Local Government in Slovenia: Structure, Size, and Expenditures

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The purpose of the paper is to investigate the relationship between the size and expenditures of local government in Slovenia. There is only one tier of local government in Slovenia. Municipalities differ substantially in their size, spending activities and in other socio-economic characteristics. Consequently, this gives opportunity to assess the relation and the effect of size on per capita expenditures of municipalities, which could be either linear (positive, negative) or non-linear (U-shaped, inverted U-shaped). The empirical evidence suggests that linear negative effect of municipal size on per capita expenditures of Slovenian municipalities could be observed, which means that findings speak in favour of policy implications that foster municipal amalgamation.

Key words: local authority, local government finances, municipal expenditures, optimal municipal size, Slovenia

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Introduction

The appropriate creation and size of local jurisdictions, as well as their financing system are important for achieving efficiency gains in the provision of local government goods and services. In general, one could claim that local provision of goods and services is useful, although in practice its optimal scope must be found, to efficiently combine scale and congestion effects in order to minimise local authority costs (or maximise efficiency). Consequently, this paper has three purposes. The first one is to describe the organisation of local government in Slovenia. The second one is to describe local government financing system in Slovenia, whereas the third one focuses on theoretical background and empirical evidence of the relationship between the size of local government and its efficiency, where the effect of municipal size (measured in terms of population) on per capita municipal expenditures (unit's costs) is examined. The paper is organised as follows: Chapter 2 gives a brief overview of local government organisation and its basic characteristics in Slovenia. Chapter 3 continues with the presentation of the local government financing system in Slovenia. Chapter 4 presents bibliography review on the local government formation, size and efficiency. Chapter 5 describes the empirical analysis on the effect of municipal size on per capita expenditures, its methodology and main findings. The paper ends with brief concluding reflections and potential policy implications, and the list of references.

Local Government System in Slovenia

Currently, there are 211 municipalities in Slovenia.[1] Out of that number, 11 are so-called urban municipalities (towns), which have a special legal status. Namely, they also perform tasks delegated to them by the central government involving town development (urbanism, etc.). Technically (Local Self-Government Act stipulations), municipalities with so-called urban status must have more than 20,000 residents, at least 15,000 jobs, and they should also be economic, social, and cultural centres of specific geographical regions, which means that they should have hospital(s), the-

[1] The number of municipalities increased from 58 in 1995 to 211 in 2011. Although 212 municipalities should exist, one municipality has not started to operate yet due to certain legal and administrative reasons.

atres, secondary schools, that having colleges is desirable, etc.[2] It is worth noting that there are large differences in the size of municipalities (see Table 1),[3] and there is no intermediate level of local government (counties or regions).

Table 1: Municipalities in Slovenia by the number of residents, 2009[4]

	≤ 1,000	1,001–5,000	5,001–10,000	10,001–20,000	20,001–50,000	> 50,000
Number	7	103	47	36	13	4
% of all	3,3	49,1	22,4	17,1	6,2	1,9

Source: Statistical Office of Slovenia, 2011; author's calculations.

Moreover, data presented in Table 2 indicate that municipalities in Slovenia differ substantially in terms of municipal spending activities, size and population structure, and in economic activity. Namely, an overview of statistics indicates that average per capita expenditures of Slovenian municipalities amount to €1,141 per year, although those expenditures may vary from €161 to € 3,911 in some municipalities. Nevertheless, statistics also indicates that municipalities in Slovenia differ substantially in terms of municipal size and population structure, and in economic activity. Namely, average yearly gross salary varies from approximately €8,800 to

[2] In particular, there is a special law on the capital city in Slovenia (Capital City of the Republic of Slovenia Act, 2004 – last amended in 2009, CCA), which stipulates that Ljubljana is the administrative centre of Slovenia and specifies tasks needed to ensure the functioning of the city serving as a capital.

[3] The largest municipality has almost 280,000 residents, whereas the smallest has only slightly more than 300 residents (data from 2009). Legal provisions actually state that a municipality should have at least 5,000 inhabitants (see the Local Self-Government Act, LGA), although the data indicate that more than 50 per cent of existing municipalities do not meet that criterion. The reason for this lies in the fact that many of them tended to be established for political reasons or exceptionality clause on historical, economical and other reasons (legally) justifying the smaller size of particular municipality was often used (Oplotnik and Brezovnik, 2004). Besides, the same authors have also argued that cooperation and cost-sharing between municipalities is very small, since municipalities are not obliged (and consequently have no incentives) to do that.

[4] The data refer to 2009, which means that all 210 municipalities are analysed, including the capital city Ljubljana. In 2011, 211th Slovenian municipality emerged (Mirna). According to statistics, this municipality has approximately 1,400 residents, which is also below the number required by legal provisions.

€22,200, whereas average unemployment rate varies from 3.7 per cent to 24 per cent. Nonetheless, there are substantial variations in the population density (e.g., ranging from 5 to more than 1,000 residents per square kilometre), as well as in the share of senior citizens (e.g., ranging from 12 per cent to almost 27 per cent of municipal population) and young population, which altogether supports the thesis of considerable differences between municipalities.

Table 2: An overview of basic characteristics of Slovenian municipalities, 2009

	Mean	Min	Max
Total municipal expenditures per capita (€)	1,141	161	3,911
Average gross salary per annum (€)	15,114	8,820	22,287
Average unemployment rate (%)	9.8	3.7	24.0
Population (in 1,000)	9.725	0.320	278.314
Population density per squared km	113	5	1,019
Share of population above 65 (%)	16.47	12.06	26.89
Share of population below 15 (%)	14.41	8.21	20.78

Source: Statistical Office of Slovenia (2011), Ministry of Finance (2011), author's calculations.

The System of Municipal Financing in Slovenia

According to the LGA (2007), municipalities perform local tasks of public interest in order to meet the needs of their residents. Specifically, municipalities manage the municipal assets and organise municipal administration, develop conditions for economic development of the municipality, provide spatial development plans and create conditions for housing, manage and regulate local public utilities and the provision of local public services, provide social services (in particular pre-school and primary school education, social, cultural and recreational activities etc.), maintain local roads, fire safety etc. Table 3 summarises expenditures of Slovenian municipalities by function.

Table 3: Consolidated expenditures of Slovenian municipalities, 2009 (percentage)

Public administration	19.2
Defence	0.2
Public order	1.9
Public utilities	23.4
Environment protection	9.3
Housing and spatial development	8.1
Health care	0.7
Recreation, culture and activities of NGO's	10.9
Education	21.7
Social security	4.6

Source: Ministry of Finance (2011) and author's calculations.

In contrast, municipalities in Slovenia obtain their money from tax revenues, non-tax revenues, capital revenues, donations, transfers and EU funds. Specifically, Act on Local Finances (2008, ALF) stipulates that municipalities finance their activities from four major groups of revenues – their own tax revenues (revenues from inheritance and gift taxes, property taxes, taxes on real estate business transactions, shared 54% of personal income tax paid by municipal residents,[5] etc.); other municipal revenues (administrative fees and duties, concession duties and municipal communal rates, environmental duties, revenues from the management of municipal property, donations, transfers from the central budget, etc.); municipal duties (i.e., compensation fees for the use of municipal land, etc.); and borrowing (the amount is limited by law).

[5] In fact, shared personal income tax is the single most important revenue source for municipalities. According to administrative and legal provisions, the appropriate amount of income tax is weekly transferred to municipalities from the central budget.

Table 4: Consolidated revenues of municipalities in Slovenia, 2009 (percentage, borrowing and financial investments excluded)

Tax revenues	63.6
Non-tax revenues	12.5
Capital revenues	4.8
Donations	0.2
Transfers	18.8
EU funds	0.1

Source: Ministry of Finance (2011) and author's calculations.

The ALF (1998) introduced a system of appropriate expenditure in order to allow municipalities to carry out their constitutional and legal responsibilities. According to this system, last amended in 2007 fiscal year (ALF, 2006),[6] appropriate expenditure is calculated on the basis of a special equation, which includes correctional factors for diversity in municipalities for the purpose of achieving equalisations (compared to national average), such as the size of municipality, the number of residents, the number of residents aged below 15 and above 65 and the length of local roads. Specifically, the formula for calculation of the appropriate expenditures is as follows:

[6] Basically, the model of calculation of i-th municipality's appropriate expenditure has been amended in the sense that weights of correctional factors have been changed and the average municipal costs per capita needed for financing of their tasks has been introduced as a basis for appropriate expenditure calculation. Several problems of the old system were the reasons for amending the act. For instance, the old system of financing pressures for the establishment of new municipalities, since the system was particularly in favour of smaller municipalities as the principle of financial equalisation provided reasonable financial sources for economically disadvantaged municipalities, too (Rop, 2006). Moreover, financial equalisation caused disincentive effects on the mobilisation of municipal own revenues, and it also provided disincentive effects on the promotion of developmental issues in municipalities (Government Office of Local Self-Government and Regional Development, 2006). Consequently, municipalities' financial autonomy almost disappeared, and the aim of the amendments was to reduce the dependency of municipalities on financial equalisation in order to achieve their greater autonomy. Finally, there were relatively large differences in appropriate expenditure valuation between municipalities, combined with relatively large dependency on resources derived from income tax. This has ultimately led to the existence of overspending bias.

$$PPi = (0.61 + 0.13*Ci + 0.06*Pi + 0.16*Mi + 0.04*Si)*P*Oi,$$

where PPi is appropriate expenditures of municipality, Ci is the ratio between the per capita length of local roads in an individual municipality and the per capita length of local roads in Slovenia, Pi is the ratio between the per capita surface area of an individual municipality and the per capita surface area of Slovenia, Mi is the ratio between the share of population under the age of 15 in the population of an individual municipality and the average share for municipalities in Slovenia, Si is the ratio between the share of persons over the age of 65 in the entire population of an individual municipality and the average share for municipalities in Slovenia, P is average expenditures per capita (necessary funds to perform legal and constitutional tasks, determined each fiscal year), and Oi is the number of residents in the municipality.[7]

The LGA (2007) stipulates that municipalities must raise their own revenues.[8] Financially disadvantaged municipalities, unable to fully perform their duties, are eligible to receive additional financial assistance from the state in accordance with the principles and criteria prescribed by law. This actually means that municipalities, where their own resources may not be sufficient to finance the provision of services that a municipality is obliged to deliver, are eligible to receive special financial equalisation from the central government budget.[9] There are both economic and social rationales for introducing financial equalisation, such as the relatively small size of municipalities, limited scope for user-charging due to the potentially negative social impacts and high collection costs, not to mention the directives of the European Charter of Local Self-Government (1985,

[7] This formula is determined (calculated) by the Ministry of Finance (MoF) for each fiscal year.

[8] Besides, the Law also prescribes the appropriate revenues of a municipality in order to finance its appropriate expenditures. These revenues are the basis for determination of the amount of shared personal income tax eligible for certain municipality, and are determined by the MoF for each fiscal year. Specifically, appropriate revenues of the municipality are determined with equation Gli = Oi*Gl*(0.3 + 0.7* Iro), where Gli represents appropriate revenues of the municipality, Oi is the number of residents in the municipality, Gl is average appropriate expenditures per capita, and Iro is the index of municipal diversity (calculated with the formula Iro= PPi/ (Oi*Gl)). Moreover, municipalities may use extra revenues if Gli exceeds PPi, yet the limitation exists if Gli exceed PPi by more than 15 per cent – in that case, only 50 per cent of extra money can be used by the municipality.

[9] Put differently, municipalities with insufficient municipal revenues to finance municipal appropriate expenditures, receive additional revenues in order to be able to perform their duties (see ALF, 2008). Mathematically, this means that Gli is less than PPi (see previous footnote).

ECLSG), whose Article 9 supports the institution of financial equalisation that ought to correct the effects of unequal distribution of potential financial sources and burdens of local authorities.[10] On aggregate, financial equalisation amounted to approximately €54 million in 2009, which is not much when compared to total revenues of municipalities, although 191 municipalities received that kind of central government support (Ministry of Finance, 2010).[11]

Literature on Local Government Size and Efficiency

Oates (2005) has summarised that there are two distinct generations of fiscal federalism theories. The first-generation theories basically envisaged that local governments should have competitive advantage in the provision of local public goods.[12] Among several first-generation approaches, two most important should be stressed.[13] First approach is based on Tiebout's (1956) theory, which is based on the premise of "voting with feet", meaning that voters select local jurisdiction where their individual preferences in tax and service mix are best met. In this context, this should induce competition between local jurisdictions for taxpayers and finally result in more efficient provision of public services. The second approach is based on the competing theory and states that excess fragmentation of government leads to inefficiencies in the provision of local public serv-

[10] More on the financial equalisation see also Bailey (1999).

[11] The new system substantially decreased the number of municipalities receiving financial equalisation as well as the total amount of financial equalisation. Namely, throughout the period 1999-2006, the number of self-financed municipalities substantially decreased, and consequently only 17 municipalities did not receive financial equalisation in 2006, which amounted to almost €190 million according to the MoF (2010) data. The sudden increase in the number of municipalities receiving financial equalisation in 2009 could be in part attributed to the economic slowdown, which was particularly severe in Slovenia. Namely, municipal financing largely depends on income tax as a revenue source and this tax has very important cyclical component.

[12] Nevertheless, this theory still recognises the competitive advantage of central government in the provision of national public goods as well as in the implementation of redistributive and stabilisation policies. Actually, the main focus of the research in those theories was on the assignment of functions to the different levels of government.

[13] It should be stressed that the hypotheses of the first-generation theories are much broader as they, e.g., also analyse the issues of local taxation, hard budget constraints etc.

ices, such as various duplications, problems in achieving economies of scale etc.[14] In short, this view can be put in the context of Oates' (1972) decentralisation theorem, which states that the trade-off of decentralised government structure is between lost economies of scale and problems with internalisation of externalities and spill-over effects on the one hand, and better matching of services levels to preferences on the other.[15]

Nevertheless, the first generation theories neglected the important contributions to the theories of fiscal federalism developed by public choice theory. These contributions mainly concentrate on the behaviour of politicians and political process as well as on the problems of information (Oates, 2005).[16] For instance, the models have dealt with the issues of political accountability at the local level (Seabright, 1996), differences in preferences of median voters across local jurisdictions (Besley and Coate, 2003),[17] forms of fiscal decentralisation (Rodden, 2006),[18] etc.

Regarding the outlines of first-generation approaches, local provision of goods and services should have both advantages and disadvantages. Specifically, the literature portrays several potential advantages of local pro-

[14] In fact, the main differences between two approaches, according to Garzarelli's (2004) taxonomy, are related to the use of organisational approach and application of motivation for federalism – second-generation theories should use organisational approach in the analysis, and both knowledge and incentives should represent main motivation for federalism.

[15] Specifically, Konishi (2009) contemplates that centralisation is more viable if the efficiency gains from internalisation of cross-jurisdictional spill-overs outweigh the losses from uniform policy-making.

[16] See the author for the comprehensive overview of the theories.

[17] For instance, those two authors have argued that centralised structure of government is preferred when the public good preferences of the median voter are similar across local jurisdictions and spill-over effects are large.

[18] In fact, Rodden (2006) has argued in his revision of Hamilton's paradox that a negative effect of decentralised government finance is associated with the moral hazard problem, which is even inflated if sub-national governments are funded primarily through revenue-sharing and grants. In this case, centre dominates the power to tax and takes on heavy obligations on funding of sub-national governments, which causes that officials of sub-national governments face weak incentives for fiscal discipline. The author also argues that the real problem of local government finance is in fact semi-sovereignty with political centre dominating taxation but not local government spending and borrowing. Actually, the analogy is taken from the theory of the firm and the theory of soft budget constraints in socialist economies: more autonomy of state-owned companies' managers without the reduction of reliance on government funding increases the soft budget constraints problem; in the holding company each division manager trades votes with other division managers for favoured projects, which causes cross-subsidisation and inflates common resource problem.

vision of goods and services. For instance, local provision of goods and services should contribute to greater prosperity, as it (Pareto efficiently) decreases the deadweight loss of the consumer surplus (Bailey, 1999). The reason for greater efficiency also lies in the better knowledge and subsequent greater ability to fulfil diverse preferences. Moreover, the so-called "geographical proximity effect" states that the level of information on production costs of public goods and services is higher at the local level, and at the same time, the variance of marginal costs of public goods and services has a negative correlation with the size of local authorities (Gilbert and Picard, 1996), which should result in greater efficiency of local goods and services provision. Finally, voters' political participation should be larger at the local level (Borck, 2002). The reason for this lies in the fact that at the local level, individual voters have greater influence on the outcome of the political decision-making because their votes carry relatively more weight. Consequently, greater political participation implicitly results in greater political accountability of the local authorities, as the voters' control over the politicians in increased.[19] In fact, Eichenberger (1994) has summarised that the main advantages associated with local provision of goods and services are better fulfilment of locally differing preferences, lower planning and administrative costs related to possibility of bureaucracy reduction, greater organisational and political innovations due to smallness, and greater competition as well as greater efficiency in politics as citizens tend to have more influence.

In contrast, local provision of goods and services can have several disadvantages. As already mentioned the main drawback of local provision lies in the potentially lost economies of scale (Bailey, 1999). Namely, in centralised provision, economies of scale are supposed to be created due to the possibility of production specialisation, as well as of lower administrative costs.[20] Besides, the problem of spill-over effects and their internalisation are associated with local provision, which is typical for goods and services with important spatial externalities (e.g., health care and tertiary education). Local authorities are often unable to perceive the positive effects, meaning that they do not take them into account when making decisions.[21] Finally, if the financing of local provision of goods and services

[19] More on this issue: Seabright (1996).

[20] The economies of scale are particularly relevant to infrastructure intensive activities, such as, for example, water and sewerage (Fox and Gurley, 2006).

[21] See Gilbert and Picard (1996) on this issue.

is (at least partially) based on revenue-sharing or grants received, local governments have the incentive to overextend the supply of services, since they do not have to bear full costs (Eichenberger, 1994).[22]

Taking into account the premises of first-generation fiscal federalism theories, the literature on fiscal federalism is also interested into the optimal size of local jurisdictions.[23] Typically, the research focuses on both costs and on the performance of local jurisdictions, and the discussion is based on the notion that the optimal size of the local unit is determined as a balance between service provision costs and congestion effects (Bises and Sacchi, 2009).[24] Specifically, this notion was derived from the club theory: the size of the local jurisdiction and welfare of the resident of that jurisdiction are both positively and negatively related. Namely, the larger size of local jurisdiction also denotes the larger number of taxpayers, which decreases the per capita costs of public services provision, yet it also causes crowding problems. In particular, goods and services that are typically provided by local governments (e.g., education, public transport etc.) tend to have significant crowding effects.

In fact, Holzer et al. (2009) have argued that the non-linear relationship exists between the size of local jurisdictions and their performance, since too large jurisdictions experience diseconomies of scale and too small jurisdictions are not able to achieve economies of scale.[25] In particular, economies of scale are persistent in capital-intensive services of local jurisdictions, those being, for example, water provision and maintenance of rural roads, meaning that larger local government units can provide them more efficiently. In contrast, smaller local government units deliver labour-intensive services more efficiently (for example, police and fire

[22] Furthermore, more centralised provision of goods and services should allow their better coordination, not to mention the fact that at least minimal provision of certain public goods and services can be guaranteed.

[23] Although the discussion follows outlines of Oates (2005) approach, readers should acknowledge that there are some other approaches to fiscal federalism (e.g., public choice approach, political economics approach etc.). More on this issue see Garzarelli (2004).

[24] In technical terms, the size of local jurisdictions is typically measured in terms of population.

[25] They point out that the most efficient size of local jurisdictions is in the range of population from 25 thousand to 250 thousand.

protection, refuse collection, public education etc.), since those services do not exhibit significant economies of scale.[26]

Nonetheless, the theory predicts for different potential effects of local government size on its costs (performance): linear negative effect, linear positive effect, non-linear U-shaped effect and non-linear inverted U-shaped effect (see Andrews et al., 2006). In the first case, bigger local government means lower costs, which could be attributed to either economics of scale or larger strategic capacity. In the second case, bigger local government means higher costs, which could be attributed to possible bureaucratic congestions.[27] In the third case, the costs of local government units fall at the beginning, but start to rise after certain size of local government has been achieved. This means that the costs of medium-sized local units are the lowest, which could be attributed to acquired economics of scale, but congestion effects have not been experienced yet. This implies that there is an optimal size of local units, which can be achieved with amalgamation of smaller and disaggregation of larger units. Finally, the last case shows that costs of medium-sized local units are the highest, which could be attributed to the fact that they have not experienced the economies of scale yet, but they still experience congestion effects.

Research Design and Findings

The main purpose of this paper is to provide empirical evidence about the effect of local governments' size on their costs (expenditures) for a cross-section of 210 Slovenian municipalities. Based on the empirical literature review (e.g., Briem, 1998), the estimated regression model for local government expenditure function uses per capita municipal total expenditures as dependent variable, whereas the inclusion of explanatory variables in the model is based on the hypotheses of standard literature addressing this issue. Specifically, explanatory variables used in the analysis are: Population (total municipal population in 1,000 in order to validate the effect of the size of local government units on the municipal

[26] It should be noted that the literature points out that, on average, over 80 per cent of local jurisdiction services are of labour-intensive and routine nature (Katsuyama, 2003). Accordingly, the author stresses that allocative issues, such as management of resources, are more important than technical efficiencies, such as economies of scale.

[27] This means that viable policy option in the first case is local government amalgamation, whereas in the second case disaggregation of larger local government units.

expenditures per capita);[28] Wealth (per capita income, which relates to idea that available income should be the other important prerequisite for municipal spending: average yearly gross salary per employed person in i-th municipality is used as proxy for describing per capita income, since those data are available at the municipal level);[29] Grants (per capita municipal transfer revenues, since they tend to be another important source for financing municipal spending - transfer revenues (grants) considered in the analysis are those received from the central budget as well as from other public funds and agencies, including possible financial equalisation); Core services (variable describing expenditures; needs to control the ability of municipality to meet the demands for local public goods provision – basically, the costs of administrative operation, public utilities and education are used as a proxy for describing the core functions of the municipality, and they are all expressed in per capita terms);[30] Density (municipal population per squared kilometre of territory, which describes the density of population in i-th municipality in order to control potential effects of dispersed population); Unemployment rate (proportion of population unemployed (registered unemployment rate based on the National Labour Office's methodology); The old (proportion of population in the municipality above 65 years of age; and The young (proportion of population in the municipality below 15 years of age).[31]

[28] Moreover, the empirical analysis also utilises squared term for the variable in order to test potential non-linear effects.

[29] Nonetheless, other similar studies report that using either average salary or per capita local GDP would lead to similar results (see Blume and Blume, 2007), which indicates that it is viable to use each of those covariates in the analysis.

[30] Those three types of expenditures are namely the most important expenditures of municipalities in Slovenia, since the provision of those services and functions is in the municipal domain.

[31] The last three variables, that is Unemployment rate, The old and The young, are included in the analysis to control for group-specific demands, predominantly of those population groups that have relatively larger demand for public spending. These control variables are integrated into the model, since the majority of them are usually standard in the empirical literature estimating local government expenditure functions (e.g., see Worthington and Dollery, 1999; Saruc and Sagbas, 2008). For instance, the exposition given in Worthington and Dollery (1999) specifies expenditure function for governmentally provided goods as the function of the total amount of resources that are available for funding such expenditures, the function of the relative tax price of expenditures, and the function of institutional and other factors that affect expenditure outcomes. The source for variables Expenditures, Grants and Core services is the Ministry of Finance (2011), whereas the Statistical Office of the Republic of Slovenia (2011) is data source for the variables Population, Wealth, Density, Unemployment rate, The old and The young. All the data are from 2009.

Table 5: Municipalities in Slovenia – size and expenditures (costs)[32]

Estimation	Linear population term only		Squared population term included	
	(1)	(2) with control variables	(3)	(4) with control variables
Constant	1155.04 (35.06)	515.693 (181.852)	1190.96 (45.84)	505.817 (182.120)
Population	-1.401 (0.941)	-1.707 (0.778)	-6.352 (3.076)	-0.757 (1.804)
Population^2	/	/	0.022 (0.011)	-0.004 (0.005)
Wealth	/	0.012 (0.007)	/	0.011 (0.007)
Grants	/	0.588 (0.143)	/	0.592 (0.146)
Core services	/	0.848 (0.146)	/	0.848 (0.148)
Density	/	0.491 (0.184)	/	0.473 (0.191)
Unempl. rate	/	-8.583 (3.093)	/	-8.419 (3.124)
The young	/	-21.137 (8.517)	/	-20.596 (8.595)
Observations	210	210	210	210
$R^2_{adj.}$	0.000	0.867	0.005	0.867
St. error of est.	453.549	165.163	452.317	165.399
Durbin-Watson	2.358	1.814	2.350	1.833
F-stat.	0.945	196.232	1.542	171.266
Reset p	0.146	0.285	0.085	0.277

Source: Author's calculations

Table 5 presents ordinary least squares estimations for the municipal expenditures' function.[33] Columns 1 and 3 present the effect of population on municipal costs per capita without using any control variables. Interestingly, calculations indicate that there is a negative effect of municipal size on per capita expenditures (column 1), although this effect is not statistically significant. Moreover, if squared term of population variable is added to the model, calculations indicate that there occurs non-linear U-shaped effect of population size on municipal expenditures per capita, implying that there should exist an optimal size of municipality. Nonetheless, two points should be addressed in relation to this hypothesis. First of all, if the derivative of squared function is calculated, results reveal that

[32] White HC standard errors are shown in parentheses due to the revealed presence of heteroscedasticity.

[33] It needs to be stressed that variable The old is left out of the model (columns 2 and 4), since the χ^2 test has shown that this variable tends to be redundant.

curve starts to rise after a relatively large size of municipality is achieved,[34] which means that in practice only the negative effect could be observed given the relatively small size of municipalities. Second, the results also indicate that control variables are needed, since the characteristics of both »reduced« models seem to be very poor as they are not statistically significant.

Consequently, columns 2 and 4 show »appropriate« expenditure functions for Slovenian municipalities by incorporating relevant control variables based on hypotheses derived from literature review. The model described in column 2 uses only linear population term, whereas the model described in column 4 uses quadratic (squared) population term as well, thus enabling us to test the potential non-linear effect of municipal size on unit's costs. Interestingly, both estimates suggest that almost nine tenths of variation in per capita total expenditures (i.e., unit's costs) of Slovenian municipalities could be explained with seven explanatory variables, which is a relatively good result, since cross-sectional data are used. Furthermore, both estimated models seem to be structurally stable. The evidence of linear estimation suggests that a statistically significant negative effect of the size on total per capita expenditures could be observed, which argues in favour of the presence of economies of scale, since increase in the size of the municipality obviously causes reduction in expenditures per capita, although the effect tends to be relatively small.[35] Moreover, if quadratic term is used in the analysis, both population covariates seem to be highly statistically insignificant, which means that any non-linear relationship (effect) between municipal size and per capita expenditures should be reasonably excluded.

Regarding the effect of other explanatory variables on total per capita expenditures of Slovenian municipalities (column 2), the majority of control variables (Grants, Core services, Density and Unemployment) seem to be statistically significant at 99 per cent level, whereas variable The young is statistically significant at 95 per cent level. Interestingly, the regression coefficient of variables Grants, Core services and Density has the expected positive sign, which means that per capita municipal expenditures are positively affected by grants received (i.e., »stickiness« of intergov-

[34] Turning point occurs at roughly 260,000 residents and more.

[35] Interestingly, the negative magnitude of the effect even increased when control variables were included.

ernmental transfers),[36] implementation of core functions and rising density of population cause potential problems associated with congestion. In contrast, regression coefficient of variables Unemployment and The young has the unexpected negative sign, which is not in line with theoretical predictions. Finally, the impact of wealth on municipal expenditures is problematic if statistical significance (95 per cent level) is taken into account, suggesting limited dependence of municipal spending on per-capita income.[37]

Concluding Remarks

The aim of the paper is to give insight into local government system in Slovenia. There is only one tier of local government in Slovenia (i.e., municipalities), and data indicate that municipalities differ substantially in their size, spending activities, and in other socio-economic characteristics. The empirical research presented in the paper suggests that the negative effect of the size on total per capita expenditures of Slovenian municipalities could be observed, which means that an increase in the size of municipality obviously causes reduction in expenditures per capita. Given the fact that municipalities ought to perform legally defined tasks, this would suggest that the amalgamation of municipalities would possibly lead to lower per capita expenditures, although calculations indicate that very large reductions in unit costs should not be expected. Those findings are partially in line with previous research for Slovenia (see the overview in Oplotnik and Brezovnik, 2004), where the analyses showed that smaller municipalities confront larger expenditure for public administration and spacious rural municipalities tended to be more expensive for economic activities.[38] Nonetheless, this study concentrated on total per capita expenditures, and negative effect of the size on spending levels has been pointed out for those expenditures, although variations may exist regarding the particular types of expenditures (e.g., according to functional classification). Consequently, the research could be potentially extended if

[36] See, for example, Pevcin (2011) on theoretical and practical aspects of this issue.

[37] The problem of insufficient relations between municipal expenditures and revenues in Slovenia has already been addressed by Oplotnik and Brezovnik (2004).

[38] Yet, the analyses showed that larger municipalities, in contrast, confront higher expenditures for communal activities, housing etc.

the effect of size on specific types of expenditures is analysed, although the effect on total expenditures is still practically the most important one. Namely, the differences in results for various types of expenditures would suggest different suitable (appropriate) municipal size for each activity, which is often not a viable option in practice.

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LOCAL GOVERNMENT IN SLOVENIA: STRUCTURE, SIZE AND EXPENDITURES

Summary

The purpose of the paper is to investigate the relationship between local government size and costs (expenditures) in Slovenia. There is only one tier of local government in Slovenia. Municipalities differ substantially in their size, spending activities and in other socio-economic characteristics. Consequently, this gives opportunity to assess the relation and the effect of size on per capita expenditures of municipalities, which could be either linear (positive, negative) or non-linear (U-shaped, inverted U-shaped). The empirical evidence suggests that linear negative effect of municipal size on per capita expenditures of Slovenian municipalities could be observed, which means that findings speak in favour of policy implications that foster municipal amalgamation.

Key words: *local authority, local government finances, municipal expenditures, optimal municipal size, Slovenia*

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LOKALNA SAMOUPRAVA U SLOVENIJI: STRUKTURA, VELIČINA I RASHODI

Sažetak

Svrha rada je istražiti odnos između veličine lokalnih jedinica i njihovih troškova odnosno rashoda u Sloveniji. Samo je jedan stupanj lokalne samouprave u Sloveniji, a jedinice se značajno razlikuju prema veličini, aktivnostima koje financiraju i drugim socioekonomskim karakteristikama. Takva situacija omogućuje da se ocijeni odnos i učinak veličine na rashode jedinica lokalne samouprave po glavi stanovnika, koji može biti linearan (pozitivan ili negativan) ili nelinearan (u obliku U krivulje ili obrnute U krivulje). Empirijski podaci pokazuju da postoji linearan negativan učinak veličine lokalne jedinice na rashode po glavi stanovnika u Sloveniji. Rezultati, dakle, govore u prilog politici poticanja spajanja manjih lokalnih jedinica u veće.

Ključne riječi: *lokalna vlast, lokalne financije, rashodi lokalnih samoupravnih jedinica, optimalna veličina lokalne jedinice, Slovenija*