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## Consumption vs. Investments for stimulating economic growth and employment in the CEE Countries – a panel analysis

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### ABSTRACT

The aim of this paper is to find out if the high economic growth rates achieved by the CEE countries are based either on consumption or on investments, considering many exogenous factors that impact on the economic growth and how these factors can contribute to the employment process in the CEE economies to stress if these trends of economic growth and employment are sustainable in the long run. We performed two Panel Least Squares and Pool Least Squares estimations to determine the impact of the exogenous variables on the economic growth (as GDP per capita growth) and on the unemployment rate in the short and long run, depending on the lags of the exogenous variables used in the analysis. We used yearly data series during 2004–2017 for eight selected CEE countries. Our results show that private consumption is positively related with economic growth in the short run, but it doesn't support the job creation process, in the same way as the savings rate can't determine positive effects on the employment. Public spending is strongly and negatively correlated with economic growth and positively correlated with the unemployment rate in the CEE region, while the net export is weakly impacting on the economic growth in the CEE region and doesn't support the employment process in this area. The impact of the domestic investments on the economic growth is weaker in the CEE area than the impact of both private and public spending, but they are positively correlated with the economic growth and negatively correlated with the unemployment rate, while the correlation of the foreign direct investments (FDIs) with both economic growth and unemployment is very weak, as it is the case of net exports. We conclude that the economic growth in the CEE area is mainly based on the private consumption in the short run but the private consumption doesn't support the job creation process either in the long run or in the short run. The qualitative factors included in the analysis by using global competitiveness index (corruption control, bureaucracy, infrastructure quality, governance effectiveness, political stability,

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rule of law factors, property rights, markets efficiency, etc.) and corruption perception index are strongly and positively correlated with the economic growth and negatively correlated with the unemployment rate.

## 1. Introduction

After acceding to the European Union (EU), the Central and Eastern European (CEE) economies achieved high economic growth rates, based both on attracting a large volume of FDI inflows and on a significant increase of the private consumption, boosted by the decreasing interest rates in this area and some very lax credit conditions. Many times, the CEE economies were compared to the Asian 'tigers' in terms of economic growth. However, the FDIs dropped and the consumption based on borrowings generated a high share of non-performing loans during the crisis. That is why it would be interesting to see if the re-launch of the economic growth after the crisis in the CEE area is based on investments or on consumption and how are the investment and consumption inter-correlated to see if the economic growth is sustainable in the long-run or a new crisis can erupt in the near future in the CEE area.

The FDIs impact on the economic growth was different among the CEE countries. A higher impact was observed for Hungary, the Czech Republic and Slovakia, whereas a lower impact was observed for Poland and Slovenia (Hlavacek & Domanska, 2016). The austerity measures adopted by those countries during the crisis resulted in low investment activity. FDIs are showing a longer-term downward trend. A new growth model is needed in the CEE region (Disoska, 2016). The novelty of this paper is that it analyzes the economic growth and employment together and it elaborates a complex model of economic growth and employment for the CEE region, based both on some quantitative and qualitative factors.

The significant emigration process in this region and increase of wages didn't support the FDIs inflows in this region after the crisis. Thus, FDIs volume remained modest after the crisis in the CEE region. Except for the Czech Republic and Hungary, the low wages represented a major advantage for the CEE economies in their race to attract FDIs. With an increasing competition from other developing economies, it is challenging to compete on wages alone or even taxation. Developing economies in Asia are already shifting into higher-value-added activities. However, the supply of skilled workers is not growing as quickly as may be needed in this region (Labaye et al., 2013).

The main issue for the developing economies is getting the financial resources in excess of domestic savings, which are not very high as in the developed economies. Total savings couldn't cover the domestic investments and CEE economies became dependent on the foreign capital. FDIs should support domestic investments, but this impact varies among countries depending on the national policies, the type of FDIs and the strength of the domestic firms (Agosin & Machado, 2005; Titarenko, 2005). Mišun and Tomšík (2002) proved the crowding in effect (complementary effects) in the Czech Republic and Hungary and the crowding out effect in Poland. Szkorupová

(2015) proved there is a crowding out effect in the Central and Eastern Europe (the Czech Republic, Estonia, Hungary and Slovakia) using panel regression. Therefore, FDIIs tend to substitute domestic investments in the CEE region on average. The national authorities in the CEE region granted much more advantages to the foreign investors, in a context of a very friendly fiscal environment with very low levels of corporate income tax, but all these advantages couldn't stop the large FDIIs outflows from the CEE countries, once the crisis erupted. So, the economic recovery remained to be achieved mainly through domestic effort. Thus, other factors – qualitative ones – started to gain importance in this area for the investments and the economic growth in this area. If the institutional nature of the factors shaping the framework where the firms act is not fully understood in the emerging economies, the economic policies may become inefficient. This can help firms in the emerging economies enhance their competitiveness (Peng, Wang, & Jiang, 2008). The developments in the institutional framework have been essential in reducing uncertainties for firms.

The relation between consumption and GDP is stronger for low and middle-income countries, because high-income countries allocate more capital for investment and for research and development purposes (Diacon & Maha, 2015). It is a general consensus that the economic growth in developing countries is necessarily consumption-led instead of investment-led, mainly because the private consumption share of GDP in these economies usually ranges between 70 and 75% (Mishra, 2011).

Kim (2017) investigated the relationship between the private consumption and other variables and economic growth in 52 Asian countries/territories and showed that the consumption-led economic growth hypothesis in Asia is validated, considering some important specific features of the Asian economies such as high global competitiveness and some high-saving rates or large public spending. However, the growth of consumption and investments has mainly stimulated imports in the CEE countries. They were not balanced with the exports, thus creating a large vulnerability for the CEE economies. Only Slovenia and the Czech Republic presented stable exports (Disoska, 2016).

After 2014, this region started to grow again, displaying very high rates in some CEE countries such as Romania, Slovenia, Poland or the Czech Republic. Private consumption significantly increased because the interest rates decreased almost continuously in an attempt of the monetary authorities from these countries to re-launch the economic growth after the crisis. Public spending also increased during and after the crisis due to the public wages increase and because it financed some social protection purposes.

When analysing the effect of an increase in government spending on the economic growth, the response of household consumption is a key determinant for explaining the impact (Galí et al., 2007; Cogan, Cwik, Taylor, & Wieland, 2010). Alexiou (2009) also proved for the South Eastern Europe a positive correlation between public spending for capital purposes, private investments and trade openness and economic growth. However, it is financed through taxation or borrowing and both represent a burden for the economy in the long-run.

The aim of this paper is to analyze the main determinants of the GDP per capita growth (as a proxy for the economic growth) and of the unemployment rate, during

2004–2017 for eight selected CEE countries (Bulgaria, the Czech Republic, Hungary, Poland, Romania, Slovakia, Slovenia and Croatia). The analysed period starts with the year when the first CEE countries joined the EU and mainly covers the crisis and after-crisis period which displayed interesting changes of the impact of the macroeconomic variables on the economic growth. This panel analysis uses panel/pool least squares estimations for determining the correlation and the impact of the exogenous variables on GDP per capita growth and on the unemployment rate. This way we could emphasise any potential changes of their impact over time. The variables used as exogenous factors for determining the GDP per capita growth and the developments of the unemployment rate were both quantitative and, also, qualitative factors. The selection of these variables was based on a previous study performed by Kim (2017) for many Asian countries, according to the specific features of the CEE countries, thus some of the variables used in the study for Asia were excluded. The econometric modelling techniques also differ from Kim's study (2017). This way we have adapted the macroeconomic model presented by Kim (2017) in his study and try to build a complete macroeconomic model to estimate the economic growth and unemployment rate for the CEE region, considering the specific features of these economies.

The question of this research is whether the higher growth rates of the CEE region compared to the rates of other EU countries are based on public or private consumption rather than on public or private investments, and whether these economic growth rates are sustainable in the long-run, supporting the employment process and the economic development of these economies, or, they can't be supported in the long-run making the CEE region vulnerable to a new economic crisis in the future. This study tries to bring additional information in this area, with a special focus on the CEE region, region that displays specific features and a large gap compared to the eurozone in terms of real convergence, by building a complex economic growth model, with various quantitative or qualitative exogenous factors, growth that will also support better employment in this region.

## 2. Literature review

Many studies revealed the role of FDIs in the economic growth in the developing or less-developed countries, through technological spillovers in the host economy. Ullah, Shah, and Ullah Khan (2014) and Ghazali (2010) found similar results in Pakistan and bidirectional causality has been found between FDIs and domestic investments. A unidirectional causality is found between FDIs and economic growth and all these findings show that FDIs supports both domestic investment and economic growth in Pakistan. Khan (2007) found a negative relation between FDIs and domestic capital investments in the short run while in the long run it became positive in Pakistan. Domestic infrastructure, the financial sector and macroeconomic stability are important for FDIs to produce positive spillovers. Falki (2009) analysed the effect of FDIs on economic growth in the case of Pakistan and showed a negative and weak relationship between GDP and FDIs. She suggests that more greenfield investments along with manufacturing investment could improve the export sector and would support economic growth. The government should also improve the infrastructure and skills

of the labour force, strengthen the domestic entrepreneurship and provide a suitable macroeconomic climate for generating positive externalities of FDI. Eregha (2011) showed that FDI has a positive impact on domestic investment and economic growth in the African countries.

Akanbi (2010) observed that the domestic investment provides more employment opportunities than the FDI. Montek (2002) and Villa (2008) find that the causality runs from domestic investment to economic growth in India and Italy, respectively. Choe (2003) and Qin, Cagas, Quising, and He (2006) showed that the causality runs from economic growth to domestic investment in 80 countries worldwide and China, respectively. Furthermore, Tang, Selvanatha, and Selvanathan (2008) investigate the causal link between foreign direct investment, domestic investment and economic growth in China and show that domestic investment and economic growth are positively correlated and find a bi-directional causality between them.

Roman and Padureanu (2012) analysed the relation between domestic investments, FDI and economic growth using a Cobb–Douglas function and proved a positive relationship. Ionescu (2015) showed that the worst situation of the FDI in Romania after the crisis is accompanied by low domestic investment flows and pointed out the negative impact of some political and institutional factors on investments. Verhorn and Vasarevici (2011) proved that FDI and domestic investment as well as a prudent fiscal and monetary policy are significant determinants of the economic growth in Central and East European countries.

There are two groups of economists who proved opposite results for the relation between public expenditure and economic growth. The first group found a negative relationship (Romero & Strauch, 2003; Schaltegger & Benno, 2006) between the level of public expenditure and economic growth. These authors believe that increasing the level of public expenditure will lead to the decline of the economic growth and generate a substitution effect on private investments, because when the government increases its spending it needs to increase taxes and that has negative effects upon the economy. Szarowská (2011) proved a negative relation between total public expenses and GDP growth in the Czech Republic, the strongest correlation being for the economic affairs and public services expenses. Justesen (2008) found that a small size of government is enhancing economic growth. A study conducted by Nuță, et al. (2015) proved a negative relationship between public expenditure and GDP in Romania based on quarterly data during 1990–2011. The second group of economists established a positive relationship between public spending (for consumption and transfers purposes) and economic growth claiming that an increase in the public spending will improve the investment climate (Carlsson & Lundström, 2002; Chen & Lee, 2005; Magazzino, 2012; Mavrov, 2007). Szarowská (2012) found a positive correlation between public expenses and GDP for eight CEE countries that confirms the Keynesian theory of stimulating the economy by public spending.

Recent empirical evidence suggests that private consumption is stimulated by government spending and this evidence is against the existing macroeconomic theory, according to which a rise in public expenditure (based on taxation) should decrease consumption (Bouakez & Rebei, 2003). Recent empirical studies based on vector autoregressions (VARs) find that an increase in public spending leads to a significant

and persistent increase in private consumption and they are complementary for the economic growth (Gali, Lopez-Salido, & Valles, 2007; Okubo, 2003; Perotti, 2002). If the government finances the expenditure with loans, private consumption could increase. But in the future the government must repay the loans and/or increase taxes, therefore this positive correlation cannot be supported in the long run. It is largely considered that governments spend money less efficiently than the private sector, not to mention that an increasing government sector and bureaucracy do not support productivity and domestic investments. Anghelache, Marinescu, Avram, Burea, and Bodo (2017) found a positive link between the private and public consumption and GDP in Romania, but the relation between the private consumption and GDP is strong, while the relation between the public consumption and GDP is weak. Private consumption was stimulated by the low interest rates and a high risk of the allocation process that inhibited the saving process in Romania. Scutaru et al. (2015) proved there is a great impact of the wages and banking loans on the private consumption in Romania during 2000–2013. In a study elaborated for 11 CEE countries, Gozgor (2013) showed that only in Croatia and Slovenia the fiscal and budgetary policy impact on the private consumption in the long run, while in the other 9 CEE countries, there will be only temporary effects.

Gbosi (2005) proved that by changing the taxation and public spending, governments can influence the aggregate demand for goods and services. So, he believes taxation is positively correlated with unemployment, while public spending is negatively correlated with unemployment rate. Battaglini and Coates (2011) observe that the attempt of the governments to fight unemployment by increasing public spending is tempered by the high levels of resultant indebtedness. Schclarek (2007) examined the impact of fiscal policy on private consumption and employment using annual panel data for 40 countries from all over the world and highlighted the same results for both industrialised and developing countries. Mahdavi and Alanis (2013) examined the unemployment rate–government expenditure relation in a panel of 50 American State and Local Governments and found they are co-integrated in the long run and that there is a weekly decreasing impact on the unemployment rate. Their results suggest that public spending cannot be used as a quick fix in relation to unemployment. Onodugo, Onyebuchi Obi, Anowor, Nwonye, and Ofoegbu (2017) and Genius, Choga, Maredza, and Mavetera (2013) proved in their study that public spending for consumption purposes and taxation are positively correlated with unemployment, while public expenditure for investments purposes and private investments are negatively correlated with unemployment in an emerging market such as Nigeria or South Africa, respectively.

However, there are other studies that proved just the opposite. Feldmann (2006) used data from 19 industrialised countries and proved that a larger share of public investment than private investment in these countries is detrimental to job creation. In their studies, Brückner and Pappa (2010, 2012) proved that fiscal policy is not the best instrument to reduce unemployment using structural VAR. Using OLS estimations for Nigeria, Nwosa (2014) observed that government expenditure has positive and statistically significant impact on unemployment rate (the capital public expenditure represented a low share of the total public expenditure), while it has a negative

and weak impact on poverty rate, mainly because the public expenditure was directed especially to social purposes and in Nigeria. Abiad, Furceri, and Topalova (2015) study the impact of increased public investments for the employment process for 17 OECD countries and show that this impact is significant only in countries with a high level of public investment efficiency. Arestis, Baddeley, and Sawyer (2007) and Alexiou and Pitelis (2003) proved that there is a significant and negative relationship between investments and unemployment for the European countries, based on a panel analysis.

Yildirim and Yildirim (2017) show that consumption shocks have a significant impact on both the unemployment rate and the investments. Positive investment shocks reduced unemployment rates and a shock in consumption increases investment through the accelerator effect.

AbuAl-Foul (2010) examined the long-term and short-term relationship between the savings rate and economic growth in Tunisia and Morocco using the co-integration technique and Granger causality tests. He found evidence for a long-run relationship in Morocco, but not for Tunisia. In the short-run, he proved a bidirectional causality between those two variables in Morocco and a unidirectional causality from savings to economic growth in Tunisia.

Romm (2005) used VECM technique to study the relationship between growth and savings in South Africa and confirmed that private saving rate has a direct as well as an indirect positive effect on economic growth. The positive cause and effect relation between domestic savings and economic growth may appear in advanced economies, in which quite high domestic savings may constitute an essential source of financing domestic investment and an economic growth factor, without the necessity of using foreign investment, but this is not the case of poorer countries that borrow mainly to invest and don't rely on domestic savings, but on the foreign ones (Miształ, 2011). Using an ADLM model, Najarzadeh, Reed, and Tasan (2014) demonstrated a significant positive effect of savings on the economic growth in Iran and a bi-directional causality between those two variables.

Andrei and Huidumac (2013) used a panel data analysis in 17 countries from the Euro area and they found that there is a positive relationship between growth and savings in the long term, as there is a delay of four years. They also proved that the intensity of this relationship depends on the political stability of these countries from the eurozone.

Using the Granger causality test, Mohan (2006) proved that only in 2 out of the 19 analysed countries (with different economic development level) a higher saving rate causes economic growth, in 13 countries the relation was just the opposite, in 2 there was no causal relationship, while in the rest of 2 countries there was a bidirectional causality. Baharumshah, Thanoon, and Rashid (2002) also examined the relation between economic growth and savings in five Asian countries (Singapore, South Korea, Malaysia, Thailand, and Philippines) using the VECM model and concluded that the growth rate of savings didn't determine the economic growth in all analysed countries with the exception of Singapore.

There are few studies focused on the CEE countries during 1995–2010 that used a panel analysis and shaped the relationship between the economic growth and savings



during the last crisis period and found a negative relationship between those two variables. During the boom years, most of the income is directed to consumption, while in the crisis context, this behaviour changes in the favor of savings. The last hypothesis is partly confirmed, because there are some CEE countries with low saving rates (Romania, Bulgaria) where economic uncertainty constraints the population to 'safety savings' (Aron-Niculescu & Mihaescu, 2014). The pattern of savings also depends on the trade balance, inflation and real interest rates. Ramudo, Grela, and Garcia (2014) pointed out that an increase in the savings rate should cause an increase in the unemployment rate (due to the fall in consumption), but in the long run, through investment, savings could induce a reduction in unemployment. However, in the present context of very high indebtedness of families and firms, these benefits are not likely to take place, because increased savings are precautionary and the banking sector has cut credit to the private sector during and after the crisis. Thus, a large consumption decrease after the last crisis may have negatively impacted on the investment and on the labour market in the long run.

Based on a VEC model, Akalpler (2017) showed that there is a long run co-integration between net exports and economic growth in USA. Import levels and unemployment were observed to be negatively related to economic growth. Some studies proved that domestic investments are the key to achieving economic growth, while others stated that net exports are an engine of economic growth (Awokuse, 2003; Kalaitizi, 2013; Kim & Lin, 2009). Liu, BurrIDGE, and Sinclair (2002) investigated the causal links between trade, economic growth and inward foreign direct investment in China. They found a long-run relationship between growth, exports, imports and FDIs based on a co-integration technique and a bidirectional causality between economic growth, FDIs and exports. Only few researchers such as Crespo-Cuaresma and Wörz (2003) found that net export contributions are not significant enough to cause major changes in economic growth and that net exports are just an indicator of an economy's productive capacity.

Doğan (2012) showed that exports decrease unemployment in Turkey. Tiryaki and Özkan (2011) analyze the link between economic growth and unemployment and indicate that there is a one-way causality from economic growth to the unemployment rate. Dutt, Mitra, and Ranjan (2009) and Felbermayr, Prat, and Schmerer (2011) analyze the effect of trade policies on the unemployment rate in a heterogeneous group of countries and found that open trade policies lower unemployment.

Krugman et al. (1995) proved just the opposite, namely a positive relationship between trade and the unemployment rate. In most European countries, trade seems to have resulted in higher unemployment. Helpman and Itskhoki (2010) argue that lower trade barriers can lead to an increase in unemployment. Moore and Ranjan (2005) argue that aggregate unemployment is likely to decrease in a skilled-labour abundant country and increase in an unskilled-labour abundant country as an effect to trade liberalisation. Using data for twenty OECD countries, Kim (2011) showed that an increase in trade leads to higher total unemployment if the labour market is rigid, while it may reduce total unemployment if the labour market is more flexible. Johansson, Heady, Arnold, Brys, and Vartia (2008) or Lee and Gordon (2005) studied the impact of different types of taxes on economic growth in OECD member

countries. They conclude that economic growth is the most jeopardised by corporate tax, income tax, and consumption taxes. Based on the analysis results, Macek (2015) found that for stimulating economic growth in OECD countries, the economic-political authorities should lower corporate taxation and personal income taxes, and the loss of income tax revenues should be compensated by the growth of indirect tax revenues. On the other hand, there are also very few studies that do not demonstrate this relationship (Vasiliauskaite & Stankevicius, 2009). These few studies proved a positive relation between taxation and GDP per capita growth, but only for the highly developed countries.

Governments concerned with attracting foreign direct investment and boosting economic growth should lower corruption, keep taxes low, maintain investment in infrastructure rather than using revenue for consumption expenditures (Goodspeed, Vasquez, & Zhang, 2006). A rise of the corruption perception index means that corruption perception is improving. Mathur and Singh (2013) proved negative relationship between corruption and economic growth.

Some authors (Lambsdorff, 2007) demonstrated that causality runs mainly from corruption to GDP and there is a negative relationship between those two variables. Blackburn, Bose, and Haque (2005) and Brown and Shackman (2007) find evidence of bi-directional causality between GDP and corruption and a negative relationship. Others (Paldam, 2001) stated a uni-directional causality from GDP to corruption and a negative relation. Aidt, Dutta, and Sena (2008) found a bidirectional causality and a negative relation only in the countries with high quality institutions and no relationship in countries with low quality institutions.

Méon and Sekkat (2005) or Mendez and Sepulveda (2006) analysed the relationship between corruption and long-run economic growth in the context of the political freedom. They found no relationship between corruption and growth in the 'not-free' countries. Heckelman and Powell (2008) also found that corruption could support economic growth when economic freedom is very limited but the impact reverses when economic freedom is higher.

Borovic (2014) found that higher economic freedom increased the economic growth, but its components display various effects on the economic growth. These studies analysed countries with different levels of development. The size of the public sector limits economic freedom according to the Fraser Institute description of Economic Freedom Index. A panel analysis for 57 countries with different level of economic development for the period 2004–2014 also shows a positive impact on the economic freedom index on the GDP per capita growth rate, institutional factors playing the most important role (Hussain & Haque, 2016).

Heckelman tested the causality between economic freedom and the level of GDP and found the existence of a uni-directional causality running from the economic freedom to the GDP level. Dawson (2003) showed that causality runs from GDP growth to economic freedom. Cebula (2011) found a positive impact of the ten components of the economic freedom index on the economic growth in OECD nations, using panel least squares estimations and panel two-stage least squares estimations.

Olczyk and Kordalska (2015) test the relationship between the Global Competitiveness Index (GCI) and the economic growth rate by using a panel

Granger causality analysis for 114 countries. They confirm a strong unidirectional causality running from GDP growth to the competitiveness and find that the GCI is not successful in predicting economic growth for the majority of the 114 countries, with the exception of few large economies such as China, India, the United States and Russia and low-income countries. Thus, the causality from GCI to economic growth is mainly valid for the low-income countries.

Schwab (2015) and Lopez-Claros et al. (2006) found that a more competitive economy grows faster. Cazacu (2015) examined the linkage between economic growth and competitiveness index on a panel of 28 European countries, during 2006–2013 and found that a shock in the competitiveness index had a positive impact on GDP developments. Other researchers claim the lack of a good theoretical basis for the selection of its variables (Berger & Bristow, 2009) and methodological errors which may determine wrong results (Freudenberg, 2003) or that it is not an adequate index for predicting economic growth because it covers so many variables (Xia, Liang, Zhang, & Wu, 2012). Petrylė (2017) finds no correlation between GCI and GDP growth in EU-27 countries plus Norway, Switzerland, Iceland, the United States and the Russian Federation, but shows that high GCI values avoid sharp GDP fluctuations.

### 3. Methodology and data

We used yearly data series from the Eurostat, the Heritage Foundation, Transparency International and World Economic Forum databases (2004–2017) for Romania, Bulgaria, the Czech Republic, Poland, Hungary, Slovakia, Slovenia and Croatia and we used the following indicators: GDP (euro per capita PPP) (%); corruption perception index (%), the share of the corporate income tax of GDP (%), unemployment rate (%), the share of the domestic investments of GDP (%), economic freedom index, the share of FDI inflows of GDP (%), global competitiveness index, the share of the government spending of GDP (%), the share of the private consumption of GDP (%), the share of the net exports of GDP (%), the share of savings of GDP (%) (the description of the variables is presented in Table 1).

We selected CEE countries that are EU member-states and we analysed the period after 2004 when the first CEE countries joined EU. The analysed period covers the crisis and after crisis period to point out the main factors and their impact on GDP

**Table 1.** Description of variables.

Variable	Description
gdp_per_capita_growth	GDP euro per capita PPP (%)
corruption_perception	Corruption perception index
corporate_income_tax	Share of the corporate income tax of GDP (%)
unemployment	Unemployment rate (%)
domestic_invest	Share of the domestic investments of GDP (%)
ec_freedom_index	Economic freedom index
fdi	Share of the FDI inflows of GDP (%)
gci	Global competitiveness index
gov_spending	Share of the governmental spending of GDP (%)
private_consumption	Share of the private consumption of GDP (%)
net_export	Share of the net export of GDP (%)
savings	Share of the savings of GDP (%)

Source: authors' own selection based on Kim.H. (2017), pp. 3-4.

per capita growth and the unemployment rate in the selected CEE countries, based on a panel analysis.

We tested those series for unit root with common root Levin-Lin-Chu test and individual root PP-Fisher test and found out that all these data-series are I(1) - variables are not stationary at levels but become stationary at first-differences.

We have built two panel data regressions (using Panel LS) for estimating GDP per capita growth PPP and unemployment rate. The linear panel regressions that we built (using LS estimations with fixed effects) display the following equation:

$$Y_{it} = \alpha + \beta * X_{it} + \gamma_t + \varepsilon_{it} \quad (2)$$

where  $Y_{it}$  is the dependent variable,  $X_{it}$  is a  $K$ -dimensional vector of regressors,  $\beta_t$  is a  $K$ -dimensional vector of the regression coefficients,  $\gamma_t$  represents fixed specific effects for the units of the transversal or for the specific time period section and  $\varepsilon_{it}$  represents the innovations associated with the equation, unexplained by the independent variables  $X$ , for  $M$  transversal units and  $T$  periods.  $K$  is the number of regressors.

To allow for heterogeneity across the selected CEE countries, we used an error-component model estimated as fixed effects. We tested this model by using the redundant fixed effects test and the chosen model was validated by the results of the test. Fixed effects method is a feasible generalised least squares technique which is asymptotically more efficient than Pooled OLS when time constant attributes are present. We also presented Pooled OLS estimations for GDP per capita growth PPP and unemployment rate for comparison.

#### 4. Results and discussion

We tested these series for unit root and we found out that all these data-series become stationary at first-differences. Table 2 shows the results that we obtained by using the Levin-Lin-Chu (LLC) panel common root test and the Phillips–Perron (PP) Fisher panel unit root tests. According to the reported results, the analysed variables

**Table 2.** Results of panel unit root tests.

	First-differences					
	gdp_per_ capita_ growth	corruption_ perception	corporate income_ tax	unemployment	domestic_ invest	ec_freedom_ index
Levin-Lin-Chu t*	-8.34022*	-2.60571*	-5.11991*	-3.31055*	-5.21240*	-3.97414*
PP- Fisher-chi-sqaure	101.303*	77.3884*	40.6722*	37.5115	62.1107*	86.6641*
	First-differences					
	fdi	gci	gov_ spending	private_ consumption	net_ export	savings
Levin-Lin-Chu t*	-8.34022*	-2.60571*	-5.11991*	-3.31055*	-5.21240*	-3.97414*
PP- Fisher-chi-sqaure	101.303*	77.3884*	40.6722*	37.5115	62.1107*	86.6641*

Note: values denote the statistical significance at 5% level.

\*denotes the statistical significance at 1% level.

Source: E-views estimations.

**Table 3.** Panel Least Squares estimations for GDP per capita growth.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.262367	0.297145	0.882958	0.0614
DCORPORATE_TAX	-2.283119	0.925647	-2.466511	0.0170
DDOMESTIC_INVEST(-1)	0.321877	0.132393	2.431224	0.0186
DFDI(-3)	0.089728	0.028312	3.169258	0.0026
DGCI(-4)	8.482333	2.258610	3.755555	0.0004
DECON_FREEDOM(-3)	0.526804	0.186438	2.825622	0.0067
DPRIVATE_CONSUMPTION	0.396653	0.138380	2.866403	0.0060
DGOV_SPENDING	-2.128092	0.371377	-5.730279	0.0000
DNET_EXPORT(-4)	0.210900	0.107403	1.963632	0.0012
DGDP_PER_CAPITA(-4)	0.200356	0.063164	3.171977	0.0026
DSAVINGS(-1)	0.268456	0.147912	1.814971	0.0160
DCORRUPTION(-2)	2.118094	0.702669	3.014356	0.0040
DUNEMPLOYMENT(-1)	-0.361127	0.190493	-1.895746	0.0537

$R^2 = 0.867930$ ; F-statistic = 17.63997; Durbin-Watson = 2.07; AIC = 1.208333.

Source: E-views estimations.

**Table 4.** Pool Least Squares estimations for GDP per capita growth.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.166856	0.082357	2.026008	0.0430
DCORPORATE_TAX(-2)	-4.629722	0.192815	-24.01127	0.0000
DCORRUPTION(-2)	2.757580	0.192789	14.30360	0.0000
DDOMESTIC_INVEST	0.657106	0.036281	18.11181	0.0000
DECON_FREEDOM(-2)	0.413609	0.047649	8.680329	0.0000
DFDI(-3)	0.087224	0.008908	9.791238	0.0000
DGCI	2.222047	0.967628	2.296385	0.0219
DPRIVATE_CONSUMPTION(-2)	-0.454220	0.044312	-10.25055	0.0000
DGDP_PER_CAPITA(-1)	0.291231	0.021461	13.56994	0.0000
DNET_EXPORT(-1)	0.191194	0.024806	7.707459	0.0000
DGOV_SPENDING(-2)	-1.785273	0.106408	-16.77769	0.0000
DSAVINGS	0.280236	0.043486	6.444280	0.0000
DUNEMPLOYMENT	-0.955713	0.067929	-14.06928	0.0000
Fixed Effects (Cross)				
DCORPORATE_TAX-C	6.25E-16			
DCORRUPTION-C	6.25E-16			
DDOMESTIC_INVEST-C	6.25E-16			
DECON_FREEDOM-C	6.25E-16			
DFDI-C	6.25E-16			
DGCI-C	6.25E-16			
DGDP_PER_CAPITA-C	6.25E-16			
DGOV_SPENDING-C	6.25E-16			
DPRIVATE_CONSUMPTION-C	6.25E-16			
DUNEMPLOYMENT-C	6.25E-16			
DURBANISATION-C	6.25E-16			
DNET_EXPORT-C	6.25E-16			
DSAVINGS-C	6.25E-16			

$R^2 = 0.757842$ ; F-statistic = 132.3536; Durbin-Watson = 1.815; AIC = 1.305040.

Source: E-views estimations.

are not stationary at levels but become stationary at first-differences at 1% or 5% level of significance.

The results obtained by a Panel Least Square analysis and by a Pool LS estimation are quite similar and allow us to stress the effects of the exogenous factors on the GDP per capita growth (Tables 3 and 4).

From the results of the panel estimations we can emphasise that in the selected CEE countries the most important factors impacting on GDP per capita growth are the government spending and corporate income tax (quantitative factors with

negative impact on the GDP per capita growth) and global competitiveness index and the corruption perception index (qualitative factors with a positive impact on the GDP per capita growth). The most important factor (government spending) negatively impacts on the GDP per capita growth. The government spending in the CEE region was mainly directed to social protection purposes (especially during the crisis in Bulgaria, Romania and Hungary) and to increase wages in the public sector, so these are non-productive public expenses that didn't support GDP per capita growth. In some selected CEE countries (Croatia, Hungary, Slovenia), the public debt is excessive because the non-productive government spending was mainly financed through an excessive borrowing process. That is why, the long-run and the short-run impact of this factor on the unemployment rate is significant and positive. In these selected CEE countries, government spending didn't support public investments, so, the effect on the GDP per capita was strongly negative because these large public sectors didn't create jobs. These findings are in line with previous studies that found a negative correlation between public spending and GDP growth (Romero & Strauch, 2003; Schaltegger & Benno, 2006; Nuță, et al., 2015).

GCI and the corporate income tax are the most important factors both in the short and in the long run for the GDP per capita growth, followed by the corruption perception index and government spending. The government spending strongly and negatively impacts on the GDP per capita growth in the short run, but its negative impact on the GDP per capita growth decreases over time. The unemployment rate (with a negative impact on the GDP per capita growth), domestic investments, the private consumption and the savings rate (with a positive impact on the GDP per capita growth) also represent important factors for the GDP per capita growth. Private consumption changes its impact on the GDP per capita. In the short run its impact is positive, whereas in the long run this impact becomes negative. The impact of FDI's on the GDP per capita growth is weak and positive in the CEE region.

Corruption perception index improved in many selected CEE countries (Bulgaria, Romania, Croatia and even Slovakia) and that positively impacts on the GDP per capita growth. Global competitiveness index positively impacts on the GDP per capita growth. This index includes macroeconomic environment factors, education, infrastructure and market efficiency factors (such as corruption control, bureaucracy, infrastructure quality, governance effectiveness, political stability, rule of law factors, property rights). The next important factors impacting on the GDP per capita growth rate are unemployment, private consumption and savings rate. Unemployment rate is negatively correlated with the GDP per capita growth, as we expected. In the CEE region, the high rates of economic growth were achieved by the significant increase in private consumption. This increase in private consumption was supported by lax credit conditions and by the rise of total wages (although labour productivity didn't support such wage increase especially in the public sector). Thus, the impact of private consumption on the GDP per capita growth was similar to the impact of government spending and it was negative in the long run, while the impact on unemployment rate was positive both in the short and in the long run. Savings should support investments if they are efficiently used, but in the CEE region, they were not sufficient for investments or efficiently used for the investment purposes, because of a high increase in consumption based on banking borrowings at low interest rates. The

correlation between private consumption-savings-domestic investments-net exports-government spending is presented in Appendix (a VAR analysis – Table 1) and we can see that between savings and private consumption there is a negative strong correlation, while the correlation between savings and domestic investments and net exports is positive but much weaker.

Corporate income tax displays a moderate negative impact on the GDP per capita growth, despite the fact that there are few selected CEE countries where this tax is the lowest in the entire EU (such as in Romania or Bulgaria). Still, the fiscal factors don't seem to be the most important factors for investments and for the increase of GDP per capita. In the above-mentioned countries there are some additional duties affecting investments and there are some other important factors that negatively impact on private investments (domestic or foreign) and, thus, on GDP per capita growth, such as corruption, lack of infrastructure, political instability or frequent fiscal changes. Economic freedom index and FDIs are positively and weakly impacting on the GDP per capita growth, while net exports impact very weakly and positively on GDP per capita growth. This means that in some of the selected CEE countries, the imports overlap exports the entire analysed period during 2004–2017 or most of that period. FDIs' impact decreased a lot once the financial crisis erupted in 2008 in Europe, because the CEE region faced important FDI outflows. This trend reversed starting with 2014, but the FDI inflows never reached important numbers as they did during 2004–2007 (Tables 3 and 4).

The most important factors in the long run impacting on the unemployment rate in the CEE region are GCI and government spending (Tables 5 and 6). Global competitiveness index includes many qualitative aspects of the economies (political stability, governance effectiveness, rule of law, infrastructure quality). Once these aspects improve, unemployment decreases. These aspects were analysed by Pilc (2017) for 47 post-socialist and OECD countries. Our results are confirmed by his findings. He found out that cultural, institutional and political factors have a stronger influence on labour market institutions. The countries which experienced weak labour market performance in the period 1995–2004 did not make their institutional framework more pro-employment in the

**Table 5.** Panel Least Squares estimations for unemployment rate.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.319929	0.070401	-4.544379	0.0000
DGDP_PER_CAPITA(-1)	-0.167477	0.017525	-9.556563	0.0000
DGCI	-2.653283	0.821648	-3.229220	0.0024
DDOMESTIC_INVEST	-0.217747	0.038993	-5.584329	0.0000
DPRIVATE_CONSUMPTION(-2)	0.093959	0.028616	3.283509	0.0021
DSAVINGS(-5)	0.066046	0.028736	2.298326	0.0266
DNET_EXPORT(-2)	0.103305	0.018514	5.579725	0.0000
DCORPORATE_TAX(-2)	0.613845	0.204555	3.000878	0.0045
DCORRUPTION(-2)	-1.180216	0.149002	-7.920826	0.0000
DFDI	-0.008542	0.004213	-2.027494	0.0490
DUNEMPLOYMENT(-1)	0.348893	0.053357	6.538885	0.0000
DUNEMPLOYMENT(-4)	0.160517	0.042165	3.806889	0.0005
DGDP_PER_CAPITA	-0.154016	0.026407	-5.832485	0.0000
DGOV_SPENDING(-5)	0.173828	0.085381	2.035917	0.0481
DECON_FREEDOM	-0.064864	0.042106	-1.540489	0.0309

$R^2 = 0.948010$ ; F-statistic = 36.46912; Durbin-Watson = 2.04; AIC = 1.096096.

Source: E-views estimations.

**Table 6.** Pool Least Squares estimations for unemployment rate.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.274782	0.025485	-10.78231	0.0000
DCORPORATE_TAX	0.851385	0.081971	10.38638	0.0000
DCORRUPTION	-0.553407	0.062292	-8.884144	0.0000
DDOMESTIC_INVEST	-0.185602	0.014471	-12.82577	0.0000
DECON_FREEDOM(-3)	-0.049041	0.015911	-3.082322	0.0021
DFDI	-0.015620	0.001904	-8.203896	0.0000
DGCI	-0.810661	0.324273	-2.499931	0.0126
DGDP_PER_CAPITA(-1)	-0.048962	0.006115	-8.006445	0.0000
DGOV_SPENDING	0.327770	0.036062	9.089183	0.0000
DPRIVATE_CONSUMPTION	0.081712	0.012169	6.714915	0.0000
DNET_EXPORT	0.059092	0.006567	8.998034	0.0000
DSAVINGS(-1)	0.059844	0.013379	4.472864	0.0000
DUNEMPLOYMENT(-1)	0.608450	0.016750	36.32635	0.0000
Fixed Effects (Cross)				
DCORPORATE_TAX-C	-1.92E-16			
DCORRUPTION-C	-1.92E-16			
DDOMESTIC_INVEST-C	-1.92E-16			
DECON_FREEDOM-C	-1.92E-16			
DFDI-C	-1.92E-16			
DGCI-C	-1.92E-16			
DGDP_PER_CAPITA-C	-1.92E-16			
DGOV_SPENDING-C	-1.92E-16			
DPRIVATE_CONSUMPTION-C	-1.92E-16			
DUNEMPLOYMENT-C	-1.92E-16			
DNET_EXPORT-C	-1.92E-16			
DSAVINGS-C	-1.92E-16			

$R^2 = 0.773069$ ; F-statistic = 138.6347; Durbin-Watson = 2.09; AIC = 1.016413.

Source: *E-views estimations.*

following years and, in consequence, also recorded low values of the employment rate in the period 2010–2015. The economic factors occurred to be on average an insufficient trigger for labour market reforms in the group of the analysed countries. A research conducted by Cyrek (2017) also indicates that Polish regions, which were the most efficient in terms of social integration, were simultaneously those with the best economic results in terms of GDP per capita. The highest social efficiency level was characteristic for the highest employment in the service sector.

Government spending is positively impacting on unemployment rate, because as we stated above, most of the public spending in the CEE region was directed to social protection purposes or to increase wages in the public sector, not to public investments that would have supported the employment process and would have created jobs in the economies. These findings are in line with those of Feldmann (2006), Bruckner and Pappa (2010, 2012), Genius et al. (2013), Nwosa (2014), and Abiad et al. (2015).

Corruption perception improved on average in the CEE region, so this supported the investment process and the unemployment decrease in this region (Tables 5 and 6). The corporate income tax is also positively impacting on unemployment rate. Raising the tax burden will determine an increase in the total costs of the firms so their willingness to search for additional labour force will decrease and the unemployment rate will increase. An interesting result is represented by the impact of the private consumption on the GDP per capita growth and on the unemployment rate. In the CEE region, credit conditions were very lax before the crisis and that caused a high non-performing loans ratio after 2008. Private consumption was based on credit



and this high indebtedness of the firms and of the population negatively affected GDP growth and caused an increase of the unemployment rate in this region for an important period of time after the crisis erupted in 2008. The private consumption relaunched after 2015 in the CEE region and started to support the economic growth (it significantly supported the GDP growth in some CEE selected countries such as Romania which recorded the highest economic growth rate in the entire EU in the last two analysed years 2016–2017). The rebound of the private consumption is also based on credit and this could endanger the economic stability in the CEE region and could determine a new crisis in the future. These results are in line with the findings of some previous studies carried out by Scutaru et al. (2014) and Gozgor (2013) for CEE countries.

The factors weakly and negatively impacting on the unemployment rate are domestic investments, FDI and savings. Investments rebounded after 2014 in the CEE region, but they never reached an increase rate similar to their growth rate achieved before 2008. We can also stress that in the analysed period, the impact of domestic investments on the GDP per capita and on the unemployment rate is stronger than the FDI's impact. FDI decreased a lot after the crisis erupted in the CEE region. Moreover, the wage increase and a large labour force emigration process weren't very attractive factors for the foreign investors to locate their businesses in the CEE region. This is valid especially for the CEE countries displaying the lowest corporate income tax such as Romania and Bulgaria, while in Hungary the FDI strongly rebounded in the last analysed years. The savings rate was positively correlated with the GDP per capita growth, but the savings didn't support job creation in the CEE region, thus we can state that savings reached low levels because of low interest rates and a significant increase of inflation in the CEE countries (especially in Romania, Bulgaria, Croatia) and weren't efficiently used for investment purposes. These findings are in line with those of Ramudo et al. (2014). Savings are strongly and negatively correlated with private consumption (which mainly fueled imports, not the domestic production as we can see from Table 1 in Appendix) and weakly and positively correlated with domestic investments, because private consumption didn't significantly support domestic investments. Thus, although positively impacting on the GDP per capita growth, they can't create positive effects for the employment process. Also, the impact of net exports on the GDP per capita growth is marginal and they couldn't support employment. This may be explained by mainly low-skilled labour force (determined by a significant emigration process of 'brains' from the CEE countries) and the increase of wages in the CEE region on average. It is also correlated with rigid labour markets in the CEE region on average. Moreover, most of the exports in the CEE countries rely on imports. Imports were boosted by the increase of the private consumption based on credit. Private consumption didn't stimulate mostly the domestic production, so its impact on the employment rate in the long run is negative. These findings regarding the impact of the net exports on the unemployment rate are in line with the previous findings of Krugman et al. (1995), Helpman and Itskhoki (2010), and Moore and Ranjan (2005).

The significant increase of the private consumption in the CEE region didn't generate a similar increase of the domestic investments in the long run and the FDI

**Table 7.** Main results of the analysis.

Variables	Impact on GDP per capita growth	Impact on the unemployment growth rate
corruption_perception	Strong and positive	Strong and negative
corporate_income_tax	Strong and negative	Strong and positive
domestic_invest	Average and positive	Average and negative
ec_freedom_index	Average and positive	Weak and negative
fdi	Weak and positive	Weak and negative
gci	Strong and positive	Strong and negative
gov_spending	Strong and negative	Average and positive
private_consumption	Average and positive in the short-run Average and negative in the long-run	Weak and positive
net_export	Weak and positive	Weak and positive
savings	Weak and positive	Weak and positive

Source: Authors' concluding results based on the E-views estimations.

inflows decreased dramatically after the crisis erupted in 2008 (see Appendix, Table 1). The contribution of the domestic investments to the GDP per capita growth and to the unemployment reduction was rather modest. Reversing the increasing trend of the private consumption in the CEE region (when credit conditions worsened once the crisis erupted in 2008) caused serious negative problems for these analysed economies and negatively impacted on the GDP per capita growth and employment. The share of the non-performing loans ratio significantly increased in many CEE countries (Croatia, Romania, Bulgaria).

The most important factors impacting on the unemployment rate are GCI, the corporate income tax and the corruption perception index, the same as for determining the GDP per capita growth. The government spending is also important for the unemployment rate developments in the CEE region. Both in the short and in the long run, the impact of the government spending on the unemployment rate is positive. This means that in the CEE region, on average, the state didn't support the job creation process through its budgetary policy and it mainly acted through the fiscal policy to stimulate investments or by improving the macroeconomic environment (e.g., decreasing inflation rate in many CEE countries). The savings proved to be insufficient and inefficiently used and didn't support the employment process. The impact of the economic freedom index, FDIs, private consumption or net exports on the unemployment rate is positive, but weak both in the short-run and in the long run (Tables 5 and 6).

To conclude the results of our analysis are presented, in summary, in Table 7 below:

## 5. Conclusions

Concluding our empiric analysis, there was economic growth based on consumption in the CEE region as a whole during 2004–2017. The significant increase of public spending (for wages and social protection) boosted private consumption, but this couldn't support the economic growth in the long run, because the private consumption mainly boosted imports, not domestic investments. So, the economic growth in the CEE region is not a sustainable one in the long run, because this increase of the consumption (public and private) generated a high indebtedness burden for these

economies and couldn't generate significant employment effects. FDIs are weakly correlated with the economic growth currently, while the political and institutional factors became very important for achieving GDP per capita growth or for the employment process.

The most important factors impacting both on the GDP per capita growth and on the unemployment rate are GCI (including political and economic institutional factors), the corruption perception index, the corporate income tax and the government spending. Corporate income tax displays a much significant negative impact in the long run than in the short run on the GDP per capita growth and a significant short-run positive impact on the unemployment rate, thus it must be kept at low levels, therefore the issue of financing a higher public or private consumption remains. The government spending focused mainly on social protection purposes and on wages increase in the public sector, disregarding the labour force productivity, didn't support the GDP per capita growth in the CEE region or the employment process, because public expenses didn't stimulate the domestic investments. Thus, inflation resurged in Romania, Croatia or Bulgaria at some significant levels compared to EU. In the economies with a large state sector, the efficiency of using the government spending and savings for the domestic investments is low. Moreover, the savings rate in the CEE region is much lower than in the developed economies and the saving process wasn't stimulated in the context of a significant decrease of the interest rates after the crisis. Thus, the consumption and the investments are based on banking borrowing and this represents a burden for these economies as we could see from the developments of the non-performing loans during the crisis period. The qualitative aspects included in the GCI are the most important determinants for the GDP per capita growth and for the unemployment rate developments both in the short and in the long run. The authorities of the selected CEE countries should focus on improving the labour market efficiency through training and specialisation programs for the labour force in order to reduce the unemployment rate (which is still high in Slovakia and Croatia), should support the education process in order to improve the skills of the labour force and its productivity, should support the public investments, especially for the infrastructure and should provide a stable macroeconomic environment and social-political stability to ensure a stable and sustainable GDP per capita growth in the future. They should direct more of their public spending to some productive public spending (education, economic affairs) and should stimulate the domestic investors to produce and to expand on the domestic or foreign markets, so that the consumption should rely less on imports of goods and services. Higher value-added activities could be supported by the government policy which will focus mainly on education, research and development and cooperation with the business sector, as Kolveková and Palaščáková (2017) proved with their analysis for the Slovak economy.

The high economic growth rates achieved by this region lately, mainly based on the increase of the private consumption can't be supported in the long run, because the impact of the private consumption reverses in the long run and becomes negative. The significant increase of the public expenses during and after the crisis determined higher public deficits and public debts in Poland, Romania, Croatia, Hungary and

Slovenia. The private consumption is also based in the CEE region, on average, on banking borrowing and this could endanger the economic stability in this region. Improving the global competitiveness of these CEE economies will support domestic investments and thus, both the GDP per capita growth and the employment process. The CEE countries should focus on improving these aspects and the relevance of the domestic investments for the GDP per capita growth will increase. High inflows of FDIs are not expected in the CEE region in the future as a result of the general wages increase in the CEE region and, in some countries, as a result of a lack of adequate infrastructure, macroeconomic or political stability (Romania, for example). So, the authorities should aim at public investments and support domestic investments as well.

## References

- Abiad, A., Furceri, D., & Topalova, P. (2015). The macroeconomic effects of public investment: Evidence from advanced economies. IMF Working Paper, WP/15/95, May 2015. doi:10.5089/9781475578874.001
- AbuAl-Foul, B. (2010). The causal relation between savings and economic growth: Some evidence from MENA Countries. *Topics in Middle Eastern and African Economies*, Vol. 12, 1–12.
- Agosin, M. R., & Machado, R. (2005). Foreign investment in developing countries: Does it crowd in domestic investment. *Oxford Development Studies*, 33(2), 149–162. doi:10.1080/13600810500137749
- Aidt, T., Dutta, J., & Sena, V. (2008). Governance regimes, corruption and growth: Theory and evidence. *Journal of Comparative Economics*, 36(2), 195–220. doi:10.1016/j.jce.2007.11.004
- Akalpler, E. (2017). The role of net export on economic growth in USA. *Journal of Applied Economic Sciences*, XII, 3(49), 772–781.
- Akanbi, O. A. (2010). *Role of governance in explaining domestic investment in Nigeria*. Working Paper Number 168. Department of Economics. South Africa: University of Pretoria.
- Alexiou, C. (2009). Government spending and economic growth: Econometric evidence from the South Eastern Europe (SEE). *Journal of Economic and Social Research*, 11(1), 1–16.
- Alexiou, C., & Pitelis, C. (2003). On capital shortages and European unemployment: A panel data investigation. *Journal of Post Keynesian Economics*, 25(4), 613–631. doi:10.2753/PKE0160-3477320307
- Andrei, E. A., & Huidumac, C. E. (2013). Saving and economic growth: An empirical analysis for euro area countries. *Theoretical and Applied Economics*, 20(7), 43–58.
- Anghelache, C., Marinescu, A. I., Avram, D., Burea, D., & Bodo, G. (2017). Model analysis of the correlation between GDP and final consumption components. *Romanian Statistical Review*, Supplement no. (2), 84–95.
- Arestis, P., Baddeley, M. C., & Sawyer, M. (2007). The relationship between capital stock, unemployment and wages in nine EMU countries. *Bulletin of Economic Research*, 59(2), 125–148. doi:10.1111/j.0307-3378.2007.00254.x
- Aron-Niculescu, I., & Mihaescu, C. (2014). Modelling the impact of economic, demographic and social determinants on household saving rate in the former socialist countries (Central and Eastern Europe). *Procedia Economics and Finance*, 10, 104–113. doi:10.1016/S2212-5671(14)00283-4
- Awokuse, T. O. (2003). Is the export led growth hypothesis valid for Canada? *Canadian Journal of Economics/Revue Canadienne d'Economique*, 36(1), 126–136. doi:10.1111/1540-5982.00006
- Baharumshah, A. Z., Thanoon, M. A., & Rashid, S. (2002). Savings dynamic in Asian Countries. *Journal of Asian Economics*, 204(13), 1–19. doi:10.1016/S1049-0078(02)00187-2

- Battaglini, M., & Coates, S. (2011). Fiscal policy and unemployment. National Bureau of Economics Research (NBER) Working Paper 17562.
- Berger, T., & Bristow, G. (2009). Competitiveness and the benchmarking of nations – A critical reflection. *International Advances in Economic Research*, 15(4), 378–392. doi:10.1007/s11294-009-9231-x
- Blackburn, K., Bose, N., & Haque, M. E. (2005). The incidence and persistence of corruption in economic development. *Journal of Economic Dynamics & Control*, 30, 2447–2467. doi:10.1016/j.jedc.2005.07.007
- Borovic, Z. (2014). Does economic freedom impact economic growth: Decomposing the effects for Bosnia and Herzegovina. *Acta Economica*, XII(21), 9–20.
- Bouakez, H., & Rebei, N. (2003). Why does private consumption rise after a Government spending shock? Available online at <http://fmwww.bc.edu/repec/sce2004/up.27817.1075497619.pdf>.
- Brown, S. F., & Shackman, J. (2007). Corruption and related socioeconomic factors: A time series study. *Kyklos*, 60(3), 319–347. doi:10.1111/j.1467-6435.2007.00374.x
- Brückner, M., & Pappa, E. (2010). Fiscal expansions affect unemployment, but they may increase it. CEPR Discussion Papers, 7766.
- Brückner, M., & Pappa, E. (2012). Fiscal expansions, unemployment, and labor force participation. *International Economic Review*, 54(4), 1205–1228. doi:10.1111/j.1468-2354.2012.00717.x
- Carlsson, F., & Lundström, S. (2002). Economic freedom and growth: Decomposing the effects. *Public Choice*, 112(3/4), 335–344. doi:10.1023/A:1019968525415
- Cazacu, A. M. (2015). Global competitiveness index and economic growth. *Theoretical and Applied Economics*, 369–373. Supplement I, International Finance and Banking Conference FIBA 2015 XIIIth Edition,
- Cebula, R. J. (2011). Economic growth, ten forms of economic freedom, and political stability: An empirical study using panel data, 2003–2007. *Journal of Private Enterprise*, 26(2), 61–81.
- Chen, S. T., & Lee, C. C. (2005). Government size an economic growth in Taiwan: A threshold regression approach. *Journal of Policy Modeling*, 27(9), 1051. doi:10.1016/j.jpolmod.2005.06.006
- Choe, J. I. (2003). Do foreign direct investment and gross domestic investment promote economic growth?. *Review of Development Economics*, 7(1), 44–57. doi:10.1111/1467-9361.00174
- Cogan, J. F., Cwik, T., Taylor, J. B., & Wieland, V. (2010). New Keynesian versus old Keynesian Government spending multipliers. *Journal of Economic Dynamics and Control*, 34(3), 281–295. doi:10.1016/j.jedc.2010.01.010
- Crespo-Cuaresma, J., & Wörz, J. (2003). *On Export Composition and Growth*. University of Vienna, Department of Economics, Vienna, Austria and Vienna Institute for International Economic Studies (WIIW), Vienna, Austria. Available at : [http://www.wiwi.ac.at/pdf/crespo\\_woerz\\_etsg\\_2003.pdf](http://www.wiwi.ac.at/pdf/crespo_woerz_etsg_2003.pdf).
- Cyrek, M. (2017). Social efficiency of employment in three sectors — a comparison of polish regions. *Equilibrium*, 12(3), 417–432. doi:10.24136/eq.v12i3.22
- Dawson, J. W. (2003). Causality in the freedom-growth relationship. *European Journal of Political Economy*, 19(3), 479–495. doi:10.1016/S0176-2680(03)00009-0
- Diacon, P. E., & Maha, L. G. (2015). The relationship between income, consumption and GDP: A time series, cross-country analysis. *Procedia Economics and Finance*, 23, 1535–1543. doi:10.1016/S2212-5671(15)00374-3
- Disoska, E. M. (2016). Re-shaping the model of economic growth of the CEE Countries. *Baltic Journal of European Studies*, 6, 2(21), 137–159. doi:10.1515/bjes-2016-0016
- Doğan, T. T. (2012). Macroeconomic variables and unemployment: The case of Turkey. *International Journal of Economics, and Financial Issues*, 2(1), 71–78.
- Dutt, P., Mitra, D., & Ranjan, P. (2009). International trade and unemployment: Theory and cross-national evidence. *Journal of International Economics*, 78 (1), 32–44. doi:10.1016/j.jinteco.2009.02.005

- Eregha, P. (2011). The dynamic linkages between foreign direct investment and domestic investment in ECOWAS countries: A panel cointegration analysis. In *Proceedings of the Conference of the Centre for the Study of African Economics*. Oxford, UK: Oxford University.
- Falki, N. (2009). Impact of foreign direct investment on economic growth in Pakistan. *International Review of Business Research Papers*, 5(5), 110–120.
- Felbermayr, G., Prat, J., & Schmerer, H. (2011). Globalisation and labour market outcomes: Wage bargaining, search frictions, and firm heterogeneity. *Journal of Economic Theory*, 146(1), 39–73. doi:10.1016/j.jet.2010.07.004
- Feldmann, H. (2006). Government size and unemployment: Evidence from industrial countries. *Public Choice*, 127(3–4), 443–444. doi:10.1007/s11127-005-9003-y
- Freudenberg, M. (2003). Composite indicators of country performance: A critical assessment. OECD Science, Technology and Industry, Working Papers, 2003/16.
- Gali, J., Lopez-Salido, J. D., & Valles, J. (2007). Understanding the effects of government spending on consumption. *Journal of the European Economic Association*, 5(1), 227–270.
- Gbosi, A. N. (2005). The dynamics of managing chronic unemployment in Nigeria's depressed economy. Inaugural lecture (Series No. 42). Presented at University of Port Harcourt, 3 June.
- Genius, M., Choga, I., Maredza, A., & Mavetera, N. (2013). Fiscal policy and unemployment in South Africa: 1980–2010. *Mediterranean Journal of Social Sciences*, 4(6), 579–587. doi:10.5901/mjss.2013.v4n6p579
- Ghazali, A. (2010). Analyzing the relationship between foreign direct investment domestic investment and economic growth for Pakistan. *International Research Journal of Finance and Economics*, 47, 127–135.
- Goodspeed, T., Vasquez, J. M., & Zhang, L. (2006). Are other government policies more important than taxation in attracting FDI?. Andrew Young School of Policy Studies, Research Paper Studies, Working Paper 28.
- Gozgor, G. (2013). Stochastic properties of the consumption-income ratios in central and eastern European countries. *Zbornik Radova Ekonomskog Fakulteta U Rijeci*, 31(2), 193–207.
- Heckelman, J. C., & Powell, B. (2008). Corruption and the Institutional environment for growth. Working papers 6, Suffolk University.
- Helpman, E., & Itskhoki, O. (2010). Labour market rigidities, trade and unemployment. *Review of Economic Studies*, 77(3), 1100–1137. doi:10.1111/j.1467-937X.2010.00600.x
- Heritage Foundation. (2017). <https://www.heritage.org/index/> [accessed on 12<sup>th</sup> June 2018].
- Hlavacek, P., & Domanska, B. B. (2016). Impact of foreign direct investment on economic growth in Central and Eastern European Countries. *Inzinerine Ekonomika-Engineering Economics*, 27(3), 294–303.
- Hussain, M. E., & Haque, M. (2016). Impact of economic freedom on the growth rate: A panel data analysis. *Economies*, 4(4), 5–15. doi:10.3390/economies4020005
- Ionescu, R. V. (2015). Foreign direct investment vs domestic investment across the European Union. Case study: Romania. *Euro Economica*, 2(34), 129–138.
- Johansson, Å., Heady, C., Arnold, J., Brys, B., & Vartia, L. (2008). Tax and economic growth, OECD Working Paper 620, Organization for Economic Cooperation and Development. Economics department, available online at <https://www.oecd-ilibrary.org/docserver/241216205486.pdf?expires=1535011635&id=id&accname=guest&checksum=4725B459C69E6A3A16935D0E732C6DA6> [accessed at 21<sup>st</sup> July 2018].
- Justesen, M. K. (2008). The effect of economic freedom on growth revisited: New evidence on causality from a panel of countries 1970–1999. *European Journal of Political Economy*, 24(3), 642–660. doi:10.1016/j.ejpoleco.2008.06.003
- Kalaitizi, A. (2013). Exports and economic growth in the United Arab Emirates. Submitted to: RIBM Doctoral Symposium. Manchester Metropolitan University Business School.
- Khan, M. A. (2007). Foreign direct investment and economic growth: The role of domestic financial sector. Working Paper 18, Pakistan Institute of Development Economics, Islamabad, Pakistan.

- Kim, D. H., & Lin, S. C. (2009). Trade and growth at different stages of economic development. *Journal of Development Studies*, 45(8), 1211–1224. doi:10.1080/0022038902862937
- Kim, H. (2017). The effect of consumption on economic growth in Asia. *Journal of Global Economics*, 05(03), 1–8. doi:10.4172/2375-4389.1000259
- Kim, J. (2011). The effects of trade on unemployment: Evidence from 20 OECD countries, Stockholm University, Department of Economics, Working Paper no.19/2011.
- Kolveková, G., & Palašáková, D. (2017). Analysis of Bratislava and Žilina as urban areas in Western Slovakia in the context of associations among employment and industries. *Oeconomia Copernicana*, 8(4), 537–552. doi:10.24136/oc.v8i4.33
- Krugman, P., Cooper, R. N., & Srinivasan, T. N. (1995). Growing world trade: Causes and consequences. *Brookings Papers on Economic Activity*, 1995(1), 327–377. 25th Anniversary Issue, doi:10.2307/2534577
- Labaye, E., Sjátíl, P. E., Wojtek, B., Novak, J., Mischke, J., Fruk, M., & Ionut, O. (2013). A new dawn: Reigniting growth in Central and Eastern Europe, McKinsey Global Institute and McKinsey in Central and Eastern Europe, available online at [https://www.mckinsey.com/~media/McKinsey/Featured%20Insights/Europe/A%20new%20dawn%20Reigniting%20growth%20in%20Central%20and%20Eastern%20Europe/MGI\\_CEE\\_A\\_new\\_dawn\\_Full\\_report\\_Dec\\_2013.ashx](https://www.mckinsey.com/~media/McKinsey/Featured%20Insights/Europe/A%20new%20dawn%20Reigniting%20growth%20in%20Central%20and%20Eastern%20Europe/MGI_CEE_A_new_dawn_Full_report_Dec_2013.ashx) [accessed at 3rd October 2018]
- Lambsdorff, J. G. (2007). *The institutional economics of corruption and reform*. Cambridge, UK: Cambridge University Press.
- Lee, Y., & Gordon, R. H. (2005). Tax Structure and Economic Growth. *Journal of Public Economics*, 89(5–6), 1027–1043. doi:10.1016/j.jpubeco.2004.07.002
- Liu, X., Burridge, P., & Sinclair, P. J. N. (2002). Relationships between economic growth, foreign direct investment and trade: Evidence from China. *Applied Economics*, 34(11), 1433–1440. doi:10.1080/00036840110100835
- Lopez-Claros, A., Altinger, L., Blanke, J., Drzeniek, M., & Mia, I. (2006). The Global Competitiveness Index: Identifying the Key Elements of Sustainable Growth. The Global Competitiveness Report 2006–2007, World Economic Forum, Palgrave Macmillan.
- Macek, R. (2015). The impact of taxation on economic growth: Case study of OECD Countries. *Review of Economic Perspectives*, 14(4), 309–328. doi:10.1515/revecp-2015-0002
- Magazzino, C. (2012). Wagner versus Keynes: Public spending and national income in Italy. *Journal of Policy Modeling*, 34(6), 890–905. doi:10.1016/j.jpolmod.2012.05.012
- Mahdavi, S., & Alanis, E. (2013). Public expenditures and the unemployment rate in the American states: Panel evidence. *Applied Economics*, 45(20), 2926–2937. doi:10.1080/00036846.2012.690849
- Mathur, A., & Singh, K. (2013). Foreign direct investment, corruption and democracy. *Applied Economics*, 45(8), 991–1002. doi:10.1080/00036846.2011.613786
- Mavrov, H. (2007). The Size of government expenditure and the rate of economic growth in Bulgaria. *Economic Alternatives*, 1, 52–63.
- Mendez, F., & Sepulveda, F. (2006). Corruption, growth and political regimes: Cross country evidence. *European Journal of Political Economy*, 22, 82–98.
- Méon, P. G., & Sekkat, K. (2005). Does corruption grease or sand the wheels of growth?. *Public Choice*, 122(1–2), 69–97. doi:10.1007/s11127-005-3988-0
- Mishra, P. K. (2011). Dynamics of the relationship between real consumption expenditure and economic growth in India. *Indian Journal of Economics & Business*, 10(4), 541–551.
- Mišun, J., & Tomšík, V. (2002). Prímé zahraniční investice ve střední Evropě: Vytěšňují nebo vtahují domácí investice? *Politická Ekonomie*, 2, 251–259. doi:10.18267/j.polek.359
- Misztal, P. (2011). The relationship between savings and economic growth in countries with different level of economic development. *E-Finanse*, 7(2), 17–29.
- Mohan, R. (2006). Causal relationship between savings and economic growth in countries with different income levels. *Economics Bulletin*, 5(3), 1–12.
- Montek, S. A. (2002). *State-level performance under economic reforms, economic policy reforms and the indian economy*. A. O. Krueger (ed.). Chicago and London: University of Chicago Press.

- Moore, M. P., & Ranjan, P. (2005). Globalisation vs skill-biased technological change: Implications for unemployment and wage inequality. *The Economic Journal*, 115 (503), 391–422. doi:10.1111/j.1468-0297.2005.00994.x
- Najrzadeh, R., Reed, M., & Tasan, M. (2014). Relationship between savings and economic growth: The case for Iran. *Journal of International Business and Economics*, 2(4), 107–124. doi:10.15640/jibe.v2n4a7
- Nuță, A. C., Nuță, F. M., Chirilă, V., Roman, A., & Pușcă, A. C. (2015). Testing the relationship between public expenditure and economic growth in Romania. *Acta Universitatis Danubius-Economica*, 11(4), 1–10.
- Nwosa, P. I. (2014). Government expenditure, unemployment and poverty rates in Nigeria. *JORIND*, 12 (1), 77–84.
- Okubo, M. (2003). Intratemporal substitution between private and government consumption: The case of Japan. *Economics Letters*, 79(1), 75–81. doi:10.1016/S0165-1765(02)00290-2
- Olczyk, M., & Kordalska, A. (2015). Global competitiveness and economic growth: A one-way or two-way relationship? VIII th International Conference on Applied Economics Contemporary Issues in Economy under the title Market or Government?, Institute of Economic Research, Working Papers No. 63/2015, Poland, available online at: [http://www.badania-gospodarcze.pl/images/Working\\_Papers/2015\\_No\\_63.pdf](http://www.badania-gospodarcze.pl/images/Working_Papers/2015_No_63.pdf)
- Onodugo, V. A., Onyebuchi Obi, K., Anowor, O. F., Nwonye, N. G., & Ofoegbu, G. N. (2017). Does public spending affect unemployment in an emerging market? *Risk Governance & Control: Financial Markets & Institutions*, 7(1), 32–40.
- Paldam, M. (2001). Corruption and religion. Adding to the economic model. *Kyklos*, 54(2–3), 383–414. doi:10.1111/1467-6435.00160
- Peng, M. W., Wang, D., & Jiang, Y. (2008). An institution-based view of international business strategy: A focus on emerging economies. *Journal of International Business Studies*, 39(5), 920–936.
- Perotti, R. (2002). Estimating the effects of fiscal policy in OECD Countries. ISOM conference, Frankfurt.
- Petrylė, V. (2017). Does the global competitiveness index demonstrate the resilience of countries to economic crises? *Ekonomika*, 95(3), 28–36. doi:10.15388/Ekon.2016.3.10326
- Pilc, M. (2017). Cultural, political and economic roots of the labor market institutional framework in the OECD and post-socialist countries. *Equilibrium*, 12(4), 713–731. doi:10.24136/eq.v12i4.37
- Qin, D., Cagas, M. A., Quising, P., & He, X. H. (2006). How much does investment drive economic growth in China? *Journal of Policy Modeling*, 28(7), 751–774. doi:10.1016/j.jpmod.2006.02.004
- Ramudo, R. B., Grela, M. F., & Garcia, D. R. (2014). Consumption, investment and unemployment: SVAR tests of the effects of changes in the consumption-saving pattern. *Cogent Economics & Finance*, 2933676, 1–7.
- Roman, M. D., & Padureanu, A. (2012). Models of foreign direct investments influence on economic growth: Evidence from Romania. *International Journal of Trade, Economics and Finance*, 3(1), 25–29.
- Romero, D., & Strauch, R. (2003). Public finances and long-term growth in Europe – evidence from a panel data analysis. ECB Working Paper, No. 246.
- Romm, A. T. (2005). The relationship between savings and growth in Africa: A time series analysis. *The South African Journal of Economics*, 73(2), 171–189. doi:10.1111/j.1813-6982.2005.00012.x
- Schaltegger, C. A., & Benno, T. (2006). Growth effects of public expenditure on the state and local level: Evidence from a sample of rich governments. *Applied Economics*, 38(10), 1181–1192. doi:10.1080/00036840500392334
- Schclarek, A. (2007). Fiscal policy and private consumption in industrial and developing countries. *Journal of Macroeconomics*, 29(4), 912–939. doi:10.1016/j.jmacro.2006.03.002
- Schwab, K. (2015). The Global Competitiveness Report 2014–2015. Retrieved from <http://www.weforum.org> [accessed at 9th June 2018].



- Scutaru, C., Saman, C., & Pauna, B. (2015). The dynamics of household consumption in romania during economic crisis. *Procedia Economics and Finance*, 22, 820–827. doi:10.1016/S2212-5671(15)00316-0
- Szarowská, I. (2011). Relationship between government spending and economic growth in the Czech Republic. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, LIX(7), 415–421. doi:10.11118/actaun201159070415
- Szarowská, I. (2012). Public spending cyclicity and wagner's law in Central and Eastern European Countries. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 60(2), 383–390. doi:10.11118/actaun201260020383
- Szkorpová, S. (2015). Relationship between foreign direct investment and domestic investment in selected countries of central and Eastern Europe. *Procedia Economics and Finance*, 23, 1017–1022. doi:10.1016/S2212-5671(15)00350-0
- Tang, S., Selvanatha, E. A., & Selvanathan, S. (2008). Foreign direct investment, domestic investment, and economic growth in china: A time series analysis. Research Paper No. 19. Department of International Business and Asian Studies, Griffith University.
- Tiryaki, A., & Özkan, H. N. (2011). Economic activity and unemployment dynamics in Turkey. *Eskisehir Osmangazi University. FEAS Journal*, 6(2), 173–184.
- Titarenko, D. (2005). The influence of foreign direct investment on domestic investment processes in Latvia. MPRA Paper No. 1819, 1-9.
- Transparency International. (2017). Corruption perception index, available online at <http://www.transparency.org/cpi2017> [accessed at June 5th 2018].
- Ullah, I., Shah, M., & Ullah Khan, F. (2014). Domestic investment, foreign direct investment, and economic growth Nexus: A case of Pakistan. *Economics Research International*, 2014, 1–5. doi:10.1155/2014/592719
- Vasiliauskaite, A., & Stankevicius, E. (2009). Tax burden management and GDP growth: Case of EU countries. *Economics & Management*, 14, 202–209.
- Verhorn, C. L., & Vasarevici, A. (2011). FDI and macroeconomic policies, Central and Eastern European Countries. *Zagreb International Review of Economics & Business*, 14(1), 23–34.
- Xia, R., Liang, T., Zhang, Y., & Wu, S. (2012). Is global competitive index a good standard to measure economic growth? A suggestion for improvement. *International Journal of Services and Standards*, 8(1), 45–57. doi:10.1504/IJSS.2012.048438
- Yildirim, M. O., & Yildirim, A. E. (2017). The influence of consumption and investment on unemployment in Turkey: A SVAR approach. *Ekonomika*, 96(1), 74–92.

## Appendix

**Table 1.** VAR estimates for domestic\_invest, net\_export, private\_consumption, savings, governmental spending.

	DPRIVATE_ CONSUMPTION	DGOV_ SPENDING	DSAVINGS	DNET_ EXPORT	DDOMESTIC_ INVEST
DPRIVATE_CONSUMPTION (-1)	-0.609885 (0.13550)	0.101861 (0.06521)	-0.157572 (0.17129)	-0.741409 (0.27820)	-0.011330 (0.19497)
	[-4.50086]	[ 1.56205]	[-0.91990]	[-2.66504]	[-0.05811]
DPRIVATE_CONSUMPTION (-2)	-0.253615 (0.12317)	0.061725 (0.05928)	-0.020378 (0.15571)	-0.103830 (0.25288)	-0.132283 (0.17723)
	[-2.05901]	[ 1.04132]	[-0.13087]	[-0.41059]	[-0.74641]
DGOV_SPENDING(-1)	0.136970 (0.30724)	0.014613 (0.14785)	-0.002610 (0.38838)	-1.624238 (0.63078)	-1.023571 (0.44206)
	[ 0.44581]	[ 0.09883]	[-0.00672]	[-2.57498]	[-2.31543]
DGOV_SPENDING(-2)	0.765121 (0.26733)	-0.250943 (0.12865)	-0.105639 (0.33794)	-0.055004 (0.54885)	-0.517956 (0.38465)
	[2.86205]	[-1.95057]	[-0.31260]	[-0.10022]	[-1.34657]
DSAVINGS(-1)	-0.280967 (0.11762)	-0.007651 (0.05660)	0.052382 (0.14869)	0.435333 (0.24149)	0.272142 (0.16924)
	[-2.38871]	[-0.13517]	[ 0.35229]	[1.80272]	[1.60802]
DSAVINGS(-2)	-0.323460 (0.12219)	-0.000211 (0.05880)	0.100552 (0.15446)	0.060345 (0.25086)	0.075589 (0.17581)
	[-2.64722]	[-0.00359]	[0.65099]	[0.24055]	[0.42995]
DNET_EXPORT(-1)	-0.059643 (0.08195)	0.007569 (0.03944)	0.089755 (0.10360)	0.682323 (0.16826)	-0.185642 (0.11792)
	[-0.72776]	[ 0.19192]	[ 0.86636]	[ 4.05523]	[-1.57431]
DNET_EXPORT(-2)	-0.015752 (0.07736)	0.017383 (0.03723)	0.165313 (0.09779)	0.609412 (0.15883)	-0.011754 (0.11131)
	[-0.20362]	[ 0.46693]	[ 1.69045]	[ 3.83700]	[-0.10560]
DDOMESTIC_INVEST(-1)	-0.236988 (0.11369)	0.066501 (0.05471)	0.205105 (0.14371)	0.683072 (0.23340)	-0.104825 (0.16358)
	[-2.08459]	[ 1.21553]	[ 1.42720]	[ 2.92658]	[-0.64084]
DDOMESTIC_INVEST(-2)	-0.177294 (0.09844)	0.048880 (0.04737)	0.066876 (0.12444)	0.395636 (0.20211)	-0.082883 (0.14164)
	[-1.80098]	[ 1.03177]	[ 0.53740]	[ 1.95753]	[-0.58515]

Source: E-views estimations.