Dynamic Ordinary Least Squares Methods (DOLS)

3.4.1. Unit Root and Stationarity

In the case of a panel, the unit root test is generally conducted to investigate each individual series for stationarity. The null hypothesis assumes a nonstationary series, while the alternate hypothesis assumes a stationary series, meaning that the mean, variance and autocorrelation structure remain unchanged over time. When time series are stationary, they can be changed into nonstationary through techniques like the first or second difference. We conducted a unit root test and stationarity test to investigate the nature of the disbursement of data, so that the econometric analyses would yield sound results (see Table 3). Moreover, the findings will assist us in conducting a cointegration analysis to confirm cointegration relationships among our variables. The selection of data and models will make economic analysis more efficient.

Table 3. Unit root and stationarity.

Panel unit root test: Summary Series: GDP: Sample: 2005–2016: Exogenous variables: Individual effects Automatic selection of maximum lags Automatic lag length selection based on SIC: 0 to 1 Newey–West automatic bandwidth selection and Bartlett kernel					Panel unit root test: Summary Series: D(GDP): Sample: 2005–2016 Exogenous variables: Individual effects Automatic selection of maximum lags Automatic lag length selection based on SIC: 0 to 1 Newey–West automatic bandwidth selection and Bartlett kernel			
At Level					At Difference			
Method	Statistic	Prob. **	Cross-sections	Obs.	Statistic	Prob. **	Cross-sections	Obs.
Null: Unit root (assumes common unit root process)					Null: Unit root (assumes common unit root process)			
Levin, Lin and Chu t *	−7.53233	0.0000	10	107	c11.4727	0.0000	10	94
Null: Unit root (assumes individual unit root process)					Null: Unit root (assumes individual unit root process)			
Im, Pesaran and Shin *W*-stat	−3.63088	0.0001	10	107	−6.28179	0.0000	10	94
ADF-Fisher chi-square	45.3809	0.0010	10	107	75.8515	0.0000	10	94
PP-Fisher chi-square	36.4986	0.0134	10	110	102.528	0.0000	10	100
** Probabilities for Fisher tests are computed using an asymptotic chi-square distribution. All other tests assume asymptotic normality.								

Null Hypothesis: Stationarity Series: GDP: Sample: 2005–2016: Exogenous variables: Individual effects Newey–West automatic bandwidth selection and Bartlett kernel Total (balanced) observations: 120: Cross-sections included: 10			Null Hypothesis: Stationarity Series: D(GDP): Sample: 2005–2016 Exogenous variables: Individual effects Newey–West automatic bandwidth selection and Bartlett kernel Total (balanced) observations: 110 Cross-sections included: 10	
At Level			At Difference	
Method	Statistic	Prob. **	Statistic	Prob. **
Hadri Z-stat	0.63450	0.2629	5.23213	0.0000
Heteroscedastic consistent Z-stat	1.39141	0.0821	5.86540	0.0000

* Note: High autocorrelation leads to severe size distortion in Hadri test, leading to over-rejection of the null.
** Probabilities are computed assuming asymptotic normality. Source: our computations.

In the panel unit root summary, the results at level and first difference rejected the null hypothesis of unit root since p-values were below 0.05 according to the Levin, Lin and Chu t^*-statistic, the Im, Pesaran and Shin W-statistic, the ADF-Fisher chi-square and the PP-Fisher chi-square tests. Based on the Hadri unit root test, the null hypothesis of stationarity was rejected at the first difference as the p-value of the Z-statistic was below 0.05 but the null hypothesis of stationarity was not rejected at level as the p-value is 26.2, which is above 0.05.

3.4.2. Pooled OLS, Fixed Effect, Random Effect, and Hausman Test

We conducted a pooled ordinary least squares (OLS) model, a fixed effect model and a random effect model in order to investigate the impact of our predictors on the variables of interest. In order to select the appropriate model for further analysis, we ran the Hausman test. The results are shown in Table 4.

From Table 4 it can be observed that the p-values of the pooled OLS model and fixed and random effect models were significant. The null hypothesis of the Hausman test is rejected as the p-value is 0.0, which is below 0.05, and it shows that the fixed model is the alternative hypothesis in our consideration. According to the cross-section random effects test comparison, export and import contribute to economic growth at 7.3% and 25.2%, respectively, while FDI inflows and FDI outflows do not contribute to economic growth, GDP. In the fixed effect model, export does not contribute to economic growth, GDP, as the p-value is 15.2 which is above 0.05. The model is significant, but it has no contribution to economic growth. Without export, there is no value addition in the economic growth through imports, FDI inflows and FDI outflows, as it is against economic theory. At the same time, the R-squared values of all three models were 27.9%, 49.6% and 27.9%, meaning that these models are not desirable.

Table 4. Pooled ordinary least squares (OLS), fixed effect, random effect and Hausman test.

Pooled OLS					**Fixed Effect**				**Random Effect**			
Dependent Variable: GDP Method: Panel Least Squares Sample: 2005 2016: Periods included: 12 Cross-sections included: 10 Total panel (balanced) observations: 120					Dependent Variable: GDP Method: Panel Least Squares Sample: 2005 2016: Periods included: 12 Cross-sections included: 10 Total panel (balanced) observations: 120				Dependent Variable: GDP Method: Panel EGLS (cross-section random effects) Sample: 2005–2016 Periods included: 12 Cross-sections included: 10 Total panel (unbalanced) observations: 117			
Variable	Coefficient	Std. Error	*t*-statistic	Prob.	Coefficient	Std. Error	*t*-statistic	Prob.	Coefficient	Std. Error	*t*-statistic	Prob.
C	1.755956	0.587466	2.989036	0.0034	−4.367990	1.367125	−3.195019	0.0018	1.755956	0.511377	3.433781	0.0008
EXPORTS	−0.145173	0.046726	−3.106882	0.0024	−0.073646	0.051067	−1.442138	0.1522	−0.145173	0.040674	−3.569162	0.0005
IMPORTS	0.143618	0.047209	3.042188	0.0029	0.252786	0.047424	5.330282	0.0000	0.143618	0.041094	3.494842	0.0007
FDI_INF	0.306682	0.081543	3.760989	0.0003	0.351035	0.079217	4.431308	0.0000	0.306682	0.070981	4.320595	0.0000
FDI_OUTF	−0.288698	0.089749	−3.216736	0.0017	−0.342035	0.087281	−3.918765	0.0002	−0.288698	0.078125	−3.695361	0.0003
R-squared		0.279053			*R*-squared		0.496466		*R*-squared		0.279053	
Adjusted *R*-squared		0.253976			Adjusted *R*-squared		0.434712		Adjusted *R*-squared		0.253976	
F-statistic		11.12810			*F*-statistic		8.039406		*F*-statistic		11.12810	
Prob(*F*-statistic)		0.000000			Prob(*F*-statistic)		0.000000		Prob(*F*-statistic)		0.000000	
Correlated Random Effects—Hausman Test Equation: Untitled test cross-section random effects												
Test Summary		Chi-Sq. statistic	Chi-Sq. d.f.	Prob.	Cross-section random effects test comparisons							
Cross-section random		40.796545	4	0.0000	Variable		Fixed		Random		Var. (Diff.)	Prob.
Cross-section random effects test comparisons												
Variable	Fixed	Random	Var. (Diff.)	Prob.	C		−4.367990		1.367125		−3.195019	0.0018
EXPORTS	−0.073646	−0.145173	0.000953	0.0205	EXPORTS		−0.073646		0.051067		−1.442138	0.1522
IMPORTS	0.252786	0.143618	0.000560	0.0000	IMPORTS		0.252786		0.047424		5.330282	0.0000
FDI_INF	0.351035	0.306682	0.001237	0.2073	FDI_INF		0.351035		0.079217		4.431308	0.0000
FDI_OUTF	−0.342035	−0.288698	0.001515	0.1705	FDI_OUTF		−0.342035		0.087281		−3.918765	0.0002

Source: our computations.

3.4.3. Panel Fully Modified Least Squares (FMOLS)

In addition, we have conducted a panel fully modified ordinary least squares (FMOLS) test, a non-parametric technique dealing with serial correlation (see Table 5).

Table 5. Panel fully modified least squares (FMOLS).

Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
EXPORTS	−0.090125	0.062650	−1.438549	0.1535
IMPORTS	0.226418	0.055913	4.049459	0.0001
FDI_INF	0.327937	0.096441	3.400383	0.0010
FDI_OUTF	−0.327248	0.105604	−3.098812	0.0025
R-squared	0.481717			
Adjusted *R*-squared	0.411533			

Source: our computations. Dependent variable: GDP. Method: Panel fully modified least squares (FMOLS). Sample (adjusted): 2006–2016. Periods included: 11. Cross-sections included: 10. Total panel (balanced) observations: 110. Panel method: Pooled estimation. Cointegrating equation deterministic: C. Coefficient covariance computed using default method. Long-run covariance estimates (Bartlett kernel, Newey–West fixed bandwidth).

From Table 5, we observe that export does not contribute to economic growth, GDP, as the *p*-value is 15.3, which is above 0.05. The imports, FDI inflows and FDI outflows contribute to economic growth, GDP at the rate of 22.6%, 32.7% and 32.7%, respectively. The value of *R*-squared shows that 48.17% of the variance in GDP is explained by our variables.

3.4.4. VECM and VAR Analyses

VECM

We also conducted various tests using the vector error correction model (VECM), which is suitable to investigate cointegration for panel data series. Therefore, we applied the unit root test, the Hadri unit root test and the Johansen Fisher cointegration test. The first test showed that there was no unit root in the series, while the second test confirmed that the series was nonstationary. According to the third test, there was a minimum of at most one cointegration relationship between our variables. Therefore, we concluded that the VECM model was significant.

In Table 6, the *p*-value is 0.0, which is below 0.05, and thus there is a long-run equilibrium relationship between the variables. R-squared is 62.20 %, and therefore this model is desirable.

Table 6. Estimation method: least squares.

Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C (1)	−1.168900	0.129244	−9.044155	0.0000
C (2)	0.537198	0.131821	4.075221	0.0001
C (3)	0.070987	0.129344	0.548823	0.5834
C (4)	0.048034	0.066502	0.722301	0.4705
R-squared	0.622065			
Adjusted *R*-squared	0.568766			

Source: our computations. Estimation method: Least squares. Sample: 2008–2016. Included observations: 90. Total system (balanced) observations: 450.

Wald Test

Furthermore, we conducted the Wald test in order to choose between the pooled effect model and the fixed effect model. As the null hypothesis was accepted, we concluded that the pooled regression was adequate in our case.

From Table 7, one can see that the null hypothesis was rejected ($p < 0.05$). This confirms that our variables established a short-term equilibrium among them.

Table 7. Wald test.

Wald Test: System: %			
Test Statistic	**Value**	**df**	**Probability**
Chi-square	18.17986	3	0.0004
Null hypothesis: C (2) = C (3) = C (4) = 0			

Source: our computations.

3.5. Johansen Cointegration Test

Table 8 indicates the results of the Johansen Fisher cointegration test, which estimates the restricted or unrestricted VECM in order to identify short- and long-term relationships among variables. This procedure was important for the estimation of error correction in our models.

From Table 8, one can notice that for both the unrestricted cointegration rank test displaying trace and the unrestricted cointegration rank test displaying maximum Eigenvalues, there is a minimum of at most one cointegration relationship between the variables.

3.6. Discussion

The above results indicate that the determinants of sustainable economic growth in CEE countries are found missing, as without exports, there is no sustainable economic growth with imports, FDI inflows and FDI outflows, as this is against economic theory. The ten nations during the period of 2005–2016 have failed to achieve sustainable economic growth as the benefits of increased imports and FDI inflows have failed to convert them into exports. The imports do not bring any growth to the economy as the imports lead to dry out the foreign exchange reserve of these nations. Moreover, when there is growth of FDI inflows, there is no proportionate to exports. It indicates the FDI inflows were used in the form of imports which result in debt or loss of income to the economy. The FDI inflows indicate that there is no growth in domestic consumption of capital and savings to increase production. As a result, there is no export and there is no income. In view of the FDI outflows, the domestic capital has not been utilized in the production and there is no sustainable economic growth.

Table 8. Johansen cointegration test.

Unrestricted Cointegration Rank Test (Trace)					Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.05 Critical Value**	**Prob. ****	**Hypothesized No. of CE(s)**	**Eigenvalue**	**Max-Eigen Statistic**	**0.05 Critical Value**	**Prob. ****
None *	0.557148	168.8845	69.81889	0.0000	None *	0.557148	73.30672	33.87687	0.0000
At most 1 *	0.351002	95.57780	47.85613	0.0000	At most 1 *	0.351002	38.90924	27.58434	0.0012
At most 2	0.298090	56.66856	29.79707	0.0000	At most 2	0.298090	31.85556	21.13162	0.0011
At most 3	0.235800	24.81300	15.49471	0.0015	At most 3	0.235800	24.20335	14.26460	0.0010
At most 4	0.006751	0.609649	3.841465	0.4349	At most 4	0.006751	0.609649	3.841465	0.4349
Trace test indicates 2 cointegrating equations at the 0.05 level. * denotes rejection of the hypothesis at the 0.05 level ** MacKinnon et al. (1999) *p*-values					Max-eigenvalue test indicates 2 cointegrating equations at the 0.05 level. * denotes rejection of the hypothesis at the 0.05 level ** MacKinnon et al. (1999) *p*-values				

Source: our computations. Johansen cointegration test. Sample (adjusted): 2008–2016. Included observations: 90 after adjustments. Trend assumption: Linear deterministic trend. Series: GDP EXPORTS IMPORTS FDI_INF FDI_OUTF. Lags interval (in first differences): 1 to 2.

4. Conclusions and Policy Implications

In the present study, we started from the premise that internal and external factors play an important role in the sustainable economic growth of CEE countries. In this sense, we estimated five econometric models of economic growth, with the following dependent variables as proxies for economic growth: GDP; GDP_P_CAP; GDP_PPP; GDS; and GDC. The independent variables included in these models were imports, exports, financial direct investment inflow (FDI_INF) and financial direct investment outflow (FDI_OUTF).

In our view, an important factor impacting on economic growth is denoted by the ratio between financial direct investment inflow (FDI_INF) and financial direct investment outflow (FDI_OUTF). Figure 6 shows that the index was above 1 for the entire period analyzed, except for one year in countries such as Estonia, Lithuania, Romania, Poland, Slovenia and Slovakia. The evolution of the indicator explains the statistically significant influence of FDI_INF and FDI_OUTF on the dependent variables GDP, GDP_P_CAP, GDP_PPP and GDC.

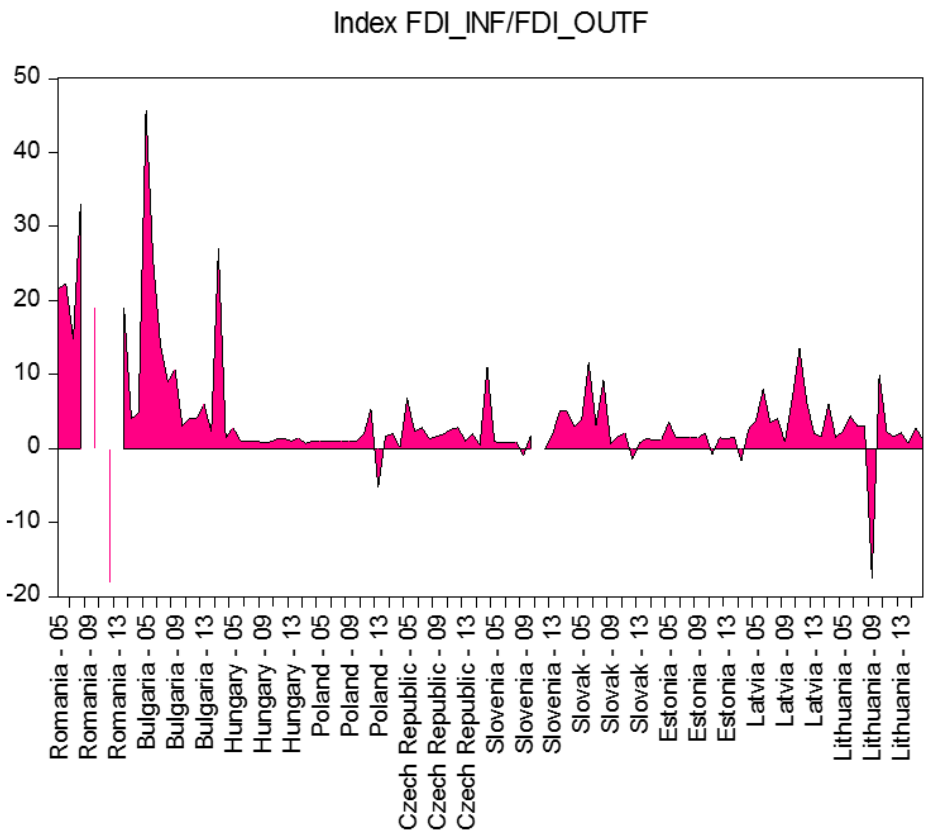

Figure 6. Evolution of the financial direct investment inflow (FDI_INF)/financial direct investment outflow (FDI_OUTF) index for the CEE countries.

Another explication for the evolution of sustainable economic growth is shown in Figure 7. During the entire period, the value of imports exceeded the value of exports, except for the case of Slovenia and Latvia during 2009–2013. The super unit value of the indicator strengthens the statistically significant influence that the independent variables IMPORTS and EXPORTS have had on indicators of sustainable economic growth: GDP, GDP_P_CAP, GDS and GDC. In the case of Poland, during the period 1996–2015, efficiency-seeking and market-seeking reasons were the basis for FDI inflow from Organisation for Economic Co-operation and Development (OECD) members (Cieślik 2019).

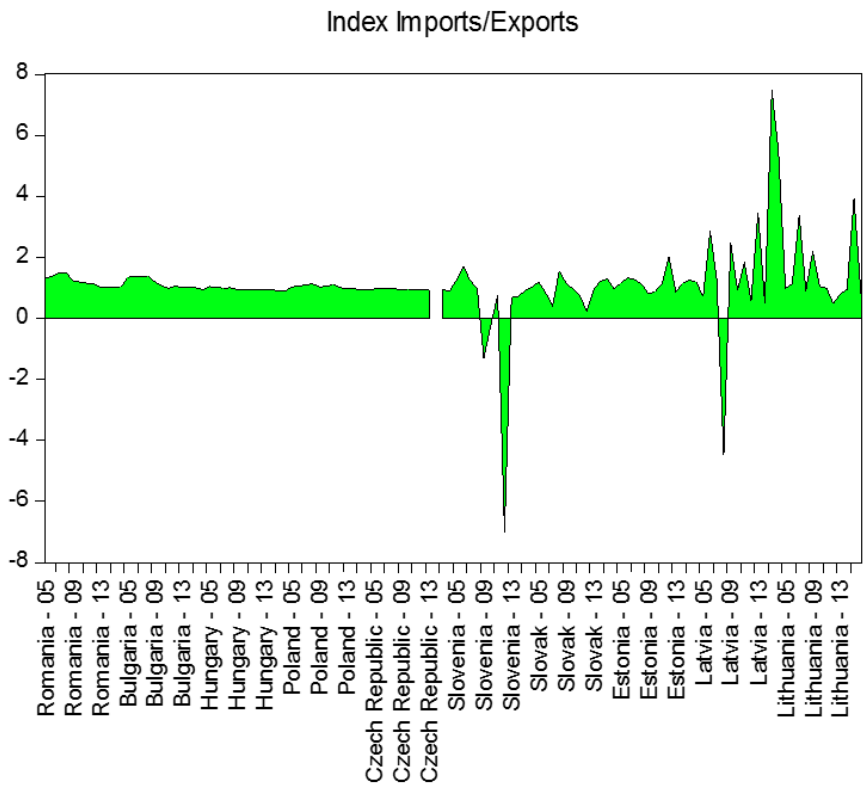

Figure 7. Evolution of the imports/exports index for the CEE countries.

In our study, financial direct investment inflows and outflows had a significant influence on GDP. Moreover, in our opinion, the freedom of saving is influenced by other factors such as fear of sustainable expenditure and uncertainty. The fear of uncertainty may be fueled by the following:

(a) Transition to free trade and market economy;
(b) Habit of controlling expenditures, inherited from the previously controlled economy;
(c) Uncertainty of the free market and European Union.

Our results confirm that imports and financial direct investment inflow have a major positive influence on the economic growth of CEE countries. This means that, on the one hand, imports of raw materials have created the premise for obtaining high value-added products in these countries such as chemical fertilizers, car manufacturing and food by importing raw materials. On the other hand, financial direct investment inflow had a major direct influence on economic growth indicators, meaning that it contributed to increasing the added value of products manufactured in these countries by creating new jobs and through the fiscal facilities granted to companies investing in this region. At the same time, results reported a negative correlation between the indicators of economic growth and exports and financial direct investment outflow, which suggests that they were insufficient to accommodate the needs of sustainable economic growth for CEE countries. From an economic point of view, the negative influence of exports on economic growth can be explained by the increase in exports of raw materials and semi-finished products with a small added value. The negative influence of financial direct investment outflow can be explained by the diminished economic power of investors from CEE countries to make direct investments in other countries, especially in the European Union.

The results of this research differ from those of Melnyk et al. (2014), stating that financial direct investment inflow increases the regional growth rate. Pilipovic et al. (2015) examined the relationship between FDI and national economic policy during the previous economic crisis across various European Union member states and CEE countries (i.e., Bulgaria, Croatia, Greece, Ireland, Italy, Romania, Portugal, Spain, Baltic countries) and the results were as follows:

1. FDI was neither a blessing nor a curse for national economies;
2. The economic crisis did not attract FDI;
3. An economy with a sound currency would attract FDI;
4. Without incentives such as those given by authorities from Bulgaria, Croatia and Romania, FDI would not enter national economies.

Contrariwise to Pilipovic et al.'s (2015) research, our findings do not support such conclusions. Hence, this implies that savings play a bigger role than capital formation. One reason triggering low capital formation is that economies from these CEE countries received huge investments from state funds. A second reason is the capital formation was less incentivized in the former members of the Soviet Bloc. A third reason is that, due to the centrally regulated economy, foreign investments were less encouraged. In terms of policy implications, our results suggest that a market economy and economic liberalization are fundamental steps towards achieving sustainable economic growth.

The results presented in this paper have major implications for policy makers in Central and Eastern European countries. Firstly, the governments in this region should facilitate imports of goods and services from other countries without customs barriers or they should reduce customs tariffs in order to reduce the price of imported goods.

Secondly, policy makers must provide important tax incentives to companies that are willing to make direct investments in other countries outside the European Union.

Thirdly, the commercial banks from these countries should grant investment loans on favorable terms to domestic and foreign investors in order to develop business, create jobs and increase the export of finished products and the consumption of goods and services.

Fourthly, there shall be encouragement for import substitution so that there is higher production and it will increase national income, GDP.

Fifthly, governments must prepare the consolidated report on export promotion measures including incentives.

Sixthly, every export is added to national wealth and for the same, national planning has to promote the private sector and joint sectors for higher productivity towards sustainable economic growth.

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Abbreviations

GDP	gross domestic product
GDP_P_CAP	gross domestic product per capita income
GDP_PPP	gross purchasing power parity
EXPORTS	total exports of goods
IMPORTS	total imports of goods
FDI_INF	financial direct investment inflow
FDI_OUTF	financial direct investment outflow
GDS	gross domestic savings
GDC	gross domestic capital
OECD	Organisation for Economic Co-operation and Development
BRICS	Association of five emerging economies: Brazil, Russia, India, China, South Africa

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