Inzinerine Ekonomika-Engineering Economics, **2012, 23(3), 233-241**

Fiscal Policy Interaction with Private Investment: the Case of the Baltic States

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crossref http://dx.doi.org/10.5755/j01.ee.23.3.1934

Government's role in promoting the country's economy remains a relevant issue both in academics and politicians debates. Not only for individual countries but also for the European Union as a whole the promotion of high value-added activities, in particular in lower development small open economies which hardly recover from external economic shocks and experience significant social problems due to high unemployment level remains a relevant issue. The country's competitiveness and level of development, as well as the country's economy growth, depend on high value-added investment growth, and both private and public investments play a significant role in economy of each country. Government's role, in particular through the fiscal policy, in the promotion of these activities is crucial. The prevailing view in the scientific literature is that in developed countries public investment crowds out private investment, while in developing – crowds in, but it is not clear under what conditions these effects occur because the countries are very different. Also the effect of the taxes revenues and the government expenditure indicators on private investment is unclear because the effect of these variables on private investment has not been studied comprehensively. So the aim of the research is to evaluate the relationship between fiscal policy indicators, such as the government revenues from taxes and the government expenditure, and private investment comprehensively including indicators of macroeconomic environment in the Baltic States, by applying correlation *and* regression analysis.
The conducted research revealed the existence of strong direct relationship between the fiscal policy indicators and private investment in the Baltic States, showing the importance of fiscal policy to private investment. During the analysis of detailed tax and expenditure indicators it has been established that the strongest relationship exists between the current taxes on income, wealth, etc and public investment with private investment. The current taxes on income, wealth, etc indicator explains about 86 percent of the private investment fluctuations and the gross fixed capital formation by public sector indicator explains about 80 percent of the private investment fluctuations in the Baltic States, whereas the effect of these indicators on private investment is analyzed separately, while macroeconomic indicators of a country explain only about 8-13 percent of the private investment fluctuations.

Keywords: *fiscal policy, private investment, government revenue, government expenditure, macroeconomic indicators, Baltic States.*

Introduction

According to Hermes & Lensink (2001), the studies revealed that disproportionately big part of changes within the growth of national economies can be explained by changes within private investment, affected by changes in fiscal policy. This conclusion justifies the significance of fiscal policy effects on private investment volumes. However, the understanding of how private investment reacts to changes within fiscal policy is also important, as investment is really significant for economic growth of a country and perspectives of companies' development and competitiveness (Jongwanich & Kohpaiboon, 2008; Macerinskiene & Sakhanova, 2011). In research literature it was agreed that the increase in private investment, while other factors being stable, has an undoubtedly positive effect on production volumes. But still relevant issues involve the following – which factors effect private investment, what is the interaction between fiscal policy indicators and private investment, what decisions should the government take for promoting private investment, thus aiming to increase the future economic growth. Also for fiscal policy makers the efficiency of fiscal policy measures in pursue of the private investment growth is still relevant, especially in the post-crisis period, while in the crisis-affected countries they can hardly achieve their previous level.

Scientific problem of the article. The effect of fiscal policy on private investment has been an important issue in fiscal policy debates at the level of politicians and scientists for a long time. In empirical studies investment behavior is explored at both the aggregate level of the country (Luintel & Mavrotas, 2005; Ang, 2009; Hassan & Salim, 2011), and the company level (Almeida & Campello, 2007; Cava, 2005; Bokpin & Onumah, 2009; Chen, Da, & Larrain, 2011; Coulibaly & Millar, 2011; Norvaisiene, et al., 2008). Analysis of empirical studies related to interaction between fiscal policy and private investment revealed that in scientific researches much attention is attached to the link between the government investment and private investment, both in developed and developing countries. Scientific literature contains indications that the state investment can either crowd in (Asante, 2000; Hermes & Lensink, 2001; Jongwanich &

Kohpaiboon, 2008) or crowd out private investment (Hermes & Lensink, 2001; Badawi, 2003; Badawi, 2005). The prevailing view in the scientific literature is that in developed countries public investment crowds out private investment, while in developing – crowds in, but it is not clear under what conditions these effects occur because the classification of countries into developed and developing is very general, though the countries are very different. Also the effect of the collected taxes volumes and the government expenditure indicators on private investment is unclear because the effect of these variables on private investment has not been studied comprehensively. Also, Luintel & Mavrotas (2005) maintain that the key investment function parameters are heterogeneous and characteristic to particular country, as countries significantly vary by fundamental factors, affecting the behavior of private investment. According to Furceri & Sousa (2009), the effect of the state investment on private investment is essential and should be considered by geographic regions. Thus, the *novelty of this study* refers to analysis of interaction between fiscal policy indicators and private investment in the Baltic States, by employing detailed indicators on the government revenues from taxes and the government expenditure, also including macroeconomic environment indicators. This study is also significant because similar studies have not been performed in the Baltic States and because these countries have lower fiscal policy-making practice. *The aim of the research* is to evaluate the relationship between fiscal policy indicators, such as the government revenues from taxes and the government expenditure, and private investment in the Baltic States.

Research object: relationship between fiscal policy indicators and private investment.

Research methods: analysis and synthesis of scientific literature, logic analysis and synthesis, statistical methods: Pearson correlation analysis and multiple regression analysis.

Overview of scientific researches on interaction between fiscal policy and private investment

The government's activities can directly and indirectly increase the total production volume through interaction with the private sector. The scientific literature maintains that changes within the state expenditure and taxes affect companies' profit, consequently, private investment as well. Private investment is one of the factors, mostly contributing to economic growth, both in developed and developing countries. This is because employment possibilities are created through investment and new technologies, thus increasing the revenues, which, finally, determine economic growth (Balls, 2005).

Scientific literature maintains that changes within the government expenditure, rather than changes within taxes, have a major effect on private investment (Alesina *et al.*, 2002; Arin, 2004; Balls, 2005).

In neoclassical economics theory, in comparison with other theories, major focus is attached to the focus substitution or supplement relationship between the government investment and private investment. The substitution hypothesis is based on the approach that the government's bigger expenditure on capital products will raise the price of capital accumulation above the optimal level, and this will encourage the private sector representatives' aspiration to reduce their investment, with the aim to restore the optimal rate of capital accumulation in economy. This means that the government's bigger expenditure, increasing the demand of lending funds, will make pressure on the increase in the interest rate. So, first, fewer funds will be available for the private sector's consumption and investment and, second, higher interest rates will suppress investment. In both cases, financing government expenditure by borrowing, the state budget deficit will increase, resulting in the government budget deficit negative impact on both the economic growth and private investment (Hermes & Lensink, 2001; Bahmani-Oskooee, & Economidou, 2006; Karazijiene, 2009; Mehmood & Sadiq, 2010; Sineviciene & Vasiliauskaite, 2011; Fatima, 2011). According to Saunoris & Payne (2010), more effective budget deficit reduction can be achieved through the reduction in expenditures rather than increases in revenue (Saunoris & Payne, 2010). Such an action by the government may lead to the lower interest rate spreads and increased private sector borrowing opportunities. However, if the private sector representatives do not fully consider the increase in the government expenditure, without realizing the future increase in taxes, in this case the additional state debt will be absorbed, excluding any additional negative impact on real economy. So in this case, the neutrality condition should be in force, which shows that the government's deficit has a neutral impact on the investment costs and growth. However, if the government sector expenditure is a substitution of capital products, they will displace the private investment. On the contrary, the supplement hypothesis emphasizes that the governmental sector expenditure on infrastructure and human capital, is likely to increase marginal productivity of private capital, and thus will promote bigger private investment, i.e. this might determine the investment crowd in effect, although in both hypothesis the effect of different state expenditure categories on private investment will differ (Laopodis, 2001; Wang, 2005).

Kandil (2009) made important findings in the area of crowding in or crowding out private investment. The author argues that as many advanced countries employ the existing resources near full utilization, an increase (decrease) in government spending increases (relaxes) constraints on available financing, limiting (availing) resources to finance the private activity. Private investment decisions are mostly dependent on economic conditions in developing countries, and government spending provides the necessary stimulus to mobilize private resources (Kandil, 2009).

Alesina *et al.* maintains that in OECD countries changes in fiscal policy play an important role in the private business investment. Interestingly, major effects arise from changes in primary government spending, especially in the government wage bill (Alesina *et al.*, 2002).

According to Soli, Harvey, & Hagan (2008) changes in the government capital expenditure does not immediately affect private investment, but rather has a significant positive effect only after three years with all such spending in periods before being insignificant. The government recurrent expenditure is negative and insignificant for private investment.

Marattin & Salotti (2010) conducted analysis on interaction between the state expenditure and private investment of 14 EU countries in the period of 1970-2006. The authors identified that the shock of the state expenditure has positive effect on private investment. The increase in the state expenditure by 1% generates the increase of 0.41 % in private investment.

When splitting the state expenditure into expenditure related and not related to remuneration, it was established that remuneration-related expenditure has a relatively higher stimulating effect, whereas the government investment has no stimulating effect on private investment (Marattin & Salotti, 2010).

Hunt (2012) concludes that the most efficient short-term relationship between the capital stocks involves public sector investment responding to the private sector investment activity. Rather than public investment exerting a universally crowding-out or crowding-in effect on private investment, the evidence presented in this article suggests that public investment is most likely to be enticed by activity in private investment (Hunt, 2012).

There are indications in scientific literature that the link exists between government tax revenues and private investment. So, tax revenues, as well as the government expenditure, also affect private investment. Soli, Harvey, & Hagan (2008) identified that taxes on international trade have negative impact on private investment, whereas taxes on internal products and services, as well as income and property taxes have positive effect on private investment.

Generalizing approaches on the effect of the government's tax policy on private sector's investment-related decisions, prevailing in research literature, it is possible to assume that majority of taxes have negative impact on private investment (Hermes & Lensink, 2001; Alesina *et al.*, 2002; Vergara, 2010; Forni, Monteforte & Sessa, 2009; Djankov *et al.*, 2010).

Beside the fiscal policy variables, private investment is significantly affected by fundamental factors. In many studies economic growth is considered as one of key determination factors of private investment. Conditions of the financial system and its potential to extend credit to the economic participants are one of the crucial factors for economy (Asante, 2000; Sinevičienė & Vasiliauskaitė, 2010; Lakstutiene, 2008; Lakstutiene, Krusinskas & Platenkoviene; Snieska & Venckuviene, 2011) and also for private investment. Economies are still strongly dependent on the banking sector and the financial possibilities of diversification are still low. Economic uncertainty also is a crucial determinant for economic growth (Lakstutiene, Breiteryte & Rumsaite, 2009) and private investment. Asante (2000) found that macroeconomic instability, political instability has negative effect on private investment. Also important indicators are inflation and real exchange rate. According to neoclassical theory, the user cost of capital is one of major micro level determinant of private investment (Davis, 2010).

The analysis of the scientific literature suggests that private investment is influenced by both the fiscal policy indicators and macroeconomic indicators. So the impact of these two groups of indicators on private investment must be studied jointly.

Analysis on fiscal policy interaction with private investment in Estonia, Latvia and Lithuania: research methodology and empirical results

The aim of this section is to assess the influence of fiscal policy on the private investment at the empirical level by applying correlation and regression analyses.

Research methodology. Assessment of the interaction between fiscal policy and private investment involves the employment of Pearson correlation and multiple regression analyses. The investment model that is used to investigate the effects of various forms of the government spending and revenues and macroeconomic variables on private investment according the above theoretical considerations in the Baltic States is specified as:

$$PI_{it} = \alpha_i + \sum_{n=1}^{17} \beta_n FP_{n,t} + \sum_{n=1}^{11} \delta_n MI_{n,t} + \varepsilon_{it}, \qquad (1)$$

here: PI_{it} – private investment (measured by gross fixed capital formation by private sector);

FPn,t – vector of country's fiscal policy indicators: *general government revenue from taxes:* current taxes on income, wealth, etc (TAXI); taxes on production and imports (TAXPI); social contributions (TAXSC); total government revenue from taxes (TTAX); *general government expenditure according ESS'95 classification:* gross capital formation (GCF); gross fixed capital formation (investment) (GFCF); acquisitions less disposals of non-financial non-produced assets (ACQ); compensation of employees (CEMP); subsidies (SUBS); property income (PROPI); social benefits (SB); intermediate consumption + other taxes on production + current taxes on income, wealth, etc (ICONS); other current transfers (OCT); capital transfers (CT); total expenditure (TE); government debt as a percentage of GDP (GD); budget deficit(surplus)/GDP (percentage) (BDS).

In majority of studies, exploring investment behavior, private investment is described as gross fixed capital formation rate, measured as the percentage of GDP. In the authors' opinion, this is a derived indicator, which, when applied for analyzing the effects of other indicators, also expressed as the percentage of GDP, can determine wrong results with regard to private investment. In this study private investment is described as gross fixed capital formation rate, million Euros. Due to the previously mentioned reason, indicators of different taxes and different government expenditure are also measured by million Euros, at current prices.

$MI_{n,t}$ –vector of country's macroeconomic indicators: real gross domestic product growth (GDPGR); real interest rate (RIR); domestic credit to private sector (% of GDP) (CRED); lending interest rate (LIR); inflation (GDP

deflator) (INF); real effective exchange rate (REER); real user cost of capital (RUCC); output gap (OG); gross operating surplus (corporations) (GOS); macroeconomic uncertainty (MUNC), dummy variable (DV).

a_i, β_n, δ_n – regression coefficients.

ε_{it} – standard error.

Data. Empirical analysis focuses on the data for Estonia, Latvia and Lithuania. Various indicators are collected from Eurostat Statistics, World Bank Statistics and Annual Macroeconomic Database of the European Commission (AMECO) databases; description of all independent macroeconomic variables used in this research and detailed data sources are presented in Table 1. All fiscal policy variables are collected from Eurostat. The study covers the period from 1995 till 2010, using annual data.

Table 1

Macroeconomic indicators used in the research study

Description	Scientific background for indicators selection	Data sources
Real gross domestic product (GDP) growth (annual growth in percentage)	Jongwanich & Kohpaiboon, 2008; Ang, 2009; Asante, 2000; Badawi, 2005; Ahmad & Qayyum, 2008; Misati & Nyamongo, 2011	Eurostat
Real interest rate (percentage)	Asante, 2000, Luintel & Mavrotas; 2005; Erden & Holcombe, 2005; Badawi, 2005; Michaelides *et al*., 2005; Atesoglu & Emerson, 2008; Ahmad & Qayyum, 2008; Misati & Nyamongo; 2011	The World Bank
Domestic credit to private sector/GDP(percentage)	Jongwanich & Kohpaiboon, 2008; Luintel & Mavrotas; 2005; Badawi, 2005; Misati & Nyamongo, 2011; Cavallo & Daude, 2011	The World Bank
Lending interest rate (percentage)	The variable is used as a prime indicator of borrowing costs by private sector	The World Bank
Inflation (GDP deflator) (annual growth in percentage)	Luintel & Mavrotas; 2005	The World Bank, Eurostat
Real effective exchange rate ((deflator: consumer price indices - 27 trading partners)	Jongwanich & Kohpaiboon, 2008; Asante, 2000; Luintel & Mavrotas; 2005; Badawi, 2005;	Eurostat
Real user cost of capital (percentage)	Ang, 2009; Davis, 2010, Cava, 2005	Author calculations (data:Eurostat, the World Bank)
Output gap (is measured by the deviation of actual output from its estimated potential output) (percentages)	Jongwanich & Kohpaiboon, 2008	AMECO
Gross operating surplus (corporations), billion ECU/EUR. (Gross operating surplus means operating surplus without deducting consumption of fixed capital).	This variable is incorporated in the analysis for the first time. It's used as a firm level indicator.	AMECO
Macroeconomic uncertainty (measured as three –year moving average standard deviation of change in real GDP growth	Jongwanich & Kohpaiboon, 2008; Ang 2009	Author calculations
Dummy variable that takes the value of 0 before entering European Union, and 1 after the country's incorporation in the European Union (after 2004)	Michaelides *et al*., 2005	European Commission

In order to evaluate the capital investment cost of capital the indicator of neoclassical investment model - real user cost of capital - is used. Real user cost of capital ($RUCC_t$) is calculated as follows (Ang, 2010):

$$RUCC_t = P_t^K (i_t - \pi_t^e + \delta_t) / + P_t, \qquad (2)$$

here: P_t^K - -price of capital is measured by the gross fixed capital formation deflator;

i_t - the average commercial bank lending rates;

π_t^e - the expected rate of inflation is constructed from the GDP deflator;

δ_t - the depreciation rate is assumed to be constant at 5%;

P_t - the GDP deflator.

Empirical results. Correlation analysis results of fiscal policy and macroeconomic indicators relationship with private investment are presented in Table 2. There is a strong, statistically significant, direct correlation link between the total government revenue from taxes (TTAX) and total government expenditure (TE) and private investment. Whereas the government budget deficit and government debt, measured as the percentage of GDP, have a weak and statistically insignificant relationship with private investment. However the budget deficit has a reverse relationship. Consequently, it is possible to assume that the private sector does not consider indicators of the government budget deficit and debt, when making investment-related decisions.

Analysis on the effect of separate tax groups on private investment shows that the current taxes on income, wealth, etc (TAXI) have a very strong, direct relationship with private investment, while taxes on production and imports (TAXPI) and social contributions (TAXSC) have a strong direct relationship with private investment. The relationship between private investment and the amount of collected taxes allows making a conclusion that together with economic growth, at the same time increasing sales volumes and profits of companies as well as private persons' income, more taxes are collected, and the prevailing optimistic expectation of economic growth increases private investment volumes.

Analysis on interaction between the government expenditure and private investment shows that the strong significant positive correlation exists between gross capital formation (GCF) expenditure and gross fixed capital formation by public sector expenditure (investment) and private investment. Results of this study support the hypothesis that public investment crowds in private investment and does not contravene the results obtained by other authors, that in developing countries the government investment crowds in private investment. Also a strong, statistically significant relationship is established between the intermediate consumption + other taxes on production

+ current taxes on income, wealth, etc (ICONS); compensation of employees (CEMP); subsidies (SUBS) and private investment. Analysis on interaction between the government expenditure and private investment allows the assumption that alongside with economic growth, the government expenditure, as well as the private sector investment increase, and vice versa.

Table 2

The empirical results of fiscal policy and macroeconomic indicators relationship with private investment using Pearson correlation analysis

	Variable	ICONS	CEMP	SUBS	PROPI	OCT	SB	CT	GCF	ACQ	GFCF	TE	TAXPI	TAXI	TAXSC
PI	Coefficient	,852**	,825**	,839**	,389**	,708**	,677**	,151	,897**	-,174	,894**	,811**	,882**	,927**	,799**
	Sig. (2-tailed)	,000	,000	,000	,006	,000	,000	,306	,000	,252	,000	,000	,000	,000	,000

	Variable	REER	CRED	LIR	RIR	INF	RUCC	OG	GDPG	MUNC	GOSS	EEU	BDS	GD	TTAX
PI	Coefficient	,659**	,616**	-,542**	-,236	-,184	-,410**	,705**	-,004	-,123	,866**	,757**	-,046	,163	,893**
	Sig. (2-tailed)	,000	,000	,000	,107	,211	,004	,000	,981	,405	,000	,000	,758	,267	,000

***. Correlation is significant at the 0.01 level (2-tailed).*

Analysis on the relationship of macroeconomic indicators with private investment reveals that the strongest link is established between gross operating surplus of corporations and private investment. Joining the European Union also had positive effect on private investment. Output gap (OG), real effective exchange rate (REER) and domestic credit to private sector as percentage of GDP (CRED) have strong, direct and statistically significant relationship with private investment. Whereas the lending interest rate (LIR) has an intermediate, reverse and statistically significant relationship with private investment. However, when analyzing the relationship between the lending interest rate and budget deficit, a very weak, reverse and statistically insignificant link between these indicators is identified. Also the absence of link between the government debt and private investment was identified, and the obtained correlation coefficient is not statistically significant. Thus, it is possible to make a conclusion that results of this study did not verify the hypothesis that the public sector budget deficit and debt increase borrowing costs of the private sector. Real user cost of capital has a weak, reverse and statistically significant relationship with private investment. Real interest rate (RIR), macroeconomic uncertainty (MUNC) and inflation have reverse, weak and statistically insignificant relationship with private investment.

In order to specify the form of relationship between fiscal policy and macroeconomic environment variables the regression analysis is performed (see Table 3). First five regressions describe relationship between fiscal policy indicators and private investment from government revenue side and 6-10 regressions – from government expenditure side.

Table 3

The empirical results of fiscal policy and macroeconomic indicators impact on private investment using multiple regression analysis

Regression / Independent variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Current taxes on income, wealth, etc	**2,309 (0,000)**	**1,905 (0,000)**	**1,705 (0,000)**	**1,702 (0,000)**	**1,728 (0,000)**					
Gross fixed capital formation						**3,545 (0,000)**	**2,870 (0,000)**	**1,780 (0,000)**	**2,830 (0,000)**	**2,868 (0,000)**
Output Gap		**72,715 (0,000)**	**68,828 (0,000)**	**68,095 (0,000)**	**64,030 (0,000)**		**84,832 (0,000)**	**85,098 (0,000)**	**79,579 (0,000)**	**82,289 (0,000)**
Gross operating surplus								**182,328 (0,004)**		
Domestic credit to private sector			**8,898 (0,000)**	**8,763 (0,000)**	**7,767 (0,000)**				-0,504 (0,0865)	-2,71 (0,931)
Lending interest rate				-2,485 (0,775)					-16,067 (0,226)	
Real user cost of capital					**-14,206 (0,091)**					-7,863 (0,551)
Constant	194,872 (0,079)	747,78 (0,000)	541,635 (0,000)	578,14 (0,001)	697,276 (0,000)	922,699 (0,000)	1300,099 (0,000)	1118,663 (0,000)	222,125 (0,000)	1384,253 (0,000)
R Square	0,859	0,942	0,966	0,967	0,969	0,799	0,919	0,933	0,922	0,920
Adjusted R Square	0,856	0,939	0,964	0,963	0,966	0,795	0,915	0,928	0,915	0,912
Std Error of the Estimate	591,5420	384,0425	294,7816	297,9023	288,3464	705,0508	452,8691	416,6397	455,2652	461,2482

Note: Dependent variable: gross fixed capital formation by private sector.
Bold typeface for values indicates significantly different from zero at the 10 % level.
Stepwise method (criteria: Probability-of-F-to-enter <=0,050, Probability-of-F-to-remove >=0,100) was used in regression models 1, 2, 3, 6, 7, 8.
Enter method was used in regression models 4, 5, 9, 10.
Source: author's calculation.

Since both the tax and the government's expenditure indicators are highly correlated, only indicators which had the strongest statistical relationship with private investment are included into regression analysis, i.e. current taxes on income, wealth, etc (TAXI) from revenue side and gross fixed capital formation expenditure (investment) by public sector. Macro-environmental variables that had weak relationship with private investment, and were statistically insignificant in correlation analysis are removed from further regression analysis.

The regression analysis on the impact of fiscal policy indicators on private investment shows that current taxes on income, wealth, etc indicator explains about 86 percent, while gross fixed capital formation by public sector indicator explains about 80 percent of private investment fluctuations. However, vector of country's macroeconomic indicators explains only 8-13 percent of the private investment fluctuations. The best explanations of private investment fluctuations are given by the regression analysis that incorporates macroeconomic and fiscal policy indicators.

The results of multiple regression analysis suggest that the majority of independent variables in the regression models are not statistically significant. Statistically significant is the output gap in all regressions (except 1 and 6 regression equations (see Table 3), when only the fiscal policy variables were included in the regression equations). Output gap indicator explains about 8-12 percent of private investment fluctuations. Gross operating surplus is also a statistically significant variable (Equation 8), but its effect on private investment is direct but very small. Domestic credit to private sector indicator has acquired different signs in the regression equations, but bearing in mind the correlation analysis results, it can be stated that the possibility to extend credit for the private sector positively influence private investments (3, 4, 5 regressions). Lending interest rate indicator negatively affects private investment, but the value obtained of this indicator is statistically insignificant. Real user cost of capital adversely affects private investment, but this variable is statistically significant only in regression 5. In summary of the results of the regression analysis it can be stated that investment behavior in the Baltic States is best explained by the following indicators of fiscal policy: current taxes on income, wealth, etc and gross fixed capital formation by public sector. Also the following macro-environmental indicators are important: output gap, domestic credit to private sector, gross operating surplus of corporations and real user cost of capital.

Conclusions

1. Conducted research revealed the existing significant direct relationship between the fiscal policy indicators and private investment. Total government revenue from taxes and total government expenditure indicators had strong, statistically significant direct correlation link with private investment. However, no statistically significant link between private investment and the government deficit (surplus) and debt ratios, as well as between the lending interest rate and the government deficit (surplus) and the debt ratios was identified. Consequently, the opinion, prevailing in research literature, that the government's borrowing has negative impact on private investment, thus increasing the borrowing interest rate for the private sector was not verified.

2. Analysis of the fiscal policy indicators impact on private investment from the tax revenue side has revealed that the strongest relationship exists between the current taxes on income, wealth, etc and private investment. Analysis of fiscal policy indicators interaction with private investment from the government expenditure side has showed that the strongest relationship exists between public investment and private investment. The obtained results do not contravene the approach, prevailing in research literature that in developing countries public investment crowds in private investment.

3. Fiscal policy indicators explain the main part of private investment fluctuations, while country's macroeconomic indicators impact on private investment is considerably less. The output gap indicator explains major part of the macroeconomic indicators effect on private investment. The obtained results verify the approach that the GDP indicator has direct relationship with private investment, and it is one of key indicators in the assessment of private investment behavior.

4. Generalizing results of the research, it is possible to maintain that in the Baltic States strong relationship exists between the fiscal policy variables and private investment. This can be explained by the fact that alongside with economic growth, more taxes are collected, however, at the same time the government expenditure, as well as private investment increase, and vice versa.

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Lina Sinevičienė, Asta Vasiliauskaitė

Fiskalinės politikos sąveika su privačiomis investicijomis: Baltijos šalių atvejis

Santrauka

Tiek privačios, tiek viešojo sektoriaus investicijos turi labai didelę reikšmę kiekvienos šalies ekonomikos plėtrai. Ne mažiau svarbi jų reikšmė ir įmonėms. Nors nemažai tyrimų, kuriuose analizuojama fiskalinės politikos sąveika su privačiomis investicijomis atskleidė vertingų rezultatų, tačiau jie yra gana prieštaringi. Investicijų elgsena empiriniuose tyrimuose analizuojama tiek bendru šalies lygmeniu (Luintel & Mavrotas, 2005; Ang, 2009; Hassan & Salim, 2011), tiek įstaigų lygmeniu (Almeida & Campello, 2007; Cava, 2005; Bokpin & Onumah, 2009; Chen, Da, & Larrain, 2011; Coulibaly & Millar, 2011; Norvaisiene, Stankeviciene & Krusinskas, 2008). Nors mokslinėje literatūroje sutariama, kad privačių investicijų didėjimas (kai kiti veiksniai yra nekintantys), turi neginčijamą teigiamą poveikį BVP augimui, tačiau nepakankamai išnagrinėta, kokie veiksniai sąlygoja privačias investicijas, kokia yra sąveika tarp fiskalinės politikos ir privačių investicijų.

Fiskalinės politikos poveikio privačioms investicijoms tyrimų aktualumą pagrindžia ir tai, kad fiskalinės politikos formuotojai nuolat diskutuoja kaip padidinti privačias investicijas, kad būtų sudarytas palankesnis investicinis klimatas šalyje, nes investicijos yra vienas iš pagrindinių ekonomikos augimo veiksnių. Dėl investicijų, naujų technologijų atsiranda naujų įsidarbinimo galimybių. To pasekmė – auga ekonomikos dalyvių pajamos, kurios kartu sąlygoja ir šalies ekonomikos augimą. Kaip teigia Hermes, ir Lensink (2001), tyrimai parodė, kad labai didelę dalį šalių ekonomikos augimo pokyčių paaiškina privačių investicijų pokytis, sąlygotas fiskalinės politikos pasikeitimų. Ši išvada pagrindžia fiskalinės politikos svarbą privačių investicijų apimtims.

Analizuojant empirinius tyrimus, susijusius su fiskalinės politikos sąveika ir privačiomis investicijomis, pastebėta, kad moksliniuose tyrimuose yra daug dėmesio skiriama vyriausybės investicijų ir privačių investicijų ryšiui tiek išsivysčiusiose, tiek besivystančiose šalyse. Literatūroje nurodoma, kad vyriausybės investicijos tiek gali pritraukti (Asante, 2000; Hermes & Lensink, 2001; Jongwanich & Kohpaiboon, 2008) tiek gali ir išstumti (Hermes &

Lensink, 2001; Badawi, 2003; Badawi, 2005) investicijas. Tačiau nepaisant tokio pobūdžio studijų gausos pasigendama empirinių tyrimų, analizuojančių kitų fiskalinės politikos kintamųjų poveikį privačioms investicijoms (išsamių mokesčių ir vyriausybės išlaidų rodiklių). Luintel & Mavrotas (2005) teigia, kad pagrindiniai investicijų funkcijos parametrai yra heterogeniški ir būdingi konkrečiai šaliai, nes šalys labai skiriasi fundamentiniais veiksniais, sąlygojančiais privačių investicijų elgseną. Taip pat, kaip nurodo Furceri & Sousa (2009), vyriausybės išlaidų poveikis privačioms investicijoms yra svarbus ir toliau turi būti tiriamas atsižvelgiant į geografinius regionus. Taigi šio *tyrimo naujumas* yra tai, kad yra analizuojama fiskalinės politikos sąveika su privačiomis investicijomis naudojant išsamius vyriausybės pajamų iš mokesčių ir vyriausybės išlaidų rodiklius, kartu į tyrimą įtraukiant ir makroekonominės aplinkos rodiklius Baltijos šalyse (tyrimų, analizuojančių Baltijos šalis, nėra atlikta).

Tyrimo tikslas – įvertinti fiskalinės politikos ryšį su privačiomis investicijomis Baltijos šalyse.

Tyrimo objektas: ryšys tarp fiskalinės politikos ir privačių investicijų.

Tyrimo metodika: sisteminė mokslinės literatūros analizė, loginė lyginamoji analizė ir sintezė, statistiniai metodai: Pirsono koreliacinė analizė ir daugialypė regresinė analizė. Empirinis tyrimas atliekamas Estijos, Latvijos ir Lietuvos mastu, laikotarpis nuo 1995 iki 2010 metų.

Nors mokslinėje literatūroje iki galo nesutariama dėl fiskalinės politikos poveikio privačioms investicijoms išsivysčiusiose ir besivystančiose šalyse, tačiau vyrauja požiūris, kad išsivysčiusiose šalyse viešojo sektoriaus investicijos išstumia privačias investicijas, o besivystančiose – pritraukia. Kandil (2009) teigia, kad išsivysčiusiose šalyse esami ištekliai yra iki galo išnaudojami, todėl vyriausybės išlaidų didėjimas padidina (sumažina) apribojimus turimiems finansavimo ištekliams, apribojant (atlaisvinant) išteklius privačioms veikloms finansuoti. Privačių investicijų sprendimai dažniausiai priklauso nuo ekonominių sąlygų besivystančiose šalyse, o vyriausybės išlaidos suteikia reikiamų paskatų siekiant pritraukti privačias lėšas, todėl viešojo sektoriaus investicijos skatina privataus sektoriaus investicijas besivystančiose šalyse.

Vyriausybės veikla gali tiesiogiai ar netiesiogiai didinti bendrą gamybos apimtį per sąveiką su privačiuoju sektoriumi. Literatūroje teigiama, kad vyriausybės išlaidų ir mokesčių pokyčiai lemia įmonių pelnus, kartu ir privačias investicijas. Literatūroje teigiama, kad privačioms investicijoms didesnę įtaką nei mokesčių pokyčiai daro vyriausybės išlaidų pasikeitimai (Alesina *ir kt*, 2002; Arin, 2004; Balls, 2005). Taip pat yra labai svarbu, ar vyriausybė geba subalansuoti biudžeto pajamas ir išlaidas, nes daugeliu atvejų vyriausybės biudžeto deficitas turi neigiamą poveikį tiek ekonomikos augimui, tiek privačioms investicijoms (Hermes & Lensink, 2001; Bahmani-Oskooee & Economidou, 2006; Mehmood & Sadiq, 2010; Fatima, 2011), nes didesnės vyriausybės išlaidos didina skolinamų lėšų paklausą, todėl didėja palūkanų normos Taigi, pirma, mažiau pinigų bus prieinama privataus sektoriaus vartojimui ir investicijoms, ir antra, aukštos palūkanų normos slopins investicijas. Tačiau, jeigu privataus sektoriaus atstovai visiškai neatsižvelgia į vyriausybės išlaidų didėjimą, nesuvokdami apie būsimą mokesčių didinimą ateityje, tokiu atveju papildoma vyriausybės skola bus absorbuojama be jokio papildomo neigiamo poveikio realiai ekonomikai. Taigi, šiuo atveju turėtų galioti neutralumo sąlyga, kuri rodo, kad vyriausybės deficitas turi neutralų poveikį investicinėms išlaidoms ir augimui (Laopodis, 2001; Wang, 2005).

Be fiskalinės politikos kintamųjų, privačioms investicijoms svarbią įtaką daro ir fundamentiniai veiksniai. Daugelyje tyrimų ekonomikos augimas nurodomas kaip vienas iš svarbiausių veiksnių, sąlygojančių privačias investicijas. Finansų sistemos būklė ir jos galimybės išplėsti kreditavimą ekonomikos dalyviams taip pat yra vienas iš pagrindinių veiksnių, sąlygojančių privačias investicijas. Taip pat yra svarbūs šie veiksniai: ekonomikos neapibrėžtumas, infliacija ir realusis valiutos kursas. Pagal neoklasikinę ekonomikos teoriją, realiųjų investicijų kapitalo kaštai yra vienas iš svarbiausių privačioms investicijoms poveikį darančių mikrolygio veiksnių.

Fiskalinės politikos sąveikos su privačiomis investicijomis tyrimas Baltijos šalyse parodė, kad tarp fiskalinės politikos kintamųjų ir privačių investicijų yra stiprus tiesioginis ryšys. Vyriausybės pajamos iš mokesčių ir vyriausybės išlaidos turi stiprų, statistiškai patikimą tiesioginį koreliacinį ryšį su privačiomis investicijomis, išreiškiamomis bendrojo pagrindinio kapitalo formavimo rodikliu. Tačiau nenustatyta statistiškai reikšmingo ryšio tarp privačių investicijų ir vyriausybės deficito (pertekliaus) ir skolos rodiklių, taip pat ir tarp paskolų palūkanų normos ir vyriausybės deficito (pertekliaus) ir skolos rodiklių. Todėl nepasitvirtino mokslinėje literatūroje vyraujanti nuomonė, kad vyriausybės skolinimasis neigiamai veikia privačias investicijas didindamas paskolų palūkanų normą privačiam sektoriui.

Analizuojant išsamius mokesčių ir vyriausybės išlaidų rodiklius nustatyta, kad stipriausias ryšys egzistuoja tarp einamųjų pajamų, turto ir kitos mokesčių grupės bei privačių investicijų. Einamųjų pajamų, turto ir kt. mokesčių rodiklis paaiškina apie 86 proc. privačių investicijų pokyčių, kai tuo metu vyriausybės investicijų rodiklis paaiškina apie 80 proc. privačių investicijų pokyčių Baltijos šalyse. Tyrimo rezultatai neprieštarauja mokslinėje literatūroje susiformavusiam požiūriui, kad besivystančiose šalyse vyriausybės investicijos pritraukia privačias investicijas.

Fiskalinės politikos rodikliai paaiškina didžiąją dalį privačių investicijų pokyčių, kai tuo metu makroekonominiai rodikliai paaiškina tik apie 8-13 proc. privačių investicijų pokyčių. Potencialaus ir faktinio BVP skirtumo rodiklis paaiškina didžiąją dalį makroekonominių rodiklių poveikio privačioms investicijoms (apie 8-12 proc.). Gauti rezultatai patvirtina požiūrį, kad BVP turi tiesioginį ryšį su privačiomis investicijomis ir yra vienas iš pagrindinių rodiklių vertinant privačių investicijų elgseną.

Įmonių bendrojo likutinio pertekliaus rodiklis taip pat yra statistiškai reikšmingas kintamasis vertinant privačias investicijas, tačiau nors jo poveikis privačioms investicijoms yra tiesioginis, tačiau labai mažas. Paskolų palūkanų normos ir realiųjų investicijų kapitalo kaštų rodikliai neigiamai veikia privačias investicijas.

Apibendrinant tyrimo rezultatus galima teigti, kad tarp fiskalinės politikos ir privačių investicijų egzistuoja stiprus ryšys Baltijos šalyse. Tai būtų galima paaiškinti tuo, kad augant ekonomikai, surenkama daugiau mokesčių, tačiau kartu didėja ir vyriausybės išlaidos, taip pat didėja privačios investicijos ir atvirkščiai.

Raktažodžiai: *fiskalinė politika, privačios investicijos, vyriausybės pajamos, vyriausybės išlaidos, makroekonominiai rodikliai, Baltijos šalys.*

The article has been reviewed.

Received in March, 2012; accepted in June, 2012.