

## THE NEXUS BETWEEN ECONOMIC GROWTH, BANKING SECTOR DEPTH, AND FOREIGN DIRECT INVESTMENT IN SELECT CENTRAL AND EASTERN EUROPEAN COUNTRIES

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### Abstract

The goal of this research is to consider the influences of foreign direct investment and banking sector depth on economic growth, by analysing these factors in six Central and Eastern European countries (Bulgaria, Croatia, the Czech Republic, Hungary, Poland, and Romania) in the period between 2000 and 2018. Cointegration among the variables was confirmed using the Westerlund panel cointegration test. The outcomes of the panel autoregressive distributed lag model confirmed the positive influence of foreign direct investment and the negative impact of the banking sector depth on the economic growth in the observed countries. The results of the short-term analysis revealed the insignificant influence of the banking sector depth and the notable positive influence of foreign direct investment on economic growth.

**Key words:** banking sector depth, economic growth, foreign direct investment, panel analysis

## ПОВЕЗАНОСТ ЕКОНОМСКОГ РАСТА, ДУБИНЕ БАНКАРСКОГ СЕКТОРА И СТРАНИХ ДИРЕКТНИХ ИНВЕСТИЦИЈА У ОДАБРАНИМ ЗЕМЉАМА ЦЕНТРАЛНЕ И ИСТОЧНЕ ЕВРОПЕ

### Апстракт

Циљ истраживања је сагледавање утицаја страних директних инвестиција и дубине банкарског сектора на економски раст на узорку шест земаља Централне и Источне Европе (Бугарске, Хрватске, Чешке, Мађарске, Пољске и Румуније) у пери-

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оду од 2000. до 2018. године. Коинтеграција међу варијаблима потврђена је употребом *Westerlund* панел коинтеграционог теста. Резултати панел ауторегресивног модела са дистрибутивним временским помаком потврдили су позитиван утицај страних директних инвестиција и негативан утицај дубине банкарског сектора на економски раст у анализираним земљама. Резултати краткорочног аспекта анализе открили су безначајан утицај дубине банкарског сектора и значајан позитиван утицај страних директних инвестиција на економски раст.

**Кључне речи:** дубина банкарског сектора, економски раст, стране директне инвестиције, панел анализа

### INTRODUCTION

Within endogenous theories of growth, which strive to illustrate whence the economy can generate growth even if there is no exogenous technological progress, it is considered that trade and finance can be important determinants impacting production, since their influence is not only temporary but also produces a permanent change in the growth path (Kawa, Wajda-Lichy, Fijorek, & Denkowska, 2020). As essential elements of international cooperation, inflows of foreign investment carry unequivocal advantages for the country through boosting new work engagements, increasing productiveness, the acquisition of new technologies and knowledge, the diffusion of innovations, and other types of technological changes (Mousumi, 2013). The degree to which developing countries can acquire and implement new technologies and designs arising from developed countries is the basis of their growth rate, and the channel through which countries can take advantage of the adoption of new technologies is a foreign direct investment (FDI) (Hermes & Lensink, 2003). Inflows of foreign direct investment were regarded as an essential part of the catching-up process of Central and Eastern European countries (CEEC) by the old member states of the European Union, due to technical progress through the efficiency of spillovers (Jimborean & Kelber, 2017). In addition to the wider macroeconomic and institutional perspectives, the spillover effect for the host country relies on the capacity of the developmental level of the internal financial sector. The financial sector can set to what degree foreign investors will be able to transform their capital into efficient investments in the country of destination, additionally increasing the range of spillovers of new technological knowledge to the domestic companies (Sghaier & Abida, 2013). The scope of the improvement of financial institutions might be an essential determinant in deciding if external companies function without affecting the host economy, or whether they enhance the spurs of technology transfers (Nageri, Nageri, & Amin, 2015).

Most of the studies associating FDI and the financial and economic development of the country emphasize that the outcomes of FDI on economic growth rely upon the absorptive capacity limit of countries, includ-

ing the improvement of the national financial system. Choong and Lim (2009) have shown that, in addition to direct contributions, FDI increases the economic growth of the country through its interaction with financial development. Exploring the relationship between FDI, economic growth, and financial development, Alfaro, Chanda, Kalemli-Ozcan, and Sayek, (2004) affirm that countries with properly grown financial markets can utilize FDI more efficiently and can produce tremendously better conditions. Additionally, the authors indicate that the nexus uniting FDI and economic growth is causal, and that FDI boosts growth through financial markets. Pradhan, Arvin, Bahmani, and Hall (2019) reached similar conclusions using a sample of G-20 countries. In G-20 countries, a well-developed financial system is essential for higher FDI inflows, and vice versa. Capital for the additional stimulation of FDI provides a well-developed financial market, consequently achieving a higher economic growth of countries. That implies that economic growth is stimulated through both FDI inflows and financial development. On the other hand, Acquah and Ibrahim (2019) conclude that the financial sector minimizes the favorable impact of FDI on economic growth. The conclusions of the examination, based on a two-system generalized method of moments, show that a financial system is underdeveloped because funds are distributed for unproductive purposes, or because distributed resources are invested in risky projects which harm economic growth. Therefore, the financial system does not encourage FDI inflows. Choong (2011) finds confirmation that a well-developed financial system is a significant requirement for FDI to have a positive impact on economic growth in a panel of 95 advanced and emerging countries in the period between 1983 and 2006. Thus, a more appropriate inference than “higher FDI inflows can cause higher growth” is “more FDI inflows with better finance can lead to higher growth,” as Choong (2011, p. 832) concludes. In fact, the presented lack of formal clarity on the influence of FDI and financial development on economic growth is the central motivation for this research.

As per the above, this article intends to examine the association between financial development, economic growth, and FDI in six CEECs, which can be classified as the European Union’s new member states. This article discusses the financial development construct on bank-based indicators, which mirror the depth of the banking sector. The reason this form is used for determining financial development is that capital markets in the considered countries are not sufficiently developed, as well as the fact that financial systems are bank-based because approximately 85% of the assets of the financial sector are bank assets (Égert, Backé, & Zumer, 2016). Furthermore, the quantity of accessible measurements for capital market indicators is inadequate to form sufficiently long time series. A step forward in the literature so far is reflected in the use of a composite index of financial development based on banks consisting of four indica-

tors, especially bearing in mind the shortcomings and inappropriateness of the use of one component as a representative of the development of the whole financial sector. Foreign direct investment and economic growth are represented by the net inflows of foreign direct investment and gross domestic product per capita, respectively. The main aim of this examination is to investigate the long-term and short-term impact of FDI and the banking sector depth on economic growth in six CEECs in the period between 2000 and 2018. The foremost contribution of this research is to empirically expose the effects of the influence of FDI and banking sector depth on the economic growth in select CEECs, in a manner that could informatively complement the existing literature. For the realization of the stated aim, the paper utilizes the error-correction-based panel cointegration tests introduced by Westerlund (2007), which notably exceed standard residual-based tests in terms of robustness to cross-sectional dependence. Furthermore, the long-term and short-term relations are verified through the Panel Auto-Regressive Distributed Lag error correction model with the Pooled Mean Group estimators.

The rest of the paper is structured as follows. The subsequent section explains the methodology and the data indicators of banking sector depth, foreign direct investment, and economic growth. The principal statistical outcomes are stated in the third section. In the final section, the relevant conclusions and proposals obtained from the examination are presented.

#### *DATA AND METHODOLOGY*

For the examination of the nexus among economic growth, banking sector depth, and foreign direct investment, the analysis utilized annual data, noted in the period between 2000 and 2018. The sample included in the examination consists of six new European Union (EU) member states that do not use the euro as official currency - Bulgaria, Croatia, the Czech Republic, Hungary, Poland, and Romania. One of the reasons for the selection of these former transition countries is the fact that, by joining the European Union, these countries became more engaging areas for foreign investment since they have had to adopt various regulations of the EU, which provided them with greater credibility among investors. Moreover, in recent decades, the largest recipients of foreign direct investment have been transition economies, due to market liberalization, natural resources, and low labor costs (Andrasic, Mirovic, & Kalas, 2019). The selection of these countries was additionally conditioned by data availability.

Since the main objective of this article is to scrutinize the impacts of FDI and banking sector depth on economic growth, the following variables are used in the analysis:

- Gross Domestic Product Per Capita - GDPPC variable;
- Foreign Direct Investment – FDI variable; and
- Composite Index of Banking Sector Depth – CIBS variable.

The World Bank database served as the source of data for the descriptions of the variables. Economic growth is measured utilizing the annual percentage growth rate of gross domestic product per capita, based on constant local currency (aggregates are based on constant 2010 U.S. dollars). The general appearance of estimating gross domestic product per capita, not in expressions of the total population but of the working-age population, originates from the theory of economic growth, which denotes that the working-age population is nearer to the labor input of the production function than the total population (Neuhaus, 2006). Besides, gross domestic product per capita is a standard measure of economic growth in finance-growth research (Stolbov, 2016). Foreign direct investment is presented as the sum of equity capital, the reinvestment of earnings, other long-term capital, and short-term capital. Variable FDI records net investment inflows, which are divided by GDP. The FDI net inflows are commonly used in the research of the association between FDI and economic growth, as well as between the indicators of financial development and FDI (Acquah et al., 2019; (Amoh, Abdallah, & Fosu, 2019; Dellis, 2019; Jimborean et al., 2017; Lee & Chang, 2009).

The composite index of banking sector depth is created from several indicators by utilizing Principal Component Analysis (PCA). The reason for utilizing the CIBS is the impossibility of adequately betokening banking sector depth by adopting a single variable, as shown in previous studies (Beck, Levine, & Loayza, 2000; Choong, 2011; Levine, Loayza, & Beck, 2000). In this examination, four variables are used as representations of banking sector depth. Domestic credit to the private sector by banks, domestic credit to the private sector by financial corporations, claims on the central government, and broad money supply are used to construct a composite index of banking sector depth using PCA. As Aluko and Ajayi (2018) point out, PCA includes the conversion of several correlated assemblages of variables into a lesser number of uncorrelated variables. PCA moderates an assemblage of examined variables into principal components that maintain the utmost information from the initial set of variables. Procedural details are explained by Pradhan, Arvin, Norman, & Hall, (2014).

Measures of central tendency, measures of variability, and the results of correlation analysis are shown in Table 1. Cross-sectional dependence often leads to the lack of a normal distribution of data, as indicated by the Jarque-Bera statistics in Table 1 for all series except for the CIBS series. Nevertheless, by utilizing appropriate panel tests suitable for application in cases of cross-sectional dependence, this issue can be controlled appropriately. The variables are not highly correlated with each other, therefore utilizing variables in one regression equation will not lead to a problem of multicollinearity.

Table 1. Descriptive statistics and Correlation matrix of the variables

	GDPPC	FDI	CIBS
Mean	3.540289	5.591200	-1.75E-08
Median	4.112087	3.701897	0.1331185
Maximum	11.14421	54.64873	1.750006
Minimum	-7.262149	-41.50820	-2.248833
St. Dev.	3.165445	10.17489	1.000011
Skewness	-0.820510	1.641444	-0.229355
Kurtosis	4.780328	15.68413	2.313535
Jarque-Bera	27.84695	815.4070	3.237834
Probability	0.000001	0.000000	0.198113
Obs.	114	114	114
GDPPC	1		
FDI	0.0730	1	
CIBS	-0.4537	0.0460	1

Source: Authors' calculations

Panel datasets usually manifest cross-sectional dependence, which relies on the diverse aspects of the cross-sectional dependence itself, as well as the volume of the correlations over cross-sections, as De Hoyos and Sarafidis (2006) point out. Because the appearance of cross-sectional dependence causes difficulties in testing the stationarity of the data (Shariff & Hamzah, 2015), examining cross-sectional dependence is an essential matter, required to determine proper tests for examining the order of data integration, and for the consequential assessment of the established model. Hence, the analysis of the cross-sectional dependency is performed utilizing the Breusch–Pagan LM test and Pesaran-scaled LM test. The Lagrange multiplier exhibited by Breusch and Pagan (1980) is acceptable for a panel with  $N$  less than  $T$ , which is the character of the panel dataset in the research ( $N=6$   $T=19$ ). LM statistics, on which the test is established, as Baltagi, Feng, and Kao (2012, p.165) point out is:

$$LM = \sum_{i=1}^{N-1} \sum_{j=i+1}^N T_{ij} \hat{p}_{ij}^2 \rightarrow X^2 \frac{N(N-1)}{2} \quad (1)$$

Baltagi et al. (2012, p. 165) further point out that the residual correlation coefficient ( $\hat{p}_{ij}$ ) also appears in the Pesaran-scaled LM test, which is specified as follows:

$$LM_{pesaran} = \sqrt{\frac{1}{N(N-1)}} \sum_{i=1}^{N-1} \sum_{j=i+1}^N (T_{ij} \hat{p}_{ij}^2 - 1) \rightarrow N(0,1) \quad (2)$$

Without examining the cross-sectional dependency while carrying a unit root test, the assessments may be biased. The application of unit root tests, which symbolize the independence of cross-sectional units,

could lead to such biases. Consequently, a large portion of literature presents a confirmation of the co-movements of economic variables over the cross-section units, which led to the development of second-generation tests based on the premise of cross-sectional dependence in the unit root hypothesis (Das, 2019). In this regard, two second-generation unit root tests are utilized in this article: the Cross-sectionally ADF (CADF) test and the Cross-sectional augmented IPS (CIPS) test presented by Pesaran (2007). Pesaran (2007) utilized cross-sectional averages of lagged levels and first differences of the  $i$ -th cross-section in the panel in order to augment the conventional DF regression model:

$$\Delta Y_{it} = \alpha_i + \beta_i Y_{it-1} + \gamma_i \bar{Y}_{i-1} + \phi_i \Delta \bar{Y}_i + \varepsilon_{it} \quad (3)$$

The average of individual CADF statistics represents the CIPS statistics:

$$CIPS(N, T) = N^{-1} \sum_{i=1}^N t_i(N, T) \quad (4)$$

where  $t_i(N, T)$  is the cross-sectionally augmented Dickey-Fuller statistic for the  $i$ -th cross-section unit.

The article further utilizes the Westerlund (2007) error-correction-based panel cointegration tests. Two group statistics (Gt, Ga) test the alternative hypothesis that there is at least one unit that is cointegrated, while the two panel statistics (Pt, Pa) test the alternative hypothesis that the whole panel is cointegrated. The test was conducted via the `xtwest` command in Stata, taking into account cross-sectional dependence by applying the bootstrap approach. The complete statistics behind tests and procedural details are presented by Persyn and Westerlund (2008). If the cointegration is confirmed based on the Westerlund test, the subsequent step is to estimate the Panel Auto-Regressive Distributed Lag (ARDL) error correction model with the Mean Group (MG) or the Pooled Mean Group (PMG) estimators. As a solution to the heterogeneity bias shown by heterogeneous slopes in standard panel estimates (fixed and random effects), two different estimators (MG and PMG) were introduced by Pesaran and Smith (1995), and Pesaran, Shin, and Smith (1999). The Dynamic Fixed Effect estimator will not be checked because the DFE does not consider heterogeneous slope coefficients (Ehigiamusoe, Lean, & Lee, 2018). The fundamental difference between MG and PMG is that the MG estimator supports maximum heterogeneity since it allows intercepts and coefficients to differ unobstructedly across countries, while PMG is consonant under the postulate of long-run slope homogeneity. If the long-run homogeneity restrictions are accurate, MG estimations will be ineffective, and a PMG estimator will be imposed as more suitable, which will be checked by the Hausman test.

### RESULTS AND DISCUSSION

The basis of the necessity for testing cross-sectional dependence lies in the fact that even if there is a certain shock (interior or outer) that originates from one country, that shock may not influence other countries at a similar level regardless of whether they have formal EU economic policies (Sönmez & Sağlam, 2017). Table 2 contains the outcomes of the cross-sectional dependence and the unit root tests. Consistent with the Breusch–Pagan LM and Pesaran-scaled LM tests, the cross-sectional dependence can be confirmed. The results affirm the exceptionally incorporated economies of the examined countries, indicating that spatial spillover consequences will become more probable. Therefore when a shock happens in one country, it will likewise influence the other countries. The tests' outcomes determine the selection of the second generation unit root tests, which take into account cross-sectional dependence. According to the CADF test, all variables, except the composite index of banking sector depth, are not stationary at the level, while the results of the CIPS test show that the variables which represent economic growth and foreign direct investment are stationary at level. Nevertheless, after the first difference, each of the nonstationary variables becomes stationary. The appearance of different levels of stationarity, as well as the occurrence of cross-sectional dependence, sustain the utilization of the Westerlund cointegration test and the panel ARDL model.

Table 2. Cross-sectional dependence and unit root tests results

Variable	GDPPC	FDI	CIBS
Breusch–Pagan LM	120.8042 (0.0000)	64.40385 (0.0000)	162.3476 (0.0000)
Pesaran-scaled LM	19.31712 (0.0000)	9.019867 (0.0000)	26.90186 (0.0000)
CADF (level)	-2.193	-1.899	-2.406*
CADF (first difference)	-3.910*	-3.294*	-3.958*
CIPS (level)	-3.060*	-2.511*	-1.688
CIPS (first difference)	-5.091*	-4.388*	-2.371*

Notes: Figures in the parenthesis are p-values,

\* symbolizes the rejection of the null hypothesis of unit root

Source: Authors' calculations

The outcomes of the Westerlund error-correction-based panel cointegration tests with robust p-values are detailed in Table 3. Circumventing the redundant parameterization, this research holds a small number of lags and leads, and a shorter kernel width, since the outcomes of the test, in examination with the small dataset, can be sensitive to the determination of these parameters (Demetriades & James, 2011; Westerlund, 2007). In the examination, the Bartlett kernel window width is 2, and



a maximum lag length of 1 and the lead length of 1 are chosen according to the Akaike Information Criterion (AIC). The null hypothesis of no cointegration can be rejected at a 1% significance level, according to the robust p-value of Gt, Pt and Pa statistics, which implicate the equilibrium association amongst the variables. Considering the panel tests (Pt, Pa), which rejected the null hypothesis, it can be inferred that the whole panel is cointegrated. More precisely, results designate the appearance of the cointegration relation between economic growth, foreign direct investment, and banking sector depth in the complete sample of all countries.

*Table 3. The Westerlund cointegration test results*

Westerlund's Test	Value	Z-value	P-value	Robust P-value
Gt	-3.891	-4.936	0.000	0.000
Ga	-5.166	1.546	0.939	0.300
Pt	-6.222	-1.962	0.025	0.000
Pa	-7.515	-0.723	0.235	0.000

Source: Authors' calculations

Table 4 presents the information of the whole panel and includes long-run and short-run coefficients, the outcomes of the Hausman test, and the error correction term (ECT). The long-run homogeneity restriction is not rejected according to the Hausman test. Therefore, the PMG is a more efficient model to perceive the relationship between economic growth, foreign direct investment, and banking sector depth. From the part of Table 4 which details the long-run coefficients, it can be established that a 1% increase in FDI net inflows enhances economic growth by 0.24%, while a 1% rise in banking sector depth decreases economic growth by 1.71%. From a long-term perspective, the outcomes are in line with the conclusions of Cave, Chaudhuri, and Kumbhakar (2019). Using data for 101 countries in the period between 1990 and 2014, the authors discovered a negative relationship between the development of the banking sector and economic growth. They explain the cause of their disagreement with many studies that have revealed a positive relationship between economic growth and the development of the banking sector by pointing out the fact that these studies use a single indicator of the banking sector development. As mentioned in this paper in the data presentation section, an adequate representation of the depth of the banking sector requires the usage of various indicators. Additionally, as one of the explanatory variables, the authors used net foreign direct investment and discovered a positive and statistically significant impact of the FDI in low- and middle-income countries. The result of the positive influence of FDI on economic growth is not unexpected. The financial and political integration of countries in the EU prompts investors to be more encouraging about planned reformations, institutional enrichment, and the imple-

mentation of stable economic policy, as Tang (2015) points out. Increased inflow of foreign direct investment in synergy with trade flows notably stimulates the economic growth of countries. Tang's (2015) study focuses on the question of whether higher financial market development boosted economic growth in Central and Eastern European countries in the period between 1997 and 2012. The author finds that, despite the increased growth of bank credits in CEECs, bank credit flows harm economic growth. The expanding dependence of banks in CEECs on the EU supply of bank capital can be the reason behind the negative effect, since the bank credits might not be managed for productive investments due to EU bank dominance. The bank credits utilized for uncertain investments might avert important supplies of the resources away from the productive localities of the economies. The detrimental influence of credit in the acceleration stages of the credit sequence can be the outcome of the harmful consequences of the gathering of cyclical systemic risk and overindebtedness (Iwanicz-Drozdowska, Bongini, Smaga, & Witkowski, 2018). These results of the positive influence of FDI and the negative impact of banking sector development are in line with our outcomes. However, countries may not have reached a situation where there is 'too much' finance that starts to harm economic growth when credit to the private sector encompasses 100% of GDP (Arcand, Berkes, & Panizza, 2015). For example, Grabowski and Maciejczyk-Bujnowicz (2016) reveal that the optimal level of financial depth in the Polish economy is 0.43, and beyond that level, the financial system appears to be 'too large' compared to the scope of the Polish economy. An additional boost in the level of bank credit gives rise to the 'vanishing effect' of the influence on economic growth.

From a short-term aspect, the beneficial impact of FDI and a positive but statistically inconsequential effect of the banking sector's depth on economic growth is observed. The speed of adjustment (ECT) is negative and statistically significant, which points towards the fact that a long-term equilibrium relationship exists among economic growth, foreign direct investment, and banking sector depth. More precisely, GDPPC, FDI, and CIBS are cointegrated and moving together to long-term equilibrium. The effect of an imbalance caused by some shock is corrected by 59% every year. The ECT coefficient of 0.59 designates that there was 59% of adjustment that occurred in the previous period toward equilibrium, while 41% of disequilibrium remains, which implies that a half-time to the convergence is less than one year. Since the PMG estimator assumes the heterogeneity of short-term coefficients, the following table presents the ECT and short-term coefficients of countries.

*Table 4. Pooled Mean Group Regression and Hausman test results*

Variables	PMG (1 0 0)			
	Long-run coefficient	P-value	Short-run coefficient	P-value
FDI	0.2360107	0.003	0.303923	0.090
CIBS	-1.706607	0.000	0.182826	0.827
Error correction term			-0.5877624	0.000
Constant			1.560038	0.005
Hausman test	2.51	0.2846		

Source: Authors' calculations

As shown in Table 5, the statistically significant positive influence of foreign direct investment on economic growth in the short-run is observed only in the case of Poland and Romania, while the short-run impact of banking sector depth is not statistically significant in any of these countries. The short-term results imply that policies and strategies for luring FDI necessitate being composed with a view on the long-term aspect in order to maximize the positive projections of FDI on the prosperity of the countries (Dinh, Vo, The Vo, & Nguyen, 2019). On the other hand, having in mind the long-term negative impact and insignificant short-term impact of the development of the banking sector on economic growth, these countries necessitate sounder banking regulations that would facilitate generating significant positive impacts of banking sector development on economic growth (Tang, 2015).

*Table 5. PMG short-run coefficient of the individual countries*

Countries	PMG – short-run coefficient					
	FDI	P-value	CIBS	P-value	ECT	P-value
Bulgaria	0.026155	0.779	-0.12507	0.606	-1.145661	0.000
Croatia	0.206142	0.485	-2.46409	0.419	-0.6138893	0.007
The Czech Republic	-0.058645	0.720	2.365367	0.237	-0.7694635	0.000
Hungary	-0.006584	0.847	-0.77295	0.798	-0.0103361	0.957
Poland	0.606524	0.004	0.332800	0.782	-0.2493366	0.144
Romania	1.049946	0.011	2.760909	0.467	-0.7378878	0.000

Source: Authors' calculations

The dynamic stability among variables exists when the ECT coefficient is negative within the unit circle (not lower than -2) (Loayza & Ranciere, 2006). In the case of the examined countries, a negative ECT coefficient is perceived in all cases. However, the coefficient is not significant in the case of Hungary and the Republic of Poland, indicating that long-term equilibrium among the variables exists, but is insignificant for economic growth. The half-time to convergence is quite short, less than half a year in the case of Bulgaria, Croatia, Czech Republic, and Romania.

### CONCLUSIONS

This paper focused on six countries of Central and Eastern Europe, which can be classified as new members of the European Union, namely Bulgaria, Croatia, the Czech Republic, Hungary, Poland, and Romania. By implementing annual data from the period between 2000 and 2018, the article exposes the nexus between banking sector depth, foreign direct investment, and economic growth. Banking sector depth is formed by a composite index consisting of domestic credit to the private sector by banks, domestic credit to the private sector by financial corporations, claims on the central government, and broad money supply. Foreign direct investment and economic growth are denoted by the net inflows of foreign direct investment and gross domestic product per capita, respectively. The principal aim of the analysis was to scrutinize the long-term and short-term impact of FDI and banking sector depth on economic growth. In the fulfillment of the stated aim, the long-term relation among the variables was first considered by utilizing the error-correction-based panel cointegration tests introduced by Westerlund (2007). Test outcomes established the presence of the cointegration relation between economic growth, foreign direct investment, and banking sector depth in the complete sample of countries. Further, the short-term and long-term influences of FDI and banking sector depth on economic growth were analyzed employing the PMG estimator. The long-term aspect of the examination exhibited the positive influence of FDI and the negative effect of the banking sector depth on the economic growth in the scrutinized countries. The outcomes of the short-term analysis revealed the devitalized effect of the banking sector depth and a significant positive impact of FDI on the growth. However, the short-term influence of FDI on economic growth across the panel was driven by a positive and meaningful impact only in Romania and Poland.

The principal contribution of the analysis is that it empirically exposes the repercussions of the influence of banking sector depth and foreign direct investment on economic growth in a manner that informatively complements the existing literature. Also, the conclusions of the examination may hold relevant policy suggestions. Foreign direct investment can advance the economic development forces of the host countries. Considering that banking sector development causes the net inflows of foreign direct investment, which, in turn, causes economic growth, policymakers should act to increase banking sector depth with binding financial control and banking reform. Stricter control and reform of the banking sector are essential, primarily because of the noted harmful influence of banking sector depth on economic growth, as the countries have still not reached the majority of the growth-damaging financial sector. Accordingly, restricting the augmentation of banking resource allocation to increase limitations on the lending and borrowing of the private sector is not required.

The main shortcomings of this research can also be characterized as the proposals for future examinations of the nexus between financial development, foreign direct investment, and economic performances. One of the main limitations of this paper is the fact that the data used in the research incorporates data from a period of economic crisis. Studies conducted by Law and Singh (Law & Singh, 2014), and Arcand et al. (2015), which take into account the years of crisis, reveal that more finance discourages economic growth. The stated limitations, combined with a lack of adequate data on capital markets, outline the possible imperfections of the survey, as well as important determinants for the advancement of future research.

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## ПОВЕЗАНОСТ ЕКОНОМСКОГ РАСТА, ДУБИНЕ БАНКАРСКОГ СЕКТОРА И СТРАНИХ ДИРЕКТНИХ ИНВЕСТИЦИЈА У ОДАБРАНИМ ЗЕМЉАМА ЦЕНТРАЛНЕ И ИСТОЧНЕ ЕВРОПЕ

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### Резиме

Рад се фокусира на шест земаља Централне и Источне Европе, које се могу класификовати као нове чланице Европске уније, а то су Бугарска, Хрватска, Чешка, Мађарска, Пољска и Румунија. Имплементацијом годишњих података из периода између 2000. и 2018. године, истраживање открива везу између дубине банкарског сектора, СДИ и економског раста. Главни циљ анализе је да се испитају дугорочни и краткорочни утицаји дубине банкарског сектора и СДИ на привредни раст. У испуњењу наведеног циља, дугорочни однос између променљивих је прво разматран коришћењем панел коинтеграционих тестова заснованих на корекцији грешака које је увео Вестерланд (2007). Резултати испитивања утврдили су присуство коинтеграционог односа између економског раста, СДИ и дубине банкарског сектора у комплетном узорку земаља. Надаље, анализирани су краткорочни и дугорочни утицаји дубине банкарског сектора и СДИ на привредни раст применом PMG проценитеља. Дугорочни аспект испитивања показао је позитиван утицај СДИ и негативан утицај дубине банкарског сектора на привредни раст у анализираним земљама. Резултати краткорочне анализе открили су девитализован ефекат дубине банкарског сектора и значајан позитиван утицај страних директних инвестиција на економски раст. Међутим, краткорочни утицај страних директних инвестиција на раст у целом панелу био је вођен позитивним и значајним утицајем само у Румунији и Пољској.

Главни допринос анализе је емпиријско излагање последица утицаја дубине банкарског сектора и директних страних инвестиција на економски раст у правцу који на поучан начин употпуњује постојећу литературу.

Закључци истраживања могу садржати и релевантне предлоге креаторима политике. СДИ могу унапредити снаге економског развоја земље домаћина. С обзиром на то да развој банкарског сектора значајно узрокује нето прилив страних директних инвестиција, што, с друге стране, узрокује економски раст, креатори политике би требало да делују у смеру повећања дубине банкарског сектора уз обавезујућу финансијску контролу и реформу банкарства. Већа контрола и реформа банкарског сектора су неопходни, првенствено због уоченог штетног утицаја дубине банкарског сектора на економски раст, јер земље још увек нису достигле већину финансијског сектора који штети расту. Сходно томе, није потребно ограничити повећање алокације банкарских средстава ради повећања ограничења кредитирања и задуживања приватног сектора.

Главни недостаци истраживања такође се могу окарактерисати као предлози за будућа испитивања везе између финансијског развоја, СДИ и економских перформанси. Једно од главних ограничења је да подаци коришћени приликом истраживања укључују податке из периода економске кризе. Студије које су спровели



Лоу и Синг (Law & Singh, 2014) и Аркон и други (2015), које узимају у обзир године кризе, откривају да више финансија обесхрабрује економски раст. Наведена ограничења, у комбинацији са недостатком адекватних података са тржишта капитала, указују на могуће несавршености истраживања, али и на важне детерминанте за напредак будућих истраживања.