INTERCONNECTIONS BETWEEN THE ECONOMIC STRUCTURE OF LOCAL SPENDING AND ECONOMIC GROWTH IN ROMANIA

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Abstract: *The issue of the effects of government interventions, explicitly of the taxes and expenditures of local public authorities, has generated substantial debate over time, and still gives rise to numerous controversies in theory and practice. Following the Keynesian path of reasoning, it is, at least theoretically, admitted that it is possible to influence the socio-economic activities and support for economic growth by means of government spending, but different other factors act towards enhancing or, on the contrary, impeding the achievement of the desired effects. From this point of view, the delimitation of competences and public expenditure responsibilities between different levels of government raises the issue of some possible different effects of the central and local governments' interventions. As the macroeconomic stabilization function is usually associated with central governments, and the contribution of local governments often is of lesser importance, less attention is paid to the effectiveness of local administrative actions. In such a context, the paper aims to empirically evaluate the effects of the economic structure of local public expenditures on the local (territorial) economic growth in Romania, over the period 2007 to 2012. The analysis has been conducted at the level of the 42 Romanian counties and on annual data collected from both international and national sources (World Bank, INSSE, The Romanian Ministry of Regional Development and Public Administration).The general method of estimation is the fixed effects estimation technique for panel data models. Our empirical approach is of absolute novelty, especially for Romania, where previous empirical studies have been focusing on the assessment of the overall effects of general government spending. The main findings of our study are that local public expenditures have a negative impact on territorial economic growth, confirmed both for overall expenditures and for various structural components (given the economic structuring of local spending). Striking appears to be the negative impact of the interest payments on local public debt, which calls for the improvement of local government debt management and the selection on the basis of efficiency criteria of local investment projects, in many cases financed by debt issuing. At the same time, the very significant negative impact of social expenditures, currently mandatory expenditures of local governments, draws attention to the need to reconsider public policies and the relationships between different public budgets. Our findings also confirm the unproductive character of local transfer and goods and services expenditures, for which the results are to be interpreted as an alert signal to Romanian local authorities.*

Keywords: local public spending; economic structure; interest expenditures; local economic growth; Romanian counties; fixed effects estimation

JEL Classification: H72; O40

1. Introduction

The issue of the degree and pace of economic development of a statal community, exacerbated in times of crisis, is generally associated in political and scientific debates with central authorities and their revenues and expenditures implicitly, as a result of assuming the "musgravean" vision on public authorities' role and the assignation of responsibilities to different administrative tiers. At the same time, however, the real issues of development are confined and express their effects at territorial level, against the background of some inherent disparities of economic potential and development, requiring, in practice, for the local policy-makers to act as agents of development, and for the scientific community to document and analyze their effective contribution to economic growth. Under these conditions, a core research problem becomes that of investigating the specific interconnections established between local public interventions and economic growth, namely of identifying the linkages and the extent to which local public expenditures are contributing to economic development, complemented or with the support of central governments' spending.

The aim of our paper is to identify and analyze, considering the accepted theoretical background, the links established between local public spending (in economic structure) and local economic growth, assuming that local expenditures' prioritization is carried out in accordance with the attribute of local autonomy and, implicitly, with the real development needs of subnational communities.

The relevant research papers in this field are generally seeking, in line with the above-mentioned perspective, to analyze the impact of general or central government expenditures on economic growth, especially focusing on determining whether they are productive or unproductive, while the issue of the effects of local public spending is almost never distinctively approached, and the results are not uniform ones. Thus, Baro (1990, 1991) finds evidence for a positive correlation between public expenditures and long-term economic growth, and his results are confirmed by other studies, such as Easterly and Rebelo (1993) for public transport and communications expenditures, Gramlich (1994) for public infrastructure expenditures, Alexiou (2009) for capital spending and Wu, Tang, and Lin (2010), with some reserves concerning low-income countries. Also, Morrison and Schwartz (1996) find that public expenditures with investments in infrastructure create significant direct benefits for manufacturing firms and lead to the increase of productivity, as source of global economic growth. At the same time, some other studies fail to confirm a positive correlation between public spending and economic growth, or find evidence only for a very weak correlation, like that of Kormendi and Meguire (1985), Levine and Renelt (1992), Slemrod, Gale and Easterly (1995) Agell, Lindh and Ohlsson (1997). Moreover, other papers (Landau, 1986; Scully, 1989; Evans and Karras, 1994) find the presence of a negative correlation.

Considering the most common views and results found in literature, the assumptions on which we intend to check are: local government expenditures with public employees and goods and services are not generating local economic growth; the interest payments on local public debt adversely affect local economic growth; social welfare spending, as transfer and also mandatory expenditures, do not influence local economic growth; local capital expenditures have a positive contribution to local economic growth.

2. Some Stylized Facts About Local Government Expenditures in Romania

The average amount of local public spending of Romanian counties is a small one (below 10% of local GDP), perhaps even contradictory to the general trend towards decentralization and local autonomy strengthening, highly supported in public discourses and policy-making. As can be seen in Figure 1, over the period of our analysis the average ratio of counties' local expenditures to GDP failed to exceed 10% even though, since 2009,

the expenditures from external grants have been introduced into local budgets, and their share exceeded 1% of GDP over the last two years (2011-2012).

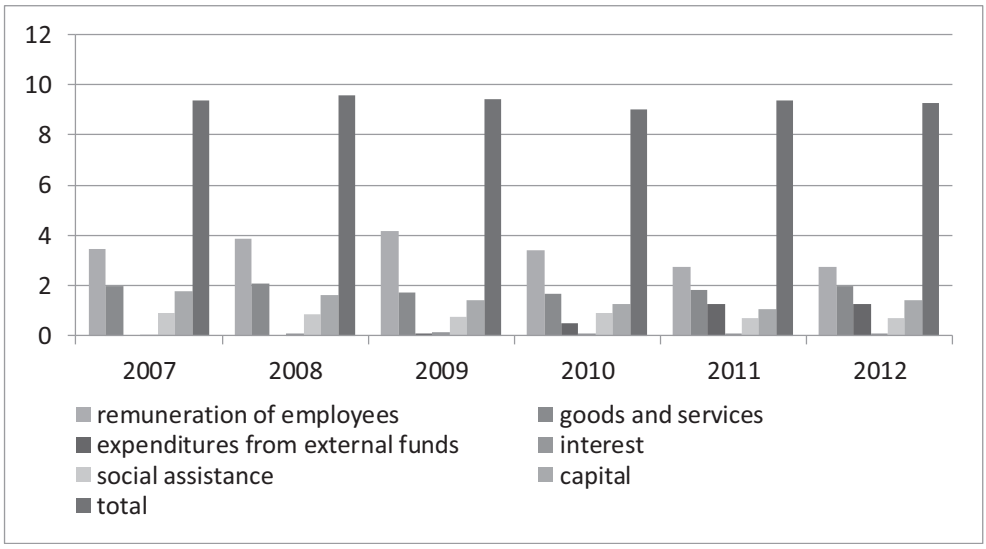

Figure 1: Average local public expenditures for the 42 Romanian counties (% of local GDP)
Source: authors' calculations, data from the Romanian Ministry of Regional Development and Public Administration (2015) and INSSE (2015)

With regard to the economic structure of these expenditures, the compensation of public employees component best explains the overall trend highlighted in Figure 1, recording a reduction from 4.17% of GDP in 2009 to 2.72% in 2012. The main measures with incidence on this dynamics, approved under the need for budgetary consolidation in the context of the financial crisis, are those concerning public layoffs and salary cuts (with 25%) with effects since 2010. A similar downward trend is found in the case of local public spending on goods and services, with the sole difference that they have resumed their growth trend in 2011.
The interest payments on local public debt, which have a fairly low share in overall local budgets expenditures, have not experienced significant changes over the period of our analysis. An important effect of the crisis, resulting from the contraction of local economic activity and tax base, is the reduction of the real (effective) indebtedness capacity of local communities. Together with the revision of the conditions and authorization procedure for local borrowing initiated by central authorities, this allowed only for a limited growth of local government debt.
Amid restraining economic activity, the need for social assistance benefits grew causing the increase of corresponding local expenditures in 2010. However, the issue of their sustainability over time drew attention to the need for a revision, which resulted in a subsequent reduction of these expenditures.
Significant also appears to be the evolution of local capital spending, whose growth occurred very late (only in 2012), pointing to a delayed reaction of public authorities to the crisis at the level of local communities.

Table 1: Total local public expenditures by counties (% of local GDP)

County	Year		County	Year	
	2007	2012		2007	2012

Alba	7.60	8.07	Hunedoara	8.18	8.44
Arad	7.46	8.11	Ialomita	10.54	7.64
Arges	7.12	8.09	Iasi	9.19	8.24
Bacau	9.54	10.15	Ilfov	6.40	6.57
Bihor	8.36	9.64	Maramures	10.19	9.44
Bistrita-Nasaud	8.89	12.12	Mehedinti	10.87	14.63
Botosani	12.51	14.88	Bucuresti	6.22	5.06
Braila	8.08	9.64	Mures	8.79	9.01
Brasov	6.49	10.48	Neamt	10.55	11.45
Buzau	10.48	8.68	Olt	11.48	10.10
Calarasi	12.24	9.66	Prahova	7.31	7.27
Caras-Severin	9.09	9.84	Salaj	10.10	10.90
Cluj	6.33	6.21	Satu-Mare	9.82	10.15
Constanta	6.96	6.71	Sibiu	7.88	7.54
Covasna	8.79	9.65	Suceava	10.81	13.00
Dambovita	8.40	8.09	Teleorman	10.79	9.59
Dolj	8.73	8.72	Timis	6.52	6.90
Galati	9.60	9.04	Tulcea	11.94	9.84
Giurgiu	13.63	9.90	Valcea	9.80	10.29
Gorj	7.30	6.66	Vaslui	16.17	12.79
Harghita	9.77	9.97	Vrancea	12.57	10.17

Source: authors' calculations, data from The Romanian Ministry of Regional Development and Public Administration (2015) and INSSE (2015)

The data in Table 1 highlight significant differences and interesting situations at territorial level (the ratio of local spending to GDP ranged between 5.06% in Bucharest in 2012 and 16.17% in Vaslui in 2007). These shares can be considered the expression of high intra-regional (between counties) development disparities, which is a notorious problem for Romania. To confirm this, we can notice that the most consistent shares of local public expenditures belonged to the least developed counties (e.g. Vaslui, Botosani, Giurgiu), while the most developed ones (Bucharest being the most notorious case) recorded the lowest shares.

3. Data and Methodology

Our paper analyzes the effects of local governments' public expenditures on territorial economic growth for a panel of 42 Romanian counties, over a period of 6 years (2007-2012). The data have been collected from both international and national sources, namely World Development Indicators database (World Bank, 2015), Tempo-online database (INSSE, 2015) and "The situation of the execution of the revenues and expenditures of local budgets for territorial-administrative units (2000-2012)" (The Romanian Ministry of Regional Development and Public Administration, 2015).

The model is a standard growth regression model, where different types of local public expenditures were included as explanatory variables for local economic growth, as depicted in equation (1).

$$gdp_{i,t} = \alpha_i + \beta_1 GDP_{i,t-1} + \beta_2 pop + \sum \gamma_j X_{j,i,t} + \sum \delta_k Z_{k,t} + \rho_p Ch_{p,i,t} + \vartheta_i + \varepsilon_{i,t} \quad (1)$$

Where:

- *i* refers to the county ($i = \overline{1,42}$)
- *t* refers to the year ($t = \overline{1,6}$)
- *gdp* is the dependent variable (the local GDP per capita growth rate)
- *GDP* is the natural logarithm of the local GDP per capita

- *pop* is the population growth rate
- X_j is a set of county-specific control variables (local variables)
- Z_k is a set of country-specific control variables (macroeconomic variables)
- Ch_p is a set of local public expenditures variables
- $\beta_1, \beta_2, \gamma_j, \delta_k, \rho_p$ are the coefficients of the explanatory variables
- α is the constant term
- v_i are the county-specific intercepts
- $e_{i,t}$ are the observation-specific errors

In our model, the dependent variable is represented by the local GDP per capita growth rate, at the level of Romanian counties *(gdp).* As explanatory variables we considered the lagged value of the natural logarithm of local GDP per capita *(L.GDP),* the growth rate of the population of each county *(pop),*several local public expenditures variables, expressed as % of local GDP (total local expenditures *(ch_tot)*; local expenditures with public employees *(ch_empl);* local expenditures with goods and services *(ch_goods);*local expenditures with interest payments on local public debt *(ch_interest);*local expenditures with social assistance *(ch_socasist);* local public capital expenditures *(ch_cap)*), as well as some county-specific and macroeconomic control variables.
The selection of control variables was performed considering relevant studies on the determinants of economic growth. Also, for the county-specific control variables, the availability of data played an important role. Therefore, our model includes two county-specific control variables (the gross investments in local units in industry, constructions, trade and other services, expressed as % of local GDP, as proxy for local private investments*(invest),* and a variable expressing local infrastructure development, determined as the geometric mean of the density - the length per square kilometer of land - of railway lines and highways *(infras)*)and four macroeconomic control variables (the sum of imports and exports as % of GDP, for the degree of openness of the economy *(exp_imp),* the real effective exchange rate index *(exch),* the real interest rate *(interest)* and inflation measured by the GDP deflator*(infl)*).
Given the quite high number of cross-sectional units (42 counties) and the issue of heterogeneity, the fixed effects estimation technique for panel data models was selected. The results of the Hausman test confirmed that the fixed effects estimation technique is to be preferred to random effects. As the results of the modified Wald test for groupwise heteroskedasticity in fixed effects regression models rejected the null hypothesis of homoscedasticity, we used Huber/White estimators to control for heteroskedasticity.

4. Results and Discussions

The results of our regression analysis are presented in table 2. In model (1) the total amount of local public expenditures of each county is included as explanatory variable, while in model (2) different types of local public expenditures (by economic structuring) are considered as independent variables, along with other county-specific and macroeconomic determinants of local economic growth rates.

Table 2: Results of regression analysis for per capita local GDP growth rate

	Model 1 (total local public expenditures)		**Model 2 (local public expenditures - economic structure)**	
L.GDP	-99.68086***	(-12.17)	-96.20451***	(-14.22)
pop	-0.2913205	(-0.20)	1.095438	(0.77)
ch_empl	-		**-10.82082*** **	**(-4.39)**
ch_goods	-		**-10.27562*** **	**(-5.03)**

ch_interest	-		**-19.54373****	**(-2.26)**
ch_socasist	-		**-7.310706*****	**(-3.47)**
ch_cap	-		**-1.181482**	**(-1.18)**
ch_tot	**-4.929423*****	**(-7.09)**	-	
invest	-0.0107211	(-1.13)	0.010647	(1.07)
infras	40.27132	(0.69)	52.89276	(0.93)
exp_imp	2.445433***	(13.10)	2.011415***	(11.31)
exch	-1.511006***	(-9.01)	-1.793403***	(-11.17)
interest	5.82529***	(10.62)	7.041235***	(10.18)
infl	6.845844***	(12.93)	8.762787***	(12.13)
cons	904.9896***	(10.45)	930.0719***	(12.49)
N	252		252	
R-squared	0.8727		0.8905	

Notes:
heteroskedasticity-robust standard errors (Huber/White estimators)
t statistics between parentheses
$*$ p < 0.1, $**$ p < 0.05, $***$ p < 0.01
Source: authors' calculations using Stata

Our estimation results indicate a negative impact for both total local spending and different structural components (considering the economic structuring of public expenditures), the extreme case being that of interest payments (their negative effect is double the one of some other expenditures, such as with the remuneration of public employees or with goods and services).
Regarding the expenditures with the remuneration of public employees, our study confirms the initial hypothesis of a negative impact on local economic growth, and the recorded value of the coefficient of this explanatory variable shall be, in our opinion, interpreted as a signal of alert to public policymakers. It is reasonable to accept that an oversized local government sector can have, over the long run, a negative impact on local economic growth, by redirecting an increased volume of financial resources to local spending as those with the salaries of public employees. For public policy, the signal should be to carefully reconsider and rationalize the amount of such expenses and their share in overall local budgets spending, in relation to other kind of local expenditures, and the optimization of the public personnel structure should be the starting point.
Similar results are found in the case of local spending with goods and services, the negative effects identified (that confirm the hypothesis of our study) being very close to those of local spending with public employees. The explanation stems from the fact that the volume of these expenses, in principle correlated with the current needs of physical maintenance of the local government sector, reflects either an oversized administrative apparatus in relation to the actual needs of the local community, or an excess of procurements in relation to the real needs. For the Romanian counties and the period under study, the result is extremely relevant, at least partially confirming the notorious criticism on the effectiveness of local authorities' procurement system or on the lack of concern for the rationalization of public administrations' consumption. As policy recommendation, it is necessary to design and enact by law rational standards of local expenditures, in order to minimize the above mentioned negative impact and foster long-term economic growth.
An extremely sensitive situation is that of the interest payments on public debt, the costs associated with local borrowing being, by nature, unproductive ones, thus requiring for a careful management. The estimated coefficient of this explanatory variable validates the hypothesis of our study, pointing to a very significant negative impact of interest expenses on the local economic growth rate for the case of Romanian counties. This raises the issue

of ensuring a more efficient use of borrowed resources to offset this negative impact. Unfortunately, the effects of capital expenditures (according to national regulations, local borrowing should be used only to finance public investment projects or for debt refinancing purposes) on local economic growth are found to be negative and, even if of low intensity, it is necessary to pay greater attention to the prioritization of expenditure projects and investment selecting. From this point of view we should notice that, although Romanian local authorities consistently invoke efforts or results regarding local infrastructure modernization, theoretically associated with a positive impact on economic growth, the actual investments (construction of sports halls, repairs of schools, inter-county roads used mostly by locals etc.) are not effectively materialized in facilities that encourage economic activities in the respective jurisdictions, although they could prove to have a positive impact on the longer term.

For Romania, the question of social assistance expenditures is often identified as problematic in the literature, in the sense that the benefits paid are not conveniently systematized and do not realistically support the strengthening of beneficiaries' incentive to work. The negative impact on economic growth we have identified is significant and should be treated as an alert signal for public authorities and policies (that should be consequently reconsidered). In this regard, we find questionable the effective procedure of social assistance funding, the eligibility of beneficiaries being locally established, while the necessary financial resources are transferred from the state budget (mandatory spending). An eventual shift to local budgets of the social assistance financing responsibilities, accompanied by the corresponding assignment of new income sources, could raise the responsibility of local decision makers and reduce the negative impact of these expenditures on economic growth.

5. Conclusions

The analysis we have conducted on the effects of local public expenditures on economic growth at territorial level, for the case of Romanian counties and over the period 2007 to 2012, revealed a substantial negative impact. This is mostly determined by the negative effects of local spending with the remuneration of public employees and goods and services. Although the interest payments on local public debt were found to have a greater negative impact than the above categories (given the almost double value of the estimated coefficient), their reduced share in overall local budgets expenditures diminishes their actual effect.

Striking and inconsistent with our expectations was the negative impact found for capital expenditures, proving the imperative of focusing on investment projects selecting and on increasing their efficiency. Also, the negative impact found in the case of social assistance expenditures calls for the reconsideration of their funding procedure when designing public policies.

However, the results of our empirical analysis should be assessed with caution, as some distortions may be induced by the quite small time framework (resulting from the lack of comparable data). At least for the case of capital expenditure, an analysis of the impact on medium and long-term local economic growth should be conducted to complement short-term analysis. As future research direction we intend to achieve this aim, as new data will become available.

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