THE COMPOSITION OF PUBLIC EXPENDITURES ON ECONOMIC AFFAIRS IN CEE COUNTRIES AND ITS IMPACT ON ECONOMIC GROWTH

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Abstract: *The aim of this study is to investigate the composition of public expenditures on economic affairs for a group of CEE countries and its impact on economic growth. Even if the economic theory generally admits the positive impact of such expenditures, from the policy-making perspective the choices regarding the level and the composition of these expenditures are crucial, as these expenditures are under strong influences of a mix of political, institutional and macroeconomic factors. The existing empirical evidence does not provide clear answers to the question of which is the optimal structure for economic affairs expenditures. Using regression analysis for data over 1995-2012, we estimate the intensity of the correlations between these categories of public expenditures and economic growth. Our results show that growth is affected only by certain types of expenditures, with significant different intensities.*
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1. INTRODUCTION

The relationship between public expenditures on economic affairs and economic growth is largely debated in the economic literature, as many countries have tried to foster the economic growth and the development of the private sector through these types of expenditures. Even if the economic theory generally admits the positive impact of such expenditures, the size and the composition of public expenditure on economic affairs is a subject of great importance in the literature, as these expenditures are under strong influences of a mix of political, institutional and macroeconomic factors.

The importance of this subject was increasing in recent years, as many governments have tried to fight against economic crisis by increasing the allocations of financial resources for these expenditures. According to European Commission (2014),

since the recent economic crisis, many European countries have recorded significant differences in the level of public expenditure for economic affairs. Romanian government spent 8.3% of GDP on economic affairs in 2007, followed by a decrease of 2.1% of GDP in 2012 (down to 6.2% of GDP). In comparison, in Slovenia, public expenditure policy options were oriented toward increased financing of social security (18.9% of GDP) and spent only 3.9% of GDP on economic affairs.

The aim of our paper is to investigate the relationship between the categories of public expenditures on economic affairs and economic growth for a group of CEE countries (Bulgaria, Hungary, Romania, Poland, Estonia, Latvia, Lithuania, Czech Republic and Slovenia). As the existing empirical evidence does not provide clear answers to the question of which is the optimal structure for economic affairs expenditures, we use regression analysis to estimate the intensity of the correlations between each category and economic growth.

Section 2 of our research provides a survey of economic literature on this issue, while the next sections (section 3 and section 4) present data and the research methodology and a discussion of the results obtained. Section 5 contains the concluding remarks and recommendations for budgetary policy.

2. LITERATURE REVIEW

This section reviews briefly the literature on public expenditure on economic affairs and economic growth.

Most of the existing studies on the relationship between public expenditure on economic affairs and economic growth have shown that growth is strongly affected only by certain types of public expenditure. Public infrastructure, communication and information systems, government-funded research and development are the most often cited examples of publicly provided goods which contribute positively to aggregate production (Carboni & Medda, 2011). Infrastructure is indispensable to achieve the main development targets in developing countries such as urbanization, industrialization, export growth and sustainable economic development (Kim, 2006).

Specific types of economic affairs expenditures are found to be significantly correlated with economic growth especially in countries depending on a few sectors of the economy. It is the case of countries relying especially on agriculture or tourism, as leading sectors of economic development. For example, a study by Mapfumo *et al.*, (2012) point out the importance of agriculture as an engine of economic growth, over the period 1980-2009, for Zimbabwe. The contribution of agriculture to economic growth was also underlined by many other studies, such as Johnston & Mellor (1961), Gould (2013) and Chang (2009).

A few studies have examined the effects of public expenditures on transport and communication and economic growth. Among them, the seminal papers of Aschauer (1991), Aschauer (2000), Easterly & Rebelo (1993), Easterly & Levine (2001), followed by many others researchers, as Nurudeend & Usman (2010), Yamamura (2011) found out that transportation spending is an important determinant of long run economic

performance and infrastructure in transport and communication is consistently correlated with economic growth

On the other hand, Kustepeli *et al.,* (2008) investigated the effects of investments on highway infrastructure and the results from cointegration and causality analysis suggested a week relationship between highway transportation infrastructure, economic growth and international trade for selected countries.

The relationships between public expenditures on economic affairs and economic growth in CEE countries are only partially investigated. As far as we know, there are no studies focused only on the impact of public expenditures on economic affairs, such as agriculture, transport, communication, mining, manufacturing and construction, R&D in economic field and other economic affairs.

3. DATA AND METHODOLOGY

According to data provided by European Commission (2014), for the CEE countries analyzed, public expenditures on transport and communication was the largest category of consolidated central government expenditures on economic affairs (CGEA), equivalent to an average of 61.03% of total and 3.01% of GDP in 2012. High shares were recorded in 2012 in Poland (76.59% in CGEA, 3.6% of GDP), Czech Republic (66.70% in CGEA and 3.7% of GDP), Romania (3.39% of GDP and 64.67% in CGEA) and represented almost half of public expenditures on economic affairs in Lithuania (1.5% of GDP and 45.87% in CGEA), who has the highest share for the groups of agriculture and fuel and energy.

The next largest category was for agriculture, forestry, fishing and hunting, with an average for the CEE countries of 14.53% of in CGEA and 0.7% of GDP in 2012. The highest shares were recorded in 2012 in Lithuania (29.92% in CGEA and 1% of GDP) and Romania (19.92% in CGEA and 1.04% of GDP) and the lowest in Czech Republic (7.89% in CGEA and 0.4% of GDP) and Poland (9.84% of t TPE).

Public spending on general economic, commercial and labour affairs represented in average 14.40% of total expenditures for economic affairs and 0.7% of GDP in 2012. The governments of Latvia (30.04% in CGEA and 1.6% of GDP), Hungary (29.36% in CGEA and 1.8% of GDP) and Slovenia (20.57% in CGEA and 0.8% of GDP) spent more than the average, while Lithuania, Estonia, Czech Republic were below the average.

Spending related to coverage fuel and energy represented in 2012, in average, only 3.39% in CGEA, with the highest shares in Lithuania (10.71%), Czech Republic and Romania (6.02%) and the lowest in Bulgaria (0.08%). For the industries of mining, manufacturing and construction, the specific weights in CGEA were insignificant, with an average registered in 2012 of 0.85% for the CEE countries.

Table 1 The composition of public expenditures for economic affairs for CEE countries in 2012 (%)

Indicators/ Countries	BG	CZ	EE	LV	LT	HU	PL	RO	SI
General economic, commercial and labour affairs	16.52	8.48	7.74	30.04	3.27	29.36	6.81	6.79	20.57
Agriculture, forestry, fishing and hunting	18.29	7.89	15.27	9.70	29.92	8.36	9.84	19.92	11.55
Transport and communication	63.22	66.70	64.39	54.31	45.87	55.53	76.59	64.67	58.02

Fuel and energy	0.08	6.02	1.05	2.57	10.71	1.86	1.12	6.02	1.10
Mining, manufacturing and construction	1.13	0.64	1.03	0.81	0.78	0.62	1.50	0.72	0.37
R&D Economic affairs	:	3.07	4.52	0.02	0.00	3.06	1.23	0.5	2.90
Other expenditures	0.76	1.24	3.99	1.08	4.56	1.05	2.13	1.39	:

Source: Authors' calculations, according to data provided by European Commission, 2014

The last category is the one of R&D in the field of economic affairs, which represented in average 1.91% in CGEA in 2012, higher in Estonia (4.52% in CGEA and 0.2% of GDP) and much lower in Lithuania, Latvia and Romania.

Using a linear multiple regression we test whether public expenditures on economic affairs are associated with higher economic growth. Data for this analysis is annual and range from 1995 to 2012 for a group of CEE countries (Bulgaria, Hungary, Romania, Poland, Estonia, Latvia, Lithuania, Czech Republic and Slovenia), chosen mainly on the basis of data availability. Data for gross domestic product and public expenditures on economic affairs is drawn from European Commission (2014).

The equation is the following:

Equation (1): RGDP= C(1)*GEN +C(2)* AGR + C(3)* TRCOM + C(4)* IND + C(5)*Fuel+C(6)* R&D +C(7)* OTHER

The dependent variable is the real GDP growth rate, while the independent variables are the shares of each group of public expenditures on economic affairs in total public expenditures on economic affairs: general economic, commercial and labour affairs (GEN); agriculture, forestry, fishing and hunting (AGR); transport and communication (TRCOM); mining, manufacturing and construction (IND); fuel and energy (Fuel); research and development in economic field (R&D) and other expenditures (OTHER).

Our estimation might be affected by the composition of the panel, where each country has unique characteristics, such as cultural, political factors. Even if such factors are important for economic growth, they are difficult to measure and have not been taken into account in the present paper.

4. DISCUSSION OF RESULTS

Table 2 provides the results of testing the applicability of the multiple linear regression using the categories of public expenditure on economic affairs of a group of CEE countries for the period 1995-2012. The statistical program used is Eviews7 and the method chosen for the linear regression equation is the Pooled Least Squares method.

Table 2 Testing the applicability of the multiple linear regression model using categories of public expenditure for economic affairs in CEE countries for the period 1995-2012

Dependent variable: GDP			
Method: Pooled EGLS (Period weights)			
Period: 1995-2012			
Independent variables	Coefficients	Independent variables	Coefficients

GEN?	-0.104598* (0.023683) [0.0000]	Fuel?	-0.092057 (0.059815) [0.1284]
AGR?	0.095616*** (0.053965) [0.0808]	IND?	0.126339 (0.092004) [0.1741]
TRCOM?	0.055263* (0.011343) [0.0000]	Other	-0.207851*** (0.104332) [0.0503]
R&D?	0.230343*** (0.132470) [0.0865]		
R-squared	0.163627		
Adjusted R-squared	0.090899		
S.E. of regression	4.844965		
Sum squared resid	1619.685		

*Note: In () are standard deviations of coefficients; in [] are highlighted the associated probabilities; * - statistically significant to 1%; ** - statistically significant to 5%; *** - statistically significant to 10%*
Source: own calculations in Eviews7

Table 2 provides the regression results for the disaggregated public spending variables. Looking at the R-Squared indicator, we can see that the regression explains approximately 16 percentages of the variations in real output. According to these results, not all public expenditures on economic affairs contributed to economic growth, and those who did, had slightly different contributions, over the period between 1995 and 2012. The coefficients for fuel and energy and also for industry are not statistically significant to 10% and have not been introduced in the equation.

The regression equation is the following:

Equation (2): RGDP = -0.10*GEN+0.09*AGR+0.05*TRCOM+0.23*R&D - 0.20*OTHER

We found a positive correlation between expenditures on agriculture, forestry, fishing and hunting and economic growth, respectively an increase with one percentage point of this group of expenditure increases real GDP growth rate by 0.0956 (9.56%). The result is consistent with theoretical framework and empirical findings (Mapfumo *et al.,* 2012) for other developing countries. As data from table 1 proves, this category is very important for CEE countries, counting as the second largest category in CGEA. In CEE countries they recorded a downside trend in last 20 years, as the market-based mechanisms were created in this sector. They seem to stabilize at current levels and remain very important due to the still low performance of the private agricultural sector. For example, in Romania, the share of agriculture and forestry in total expenditures on economic affairs has registered significant changes: an increase from 36.53% in 1995, to 47.10% in 1997, followed by a sharp decline to 31% in 1999 and to 19.9% in 2012. Because of their largest potential impact on economic growth, we strongly support an increase in their funding, especially on those sectors with export potential.

Another positive correlation was found for transport and communication expenditures (0.05), which is lower comparing to the coefficient found for agriculture. Looking at the quality of infrastructure, according to The Global Competitiveness Report (Schwab, 2013, p. 432) we found not so high values for this indicator: 5.2 weighted average in 2012-2013 (1-worst, 7-best) for Estonia and Slovenia, 5.1 for Czech Republic in 2012-2013, 3.4 average value for Romania and 4 for Poland. Looking at the share for these expenditures (Table 1), we think that these expenditures were over-funded and future measures are needed to provide an optimal allocation for this sector. For example, Romania spent 64% of total expenditures on economic affairs on transport, but it ranked 106 in a sample of 148 countries and also had the last rank at European level and among the group of CEE countries. We strongly support the rule of efficiency in funding this category of public expenditures, as a solution to the budget crisis and the need for active policies for increasing economic competitiveness.

The highest positive coefficient was found for R&D expenditures (0.23) and the result is similar with other empirical findings for developing countries (Bose *et al.,* 2007). Looking one more time at Table 1, we think that R&D expenditures were underfunded over the period analyzed (less than 1% of the total expenditure for economic affairs in Latvia, Lithuania, Romania). We believe that budget policies in CEE countries should focus on significant increase in R&D expenditures, in-line with the objectives of the EU Treaty, of strengthening the scientific and technological bases of Community industry and encouraging it to became more competitive at international level (European Commission, 2006, p.4).

The relationship between other public expenditures for economic affairs and gross domestic product (GDP) has been identified as a negative one (-0.20). This category includes administration, operation or support activities relating to other industries, general and sectored economic affairs, which cannot be assigned to others categories of economic affairs. Further investigation is needed to decompose the aggregate correlation to the specific components of these expenditures.

We also found a negative correlation (-0.09) between fuel and energy expenditures and gross domestic product, but the result is not statistically significant. The results could be explained by a significant reduction in financing these public expenditures over the period analyzed for the selected CEE countries, as a response to financial crisis (Dornean, 2012). The relationship between real GDP growth rate and industry has been identified as a positive one (0.12), but it is not statistically significant. The positive correlation can be assigned to their general impact on aggregate demand.

5. CONCLUSIONS

This paper investigated the relationship between the composition of public expenditures on economic affairs and economic growth in a group of CEE countries.

Based on the model, our empirical results suggest that the category with the highest positive coefficient of correlation with economic growth is is R&D. Expenditures on transport and agriculture, forestry, fishing and hunting were found with lower positive

coefficients, while for fuel, other expenditures and general economic, commercial and labour affairs, the relationships with real GDP growth rate are negative.

Based on the comparison between the composition of economic affairs expenditures and the results of regression analysis we suggest significant increases in funding agriculture and R&D expenditures, and a more efficiency- oriented funding for all expenditures, especially for transportation. In what concerns industry, public financial support in CEE countries should focus mainly on the development of the small and medium sized enterprises, due to their high potential for job creation.

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