LSEE Papers on Decentralisation and Regional Policy

DECENTRALISATION AND INTER-MUNICIPAL COMPETITION:
EVIDENCE FROM SERBIA

VASSILIS MONASTIRIOTIS

Research Paper Number 1, July 2011

Decentralisation and Inter-Municipal Competition in SEE: evidence from Serbia

Vassilis Monastiriotis[*]

Abstract

A process of administrative and fiscal decentralisation has been followed in virtually all Southeast European countries since their transition from communism. In Serbia this process, as with the process of transition itself, took off with some notable delay; but it has progressed rather fast since. Decentralisation is said to serve a multitude of objectives, from enhancing democratic representation and empowering local constituencies to raising the growth potential nationally and attaining higher levels of economic efficiency in the delivery of public policies. Economic efficiency outcomes in particular are largely believed to operate through a process of enhanced inter-municipal competition, whereby fiscally- and administratively-empowered local authorities respond to developments in neighbouring jurisdictions in a way that seeks to maximise the utility of their residents and the tax-revenues that the latter generate. In this paper we examine the extent to which the process of decentralisation in Serbia can be linked to enhanced inter-municipal competition, in the form of rising interdependence in municipal spending, through the application of spatial econometric techniques on data covering the period 1999-2008. We find some limited evidence of increasing spatial interdependence in municipal expenditures, which however is only partly consistent with the view of decentralisation as an efficiency-enhancing process. We discuss possible explanations for this, including the limited timeframe of our analysis and, perhaps more importantly, limitations of the very process of decentralisation itself as well as behavioural constraints that may not allow the mechanics of competition to operate fully.

Over the last two decades the idea of municipal decentralisation has gained notable prominence and is now well embedded in a variety of policy processes, both at the national and supra-national levels (Rodríguez-Pose and Sandall 2008). Within Europe, two are the main policy processes that express this most emphatically. On the one hand, the EU's process of multi-level governance (Leygues, 2001), aiming at a more democratic and less hierarchical governance structure of EU policies and institutions, thus seeking to empower local actors, including public administrations. On the other, the Council of Europe's Charter of Local Self-Government (CoE, 1985), which has established "the right and the ability of local authorities, within the limits of the law, to regulate and manage a substantial share of public affairs under their own responsibility and in the interests of the local population" as a fundamental European principle. This has represented a significant shift of political and economic arguments in favour of decentralisation from a predominantly cultural / identity basis to justifications on the basis of economic efficiency and quality of governance.

This shift has represented two 'innovations' in the literature of decentralisation. First, the mainstreaming of the original ideas proposed in the public finance literature (Musgrave, 1959; Oates, 1972) with an increasing attention to economic-behavioural factors, such as local differences in preferences, information asymmetries, monitoring costs, inverse incentives, etc (Besley and Case, 1995; Aghion and Tirole, 1997; Oates, 1999; Brueckner, 2006). Second, an increasing attention in both academia and policy on more socio-political factors, such as issues of legitimacy, accountability and democratic representation (Burns et al, 1994; IIDEA, 2000; UN, 2000).

In the context of Southeast Europe (SEE), and of the Western Balkans in particular, the calls for decentralisation have had an additional weight and justification. In the early 1990s, as the countries were in their early stages of transition from communism, administrative decentralisation in the form of local self-governance (but with limited powers) prevailed as an efficient vehicle for democratisation and especially for disbanding the powers of the central government that had for decades remained highly concentrated and hierarchical (Brusis, 2002). In some cases,

instituting local self-governance at the very decentralised level also acted as a vehicle for diluting real or potential secessionist pressures at wider geographical scales. More recently, embedded in the process of pre-accession to the EU, the decentralisation process has taken additionally a 'Europeanisation' dimension, in the sense of a perceived link between legislatively enhancing local self-governance and (being seen to be) addressing state-wide problems of corruption, administrative efficiency and democratic representation (UNDP, 2009).

Despite such developments, the decentralisation process in Southeast Europe has been rather limited, in both its extent and its scope. Until very recently, administrative decentralisation has not been accompanied by similar moves in the budgetary field (fiscal decentralisation), resulting in a rather superficial process of de-concentration, whereby central governments transfer cumbersome responsibilities to local authorities but without similar transfers of political authority and financial resources (Konjhodzic and Suman, 2009; Avlijas and Bartlett, 2011). In this sense, it is highly questionable whether processes of decentralisation in SEE have in fact contributed to the attainment of the economic and political goals that decentralisation is generally associated with (economic efficiency and democratic representation). But there is an additional reason for this. In the public economics literature, the benefits of decentralisation are materialised mainly through increasing inter-municipal competition (Besley and Case, 1995; Revelli, 2002 and 2006; Brueckner, 2003; Sole-Olle, 2005; Stastna, 2009). The logic here is that with decentralisation local authorities start competing for businesses and residents and are thus forced to develop policies, and achieve combinations of taxes and expenditures, that maximise the total income produced in their jurisdiction. This clearly requires substantial degrees of mobility (of people and businesses) as well as a 'depoliticised' polity, whereby citizens' electoral behaviour is driven mainly by self-interest and less so by party-political and ideological affiliations. It also requires administrations that possess the capacity to compete (or simply to deliver local public goods) and a relative absence of collective (supra-municipal) public goods (Bardhan, 2002). Given the state of economic, infrastructural and administrative development in the region, it is doubtful that any of these conditions could be said

to apply in the context of SEE. By implication, in this context, questions about the efficacy of the process of decentralisation are intensified by questions about the applicability and relevance of the very process itself.

In this paper we look at the case of Serbia, as an illustrative example of developments in the field of decentralisation in the region, and seek to analyse the extent to which the process of decentralisation has, or may in the future, contributed to strengthening economic efficiency in the country. To examine this, we rely on indirect evidence, as measuring (changes in) economic efficiency at the local level is significantly obscured by lack of suitable data and by the fact that a variety of other factors, that we cannot control for, may be influencing efficiency simultaneously. Our approach is to examine the efficiency of municipal spending by relying on estimates of the determinants of public expenditure at the municipal level – and of its composition. Among other possible determinants, we examine the influence exerted by spending in neighbouring municipalities: to the extent that inter-municipal competition is present, local outcomes ought to be influenced by neighbouring ones and evidence of spatial interdependence to be detectable. We examine how the link between local outcomes and determinants (including external influences) has shifted over time, as the country engaged increasingly in municipal decentralisation. If this process has contributed significantly to enhancing efficiency, we should find an intensifying link, over time, between local characteristics and volume of local expenditures; as well as between the latter and expenditures in neighbouring municipalities.

In the next section we briefly review the process of decentralisation and the changing competencies of the municipal authorities in Serbia. Section 3 discusses the theory and empirics of inter-municipal competition. Section 4 presents the data and discusses the spatial and temporal patterns of municipal expenditures observed. The results of the empirical analysis are presented, and their implications discussed, in section 5; while section 6 summarises and places the results to their wider SEE context.

Decentralisation in Serbia

Unlike other former communist countries, the states of former Yugoslavia had a relatively decentralised administrative structure, including a significant degree of local self-government, albeit within a framework of central-party control (Bartlett, 1985). Typically, municipal authorities had the ability to raise own revenues through taxing commercial property at rates that could be determined locally. In return, they were responsible for the provision of a number of local services (sewage, cleaning, street lighting, etc), while they were also involved in the management of the provision of social services (education, health, etc) (Levitas, 2005). Following the dissolution of Yugoslavia, developments in government became more disparate and were heavily influenced by the ethnic conflicts that ensued and the political situation emerging in each of the successor states.

In Serbia, the immediate effect of the break up of the former Yugoslavia was a move towards centralisation, with the consolidation of central-state power and the stripping of municipalities of their tax-raising and social-provision responsibilities. It was only in 2002, with the Law on Local Government that the process of administrative decentralisation took any notable pace and form. Nevertheless, small steps towards introducing aspects of local self-governance and fiscal responsibility came much earlier, in 1994, with the Law on Financing Municipalities and Cities (Stipanovic, 2009). Under this system, municipal budgets had two elements: one financed through the central government from tax revenues generated locally and one financed directly from municipal own revenues. Central government transfers were based on a combination of fixed-share allocations, whereby each municipality retained a fixed proportion of the tax revenues generated in its jurisdiction (the so-called "unlimited shared revenues"), and municipality-specific allocations, which were of course "limited" (i.e., not proportional to local tax revenues) and decided centrally on an annual basis. Own revenues, the so-called "original revenues", were based on locally-determined fees, mainly on businesses. Interestingly, municipalities had some discretion over determining the size of these fees but much less discretion over the use of the revenues generated – as, often, these were earmarked

specifically for spending in the area in which the revenues were generated (Levitas, 2005).

Owing to intensifying problems with financing of local services, but mainly because of the democratisation process that followed the fall of Milosevic in late 2000, an important reform of the system of local governance and financing took place in 2001. The Laws on Public Revenues and Expenditures and on Local Government altered significantly the structure of fiscal governance – although the changes they introduced with regard to administrative aspects were much more modest. Both provided municipalities with more discretion over their expenditures and a higher allocation of funds, especially from own revenues, while adding little, if anything, in terms of the tasks and responsibilities assigned to them. The new legislation raised the share of local authorities in a number of tax categories[1] and allowed them to introduce new taxes on a number of other areas (most importantly, a payroll tax of up to 3.5%), almost doubling their budget allocations in real terms in the space of two-to-three years (Stipanovic, 2009). However, while the financing of local authorities in this period can be considered fair in a vertical sense (i.e., in terms of the share of national GDP directed to municipal authorities, relative to the amount and type of tasks the latter were required to deliver), the weakening of the discretionary and redistributive elements in the system (grant funds and other direct transfers) led to rising disparities in the fiscal position of different municipalities across the country (Levitas, 2005).

This system of local self-governance and financing was significantly modified in 2007 with the Local Self Government Finance Law, following the tax reforms of 2004-2005 which replaced the sales tax with VAT and reformed drastically wage and payroll taxation (with the elimination of the local component of the payroll tax). The new system maintained the 'own' and 'shared' revenues categories, but it increased the underlying municipal shares and gave more powers to local authorities concerning tax collection, thus resolving some important incentives problems that were built-in

---

[1] Especially for property tax, the share retained by local authorities was increased from 25% to 100%.

to the previous system (Avlijas and Bartlett, 2011). Further, the new system introduced a more elaborate set of transfers, which for a first time included also transfers earmarked for the financing of future competencies delegated to the local level and of specific infrastructural and other projects (Stepanovic, 2009). The system of non-earmarked transfers also became more elaborate and more targeted, with an 'equalisation transfers' component, proportional to any potential shortfall in locally-generated shared-tax revenues (leaving the own-revenues component unaffected so as to avoid inverse incentives problems), a 'general transfers' component calculated on the basis of objective features of each municipality (population, number of pupils, etc) and various compensation-based components aiming at addressing temporary needs (transitional fund) or allocative imbalances (reallocation fund). The new system also allows municipalities to borrow directly from the markets by issuing debt for investment purposes. More importantly, the new system transfers to local authorities administrative and fiscal (on the expenditures side) responsibility in a number of areas, including primary health care, pre-school education, selected aspects of primary and secondary education (excluding payroll and curriculum issues), and the delivery of key social services such as for children, the elderly and people with disabilities (but excluding cash transfers and social assistance) (World Bank, 2008; Avlijas and Bartlett, 2011). The new system has been further iterated with legislative changes in 2008/09, although the main ingredients of the system remain unchanged.

With the recent changes in the system of local-governance and financing, Serbia has in some respects completed a full circle: from the relative autonomy of the 1980s to the recentralisation of the early 1990s, the limited financing of the late 1990s, the reconstitution of financing in the early 2000s, and finally the reconstitution (and modernisation) of important aspects of administrative and fiscal responsibilities after 2007. Still, as with other SEE countries, fiscal and administrative decentralisation is at its early stages, with elements of genuine delegation (which includes discretion over policies) still mixed with elements of pure de-concentration (where policy tasks and objectives are defined centrally) – and very few signs of a devolution proper.

Nevertheless, these changes are sufficient to motivate – and allow – an examination of the impact of decentralisation on municipal efficiency, as is discussed next.

Decentralisation and inter-municipal competition

In the literature of fiscal federalism decentralisation is seen as a factor enhancing economic efficiency, for a variety of reasons. These include allowing local administrations to cater for a more homogenous set of preferences, overcoming transaction costs and information asymmetries, and resolving monitoring cost problems and problems of incentives. Above all, however, decentralisation is believed to increase efficiency by transferring responsibility and accountability to the local level, thus on the one hand *enabling* local administrations to devise and implement efficiency-enhancing policies and on the other hand *incentivising* them to do so – by exposing them to relevant pressures and penalties.

Central in this incentives mechanism is the idea of inter-municipal competition. Simple delegation of policy responsibilities to the local level, while undoubtedly contributing to resolving information asymmetries and monitoring problems, is not by itself sufficient to incentivise efficiency improvements by the local administrations. In a closed system, even if inefficient administrations can be penalised by their electorate, the absence of a reference point with which to compare efficient outcomes (benchmarking) and the inability to exert influence on policy outcomes through 'exit' could allow inefficiencies to persist. It follows that it is the interaction (strategic or otherwise) of municipalities that creates the incentives and informational flows that can allow efficiency gains to occur at the local level that could not be attained in a centralised system.

Following this logic, an important test for the relevance and success of decentralisation as an efficiency-enhancing process is the extent to which it generates inter-municipal competition. The literature of public finance and fiscal federalism has long recognised this and empirical studies examining the extent of tax competition in federal systems have flourished (Brueckner and Saavedra, 2001; Buettner, 2001; Revelli, 2001; Bordignon et al, 2003; Solé-Ollé, 2003; Hauptmeier et

al, 2009). More recently, this literature has extended this type of analysis to less decentralised systems, where fiscal competencies remain centralised but discretion over public expenditures, both in terms of their composition and their volume, are delegated to lower tiers of government (Lundberg, 2001; Revelli, 2002; Sole-Olle, 2005; Brock et al, 2006; Foucault et al, 2008; Stastna, 2009).

Empirically, evidence of inter-municipal competition in public expenditures is examined by testing the extent to which expenditures are spatially correlated, i.e., by testing the similarity of expenditures across neighbouring municipalities. A municipality offering higher expenditures in any particular expenditure category of public provision will be able to attract more businesses and residents for whom the provision of the corresponding public good influences significantly their utility or profitability. As a consequence, neighbouring municipalities will be under pressure to increase their spending accordingly, so as to retain their revenue-generating residents and businesses – thus producing interdependent outcomes across space.[2]

Algebraically, this interdependence can be represented as follows:

$$s_i = a + \rho W s_j + b X_i + \varepsilon_i \tag{1}$$

where i and j index municipalities, s is a measure of municipal expenditures (e.g., total spending per capita), W is a spatial matrix that allocates neighbours to municipalities, X is a vector of municipality-specific variables that affect the local level of spending, and ε is an iid error term. In this model, the parameter ρ captures the extent of spatial association (interdependence) between local and neighbouring

---

[2] Such evidence of spatial interdependence, however, could also arise from other sources. For example, if residents or local authorities operate under imperfect information (for the cost of service provision or for the demand for specific services, respectively – Stastna, 2009), then local authorities will have a double incentive to 'mimic' the expenditure behaviour of their neighbours: doing so will reduce their costs of deciding on appropriate policies, while it will also avoid negative comparisons by residents benchmarking local performance on the performance of neighbouring municipalities (the so-called yardstick competition – Besley and Case, 1995). Another channel for spatial interdependence is through the existence of spillovers, whereby expenditures in one municipality (e.g., for recreation venues) generate negative externalities in a neighbouring municipality (e.g., by increasing traffic), which then has to increase its public spending to alleviate these externalities.

outcomes. Positive estimates of ρ can be interpreted as evidence for spatial competition or for mimicking; negative estimates would instead signal the presence of a positive spillover effect, which allows local authorities to free-ride in the provision of services.[3]

Relating this model to our earlier discussion about the process of decentralisation and the prevailing system of local self-governance in Serbia, we can devise the following hypotheses. *First*, the volume of municipal expenditures should depend on a number of fixed area characteristics relating to the size and level of development of each municipality. This is because, as we saw earlier, throughout the period under consideration the allocation of resources at the municipal level follows objective criteria such as the population of each area and the demand for specific services (schools, old-age people, etc). *Second*, controlling for area characteristics, spatial interdependence should be minimal in early periods and should increase significantly after the 2004-05 and 2007 reforms, which provided municipalities with the resources and incentives to engage in competition and optimisation strategies. *Third*, for similar reasons, the influence of objective characteristics relative to that of more contextual factors (e.g., political variables) should decline over time – as decentralisation-empowered municipal authorities can adjust more effectively their levels of spending to their own socio-political preferences and the preferences of their residents. In what follows, we examine these hypotheses, as well as a number of other arising issues, through both exploratory and econometric analysis, covering the period 1999-2008.

Municipal expenditures in Serbia: data and descriptives

In our empirical investigation we use data on total municipal spending as well as spending on social services (health, education, culture, etc) deriving from the Municipalities Yearbook of Serbia. From the same source we have derived data on a

---

[3] A negative effect could also be consistent with a 'specialisation' hypothesis whereby, due to the presumed existence of positive spillovers, neighbouring administrations engage in resource-sharing. In the context of our analysis (which focuses on aggregate measures of expenditures) and given the limited degree of inter-municipal cooperation in the country (Avlijas and Bartlett, 2011) this is a highly unlikely possibility.

number of complementary variables, as described in Table 1. We restrict our analysis to 145 municipal and urban areas for which data are consistently available throughout the period by aggregating the values for the municipalities of Belgrade, Nis and Novi Sad to the city level and excluding municipalities located in areas which seceded in following years (Montenegro and Kosovo). Our data cover four periods that correspond to different phases in the development of the decentralisation process in the country: 1999 (the centralisation phase), 2002 (the re-financing phase), 2005 (the early decentralisation phase) and 2008 (the phase of greater fiscal autonomy).

Table 1. Variables considered in the analysis

Variable	Description
Municipal spending	Total municipal expenditures per resident
Social spending	Municipal per capita spending on health, education & social care
Social share	Share of social to total spending
Population	Number of residents in municipality (in logs)
Density	Residents per km^2 (numbers)
Care for poor	Share of people in poverty under social protection
Care for elderly	Share of elderly receiving social care
Inactivity	Inactivity rate (share of inactive to working-age population)
Youth	Share of residents under the age of 24
Retirees	Share of residents over 65
Road density	Length of asphalt roads (Km) divided by total area (km^2)
Schools density	Number of school classes per resident
Universities	Number of university schools in municipality
Service orientation	Ratio of service-sector over manufacturing wages
Transfers	Share of government transfers to total municipal revenues
Debt burden	Share of loan repayments to total municipal spending
Right-wing	Share of council seats controlled by right and centre-right parties[4]
Majority	Single-party majority in local council
Fragmentation	Herfindahl index: sum of squares of party shares
Strongest	Share of seats controlled by the biggest party

A first approach to examining municipal spending is by considering its size, geographical distribution and temporal evolution. As depicted in Figure 1, per capita expenditures have increased substantially in nominal terms (partly owing to inflation), reaching a value of just over 15,000 dinars per inhabitant in 2008 (unweighted municipal average). The share of spending in the social category had followed a slightly declining trend until 2005, but it increased substantially in 2008 –

---

[4] These include the Serbian Radical Party, the Serbian Democratic Party, the Political Movement "Power of Serbia", the G-17 plus, the Serbian Renewal Movement and 'New Serbia'.

consistent with the fact that since 2007 a number of social functions (e.g., for schooling and social services) were delegated to the municipal level. Spatial disparities in expenditures (measured by the coefficient of variation to control for scale effects) rose in 2002 but have been declining since, while substantial convergence has occurred in the cross-municipal distribution of the share of social-to-total expenditures since 2005. Thus premia facie evidence exists suggesting that, with the deepening of decentralisation, inter-municipal competition intensified leading to convergence in the volume and type of expenditures across jurisdictions.

Figure 1. Size and variation of municipal spending by year and category
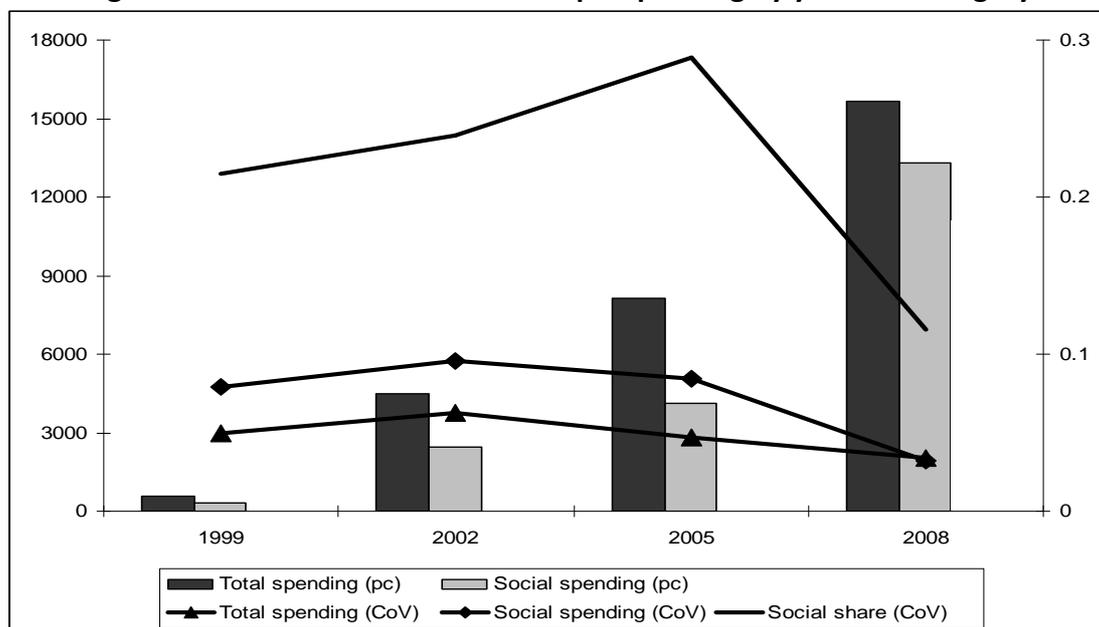
Examining more closely the spatial distribution of expenditures provides further evidence of an increase in inter-municipal competition. As depicted in Figures A.1 and A.2 in the Appendix, despite the declining spatial variation, there is a growing trend of polarisation, especially for total expenditures, with high per capita expenditures increasingly concentrating in the north of the country and municipalities in the south becoming more similar in having lower expenditures. This is especially the case in 2008. To examine this more formally, we test the degree of spatial association in the data, measured on the basis of the Moran's I statistic

(Figure 2).[5] We examine spatial association at different scales, from very localised (associating local values with those of the two nearest neighbours only: k=2) to geographically diffused (associating local values with those of the eight nearest neighbours: k=8). In virtually all cases, spatial dependence is stronger when considering the narrowest geographical neighbourhoods (k=2). Consistent with expectations deriving from our earlier discussion, spatial dependence is limited (and not statistically significant) during the centralisation and re-financing periods, but it increases substantially after the 2004-05 reforms. For social spending dependence increases even further in 2008; a pattern in line with the decentralisation of social-service functions in this period.

Figure 2. Spatial dependence in municipal expenditures by year, category and size of neighbourhood
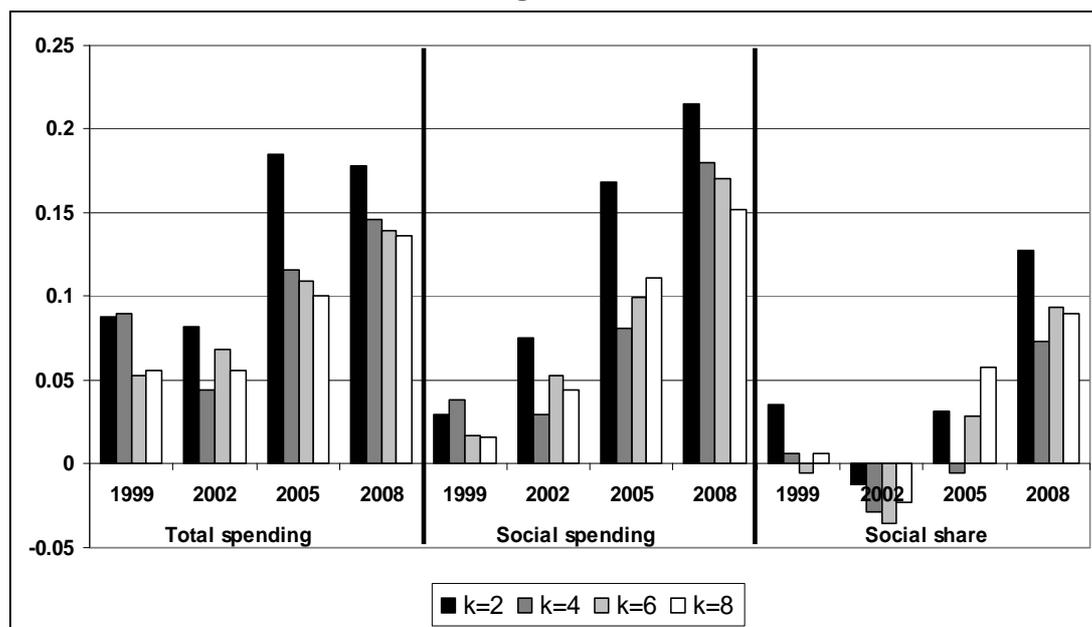
Note: Global Moran's I coefficients derived under weights matrices defined at different spatial scales: minimum 2 nearest neighbours (k=2); maximum 8 nearest neighbours (k=8). Full data and associated measures of statistical significance presented in the Appendix.

---

[5] The Moran's I statistic produces a conditional correlation between a variable and its spatial lag, i.e., a distance-adjusted weighted average for each location of the values observed in its neighbouring locations. The statistic is calculated as

$$I = \frac{N}{\sum_i \sum_j w_{ij}} \frac{\sum_i \sum_j w_{ij}(x_i - \bar{x})(x_j - \bar{x})}{\sum_i (x_i - \bar{x})^2}$$

where i and j index local and neighbouring locations (with i≠j), respectively, x is the variable of interest, N is the number of observations and w is an $N*N$ matrix associating local to neighbouring locations for each pair of locations. For more details see Anselin (1985).

Despite this supportive evidence, however, the overall strength of spatial dependence does not appear particularly high. Even in 2008, levels of municipal spending in Serbia are rather poorly correlated across space (the Moran's I value never exceeds 0.22 even at the most localised level). We can look closer at the reasons for this by examining the geographical incidence of spatial dependence, with the use of a localised version of the Moran's I statistic.[6] Figure 3 presents the incidence and location of significant clusters (of high-high or of low-low values) and hotspots (high/low values surrounded by low/high values) across the four periods and for total as well as social expenditures.

Figure 3. Local spatial association across the municipalities of Serbia, by category and year

| Total expenditures | Social expenditures |
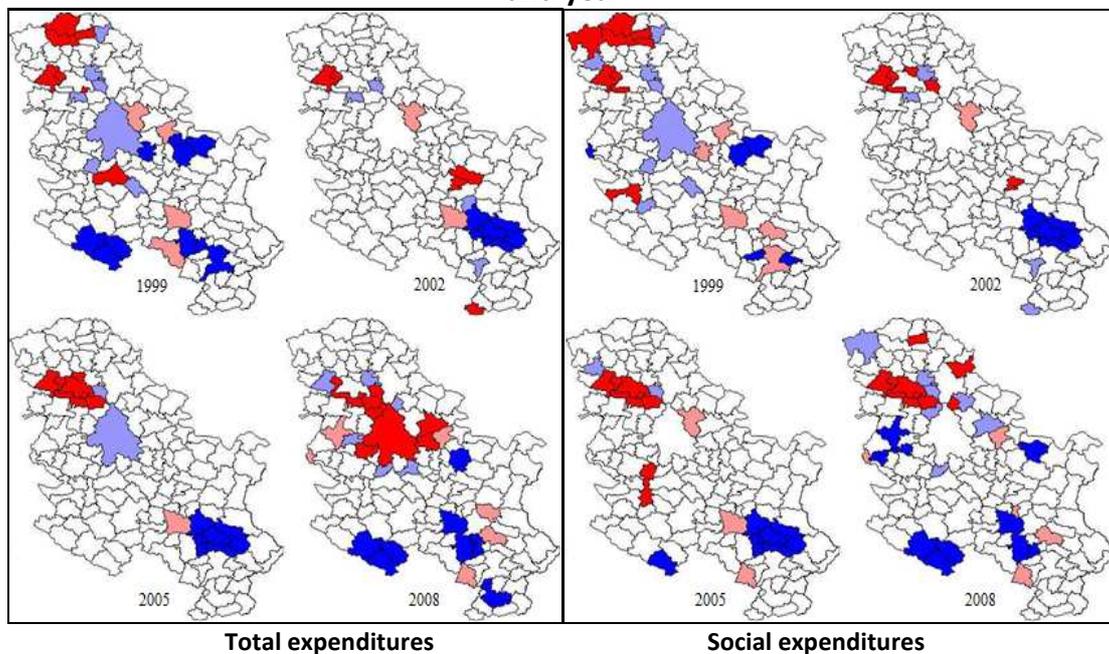
Notes: LISA clusters based on a 2-nearest neighbours criterion. Red: high values surrounded by high values (HH clusters); Pink: high values surrounded by low values (HL hotspots); Light blue: low values surrounded by high values (LH hotspots); Blue: low values surrounded by low values (LL clusters); White: no statistically significant local spatial association. All maps have been produced in GeoDa.

Consistent with the analysis of Figure 2, local spatial dependence is not significant for the vast majority of municipalities. Per capita municipal spending is higher in the north-western part of Vojvodina, especially in the pre-decentralisation period – but

---

[6] This is known as LISA (local indicator of spatial association) and it is calculated as

$$I_i = N * Z_i \frac{\sum_j w_{ij}(x_j - \bar{x})}{\sum_i (x_i - \bar{x})^2}$$

this suggests perhaps more a needs-based allocation (especially for social expenditures) than any evidence of municipal interdependence as such. Similarly, a cluster of low expenditures is found in the south-west of the country, which appears to be stronger in the intermediate periods but to have weakened notably in 2008. Given this trend, it is also difficult to attribute this cluster to some underlying form of municipal competition / interdependence. Perhaps the only significant development in 2008, which can be attributed to some inter-municipal dynamic, is the formation of a significant cluster for high expenditures (total and social) around Novi Sad which, for total expenditures, extends clearly to the area in and around Belgrade. Irrespective of this, however, the number of areas for which local spatial association is significant increases substantially between 2005 and 2008, suggesting that decentralisation may have played a role in this (consistent also with the evidence provided in Figure 2). We thus turn to the econometric investigation to examine more formally the evidence for intensifying municipal competition / interdependence as the decentralisation process evolved over time.

Local and spatial determinants of municipal spending: regression analysis

In this section we employ regression analysis to estimate the contribution of various social, economic and political variables on the size and distribution of municipal expenditures in each of the four periods considered in our analysis. We also examine formally the municipal competition hypothesis, by introducing a spatial lag of the expenditure variable in our model and assessing its contribution to explaining local levels of municipal spending. Our strategy is to start with a simple (non-spatial) model which accounts for the local determinants of municipal spending and examine, through this, the presence of spatial influences in the determination of municipal expenditures. Then, we perform a number of spatial regressions to estimate the direct effect of neighbouring expenditures on local levels of spending.

Local determinants

Table 2 presents a set of regressions for the total volume of municipal spending in per capita terms. For each year we report two sets of results: a 'parsimonious'

model, specified on the basis of a stepwise regression analysis (with backward deletion), which includes all variables that are significant at the 1% level in at least one of the years; and an 'extended' model, which includes a full list of demographic, economic, social and political variables. The performance of the two models is broadly speaking consistent for each of the years, suggesting that our estimates are generally not affected significantly by multi-collinearity. With few exceptions (density, transfers), the results are also broadly consistent across years – although, as expected, the exact magnitude and significance of each of the regressors changes notably over time.

A number of interesting findings are worth discussing. First, the size of the municipalities (in population terms) does not seem to have played an important role on municipal spending. This is also true in the case of social expenditures (Table A.3). By implication, there seems to be very little in terms of a 'market size' or an 'economies of scale' effect (whereby larger municipalities can afford savings in the delivery of local public goods, thus being able to reduce their per capita expenditures). In contrast, population density returns a very strong effect, statistically, in 1999 and 2008 but not in the intermediate years. The 1999 finding is consistent with the view that during the period of limited resourcing, allocations from the central government were favouring disproportionately the more urban areas. For 2008, however, the result suggests rather a specific role for decentralisation – as, presumably, more urban/agglomerated areas have been able to increase disproportionately the amount of resources allocated to both total and social expenditures (see also Table A.2). The influence of resource constraints is captured perhaps by the shares of youth (below 24 years of age) and retirees (over 65), both of which return negative and mostly significant coefficients (except for 2005). Similarly, inactivity also produces a negative effect for both total and social spending, consistently across the years – and perhaps increasingly so (in terms of statistical significance) with decentralisation. Interestingly, in 1999 and 2008 inactivity was associated with lower levels of social expenditures more so than for total spending (see the right-hand panel of Table A.2).

Evidence of a needs-based / demand-driven effect is also present, with the share of elderly qualifying for social care positively affecting municipal spending (but, interesting, not spending in social categories).

Table 2. Determinants of municipal spending in Serbia, 1999-2008

	1999		2002		2005		2008	
Density	0.002	0.0016	-0.001	-0.001	0.0004	0.0004	0.001	0.002
	(0.000)	(0.006)	(0.498)	(0.376)	(0.551)	(0.660)	(0.002)	(0.002)
Elderly care	3.771	7.104	5.689	11.375	6.826	8.147	5.575	6.215
	(0.097)	(0.028)	(0.124)	(0.026)	(0.067)	(0.127)	(0.009)	(0.019)
Inactivity	-0.167	-0.181	-0.937	-0.489	-0.781	-0.688	-0.613	-0.494
	(0.114)	(0.076)	(0.000)	(0.170)	(0.015)	(0.079)	(0.007)	(0.043)
Youth share	-3.361	-8.844	2.167	-4.108	1.981	-2.172	-1.115	-3.552
	(0.000)	(0.000)	(0.161)	(0.289)	(0.894)	(0.374)	(0.231)	(0.021)
Universities	-0.039	-0.035	-0.022	-0.026	-0.016	-0.013	0.008	0.011
	(0.000)	(0.000)	(0.120)	(0.076)	(0.064)	(0.156)	(0.122)	(0.040)
Service orientation	-0.381	-0.237	-0.236	-0.195	0.036	0.038	-0.082	-0.057
	(0.000)	(0.014)	(0.034)	(0.102)	(0.369)	(0.365)	(0.021)	(0.115)
Central transfers	1.720	1.215	6.450	6.753	-1.053	-0.966	-0.534	-0.538
	(0.290)	(0.445)	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)
Strongest party share	0.197	0.781	0.721	1.721	0.380	0.117	0.711	1.011
	(0.484)	(0.255)	(0.129)	(0.138)	(0.349)	(0.908)	(0.000)	(0.047)
Population		-0.014		0.070		-0.060		-0.075
		(0.741)		(0.341)		(0.374)		(0.078)
Care for poor		-2.142		-6.518		-1.684		-0.447
		(0.591)		(0.138)		(0.547)		(0.689)
Retiree share		-3.664		-3.076		-2.143		-1.903
		(0.000)		(0.082)		(0.113)		(0.019)
Road density		-0.025		-0.104		-0.027		-0.031
		(0.695)		(0.352)		(0.778)		(0.599)
Schools density		30.991		101.21		-7.095		16.857
		(0.547)		(0.095)		(0.916)		(0.635)
Debt service		1.241		-0.612		0.051		1.731
		(0.438)		(0.834)		(0.987)		(0.058)
Right-wing		0.022		-0.300		-0.315		-0.087
		(0.919)		(0.415)		(0.319)		(0.546)
Majority		0.083		0.110		0.336		0.032
		(0.774)		(0.843)		(0.560)		(0.741)
Council frag-mentation		-0.966		-1.371		0.545		-0.553
		(0.337)		(0.431)		(0.721)		(0.367)
Constant	7.148	8.808	8.599	9.045	9.457	10.958	10.037	11.378
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R^2	0.3323	0.4676	0.3182	0.3722	0.2476	0.2735	0.464	0.5274
LM (lag) [k=2]	0.852	0.000	2.478	1.422	6.277	4.523	1.477	0.661
	(0.356)	(0.999)	(0.115)	(0.233)	(0.012)	(0.033)	(0.224)	(0.416)
LM (error) [k=2]	0.513	0.338	3.286	1.713	4.574	4.312	0.755	0.619
	(0.474)	(0.561)	(0.070)	(0.191)	(0.032)	(0.038)	(0.385)	(0.431)
LM (lag) [k=4]	2.188	0.213	1.371	1.004	5.124	3.090	1.101	0.161
	(0.139)	(0.645)	(0.242)	(0.316)	(0.024)	(0.079)	(0.294)	(0.688)
LM (error) [k=4]	2.261	0.564	2.175	0.983	3.560	2.441	0.117	0.003
	(0.133)	(0.453)	(0.140)	(0.321)	(0.059)	(0.118)	(0.733)	(0.954)

Notes: All regressions are estimated with OLS. Standard errors in parentheses. LM is the Lagrange Multiplier test for spatial dependence, performed in SpaceStat v1.8.

On the other hand, the share of people in poverty qualifying for care seems to play no role – perhaps because it captures both a (positive) demand-driven and a (negative) resource-constraint effect; or because discretion on this policy by municipal authorities is in fact rather limited (Avlijas and Bartlett, 2011). The same is true for the schools density (classrooms per capita) and road density variables (the latter capturing the amount of infrastructure already available in each municipal area).

Quite surprisingly, service-orientation (measured as the productivity differential between services and industry in each municipality) appears to be inversely linked to municipal spending – implying that municipalities with dynamic industrial sectors manage to source and commit a greater volume of per capita expenditures.[7] Spending has also been lower, in the past, in municipalities with greater numbers of university faculties – although with a declining trend and by 2008 a positive association between the universities variable and the level of per capita spending (total and social, but less so in the case of the latter) is observed.

Concerning the policy variables, in line with our earlier discussion, central-state transfers seemed to have played no role for either total or social expenditures in the 1990s but to have contributed substantially to total expenditures in 2002 (the 'refinancing' period) – although this seems to have affected much less social expenditures. From 2005 onwards, however, state transfers obtain a much more redistributive role, thus returning a negative association with levels of per capita spending, although our results also confirm that in 2008 the redistributive role of transfers has weakened. Instead, in 2008 spending seems to be positively driven by debt (but at the expense of social expenditures as a share to total) – while the latter has had no influence on spending in previous periods. Last, our results indicate that stronger local governments are associated with higher per capita spending, but the

---

[7] Although for total expenditures this may be interpreted as evidence suggesting a greater allocation of spending for environmental services and hard infrastructure in industrial areas, the fact that social expenditures are also negatively affected (and more strongly so) makes this interpretation rather unconvincing.

result is statistically significant only in 2008. Majority and centre-left governments also seem to have a positive effect (albeit not statistically significant in our regressions). Thus, municipal spending does not seem to follow a pork-barrel logic under political competition (see Costa-Font et al, 2003) but rather to be more related to a municipal authority's ability to tax, implement policies and/or extract centre-state resources.

Spatial interdependence

The bottom panels of Tables 2, A.2 and A.3 present a number of statistics for the detection of patterns of spatial association in the OLS regressions. As can be seen, evidence of spatial interdependence, after controlling for local characteristics and expenditure determinants, is very weak.

Table 3. Spatial interdependence in municipal spending in Serbia, 1999-2008

Year	Spatial lag [k=2]	LM(error) test [k=2]	[k=4]	Spatial lag [k=4]	LM(error) test [k=2]	[k=4]
	Total municipal spending					
1999	0.0802	0.0446	1.2734	0.1459	0.1734	0.2421
	(0.318)	(0.833)	(0.259)	(0.166)	(0.677)	(0.623)
2002	0.1172	0.6894	0.2557	0.1203	0.9036	2.0093
	(0.117)	(0.406)	(0.613)	(0.257)	(0.342)	(0.156)
2005	**0.2002**	0.0080	0.0088	**0.2191**	0.0156	1.0404
	(0.011)	(0.929)	(0.925)	**(0.035)**	(0.901)	(0.308)
2008	0.0924	0.1043	0.3153	0.1002	0.5090	0.0928
	(0.224)	(0.747)	(0.574)	(0.311)	(0.476)	(0.761)
	Social expenditures					
1999	0.0784	1.8643	2.5544	0.1481	1.6753	0.2642
	(0.332)	(0.172)	(0.110)	(0.164)	(0.196)	(0.607)
2002	0.0550	0.0937	1.0822	0.0241	0.8538	0.4539
	(0.508)	(0.759)	(0.298)	(0.836)	(0.355)	(0.500)
2005	**0.1596**	0.1047	0.9851	0.1194	0.0852	2.1906
	(0.046)	(0.746)	(0.321)	(0.275)	(0.770)	(0.139)
2008	**0.1660**	0.2704	0.3035	**0.1933**	0.7039	0.1571
	(0.023)	(0.603)	(0.582)	**(0.037)**	(0.401)	(0.692)

Notes: The table presents estimates of ρ, the spatial lag coefficient, for different spatial lags (k=2 and k=4) and for both expenditure categories and all four years, estimated by Maximum Likelihood in SpaceStat v1.8. Lagrange Multiplier (LM) test statistics for remaining lag- and error-dependence are also reported in the columns next to the regression estimates. Significance levels (p-values) are in parentheses. Full results are presented in Tables A.4-A.7.

For total expenditures, evidence of such dependence is limited to the regressions corresponding to 2005 (with the exception of the statistic for localised spatial-error dependence in the 'parsimonious' model of 2002). For social spending, evidence of spatial dependence (again, localised and present for both the lag and the residuals) is also found for 2008 (Table A.2), but this does not survive when we include the full list of local determinants (Table A.3). This is somewhat surprising, as the descriptive evidence presented earlier indicated continuous increases in spatial association over time, with highest values observed for 2008 for both categories of spending.

We can explore this further by means of a spatial regression analysis on the basis of the model presented in equation (1). Specifically, we amend the models examined in the previous sub-section adding a spatial lag of the expenditures variable (i.e., a weighted measure of distance-adjusted neighbouring values) and estimating its effect on local expenditures using Maximum Likelihood.[8] Table 3 presents a subset of the results from this analysis (full results are presented in Tables A.4-A.7 in the Appendix). Given the previously obtained evidence of spatial association declining fast with distance, we restrict our analysis here to spatial lags generated on the basis of weights matrices for 2 and 4 nearest neighbours only.

Consistent with all evidence discussed previously, the spatial lag coefficients are rarely statistically significant. In the parsimonious model, for which estimates of the spatial lag effect are reported in Table 3, spatial dependence in total municipal expenditures appears significant only in 2005, where a 1% rise in average neighbours' per capita expenditures is found to increase local expenditures by 0.2%. For social expenditures the effect is slightly smaller (closer to 0.16% and significant only at 5%), but it applies to both 2005 and 2008 – and it is in fact stronger in the latter year. The results are consistent also at the immediately wider spatial scale (k=4). When we consider, however, the full model (see Appendix), evidence of spatial dependence for the social expenditures category in 2008 disappears – and

---

[8] Results produced using the GMM and S2SLS methods, where the spatial lag of municipal spending has been instrumented with past values of spending, produced qualitatively identical results and are thus not reported here.

the remaining spatial dependence for this category (in 2005) is very localised (significant for k=2 only). For total expenditures the results remain as in the parsimonious model reported in Table 3. In all cases, the inclusion of the spatial lag removes any evidence of spatial dependence in the residuals (see the LM(error) tests reported in Table 3).

Overall, our results provide some evidence in favour of the hypothesis of increasing municipal interdependence / competition with the advent of decentralisation. This evidence, however, is rather weak, in at least two ways. First, because despite what is observed in the descriptive patterns, when conditioning this spatial association on a number of local determinants of municipal spending the evidence of spatial interdependence is limited mainly to the year 2005 – a year too close to the very beginning of the decentralisation process – while in 2008, at least for total expenditures, this evidence disappears. Second, because the results are consistently stronger in the case of very localised interdependencies (for cases considering only the two nearest neighbours) and become insignificant very fast thereafter. With the typical municipality having 5 contiguous neighbours and only 10 municipalities having two or less immediate neighbours, it is in a way difficult to see why evidence of spatial dependence, if substantively driven by inter-municipal competition or mimicking, should decline so fast as we move to neighbourliness scales wider than those defined by the 2 nearest neighbours.

Still, it should be acknowledged that the scant evidence of spatial dependence that we have obtained cannot be easily dismissed. On the one hand, as is shown in Table 3, there is no evidence of residual spatial dependence in the models and thus there is very little to support the idea that municipal spending is further driven by pure spillovers (in socio-economic or political variables). On the other hand, spatial dependence in 2008 appears stronger exactly in the category that one would expect to find it, i.e., in social expenditures. We discuss the overall message deriving from these results in the concluding section, next.

Conclusions

Municipal decentralisation has emerged in Southeast Europe (SEE) as both a model for democratisation and a means for attaining economic efficiency and growth. In recent years, legislative moves towards administrative, political and fiscal decentralisation have taken place, to different degrees, in practically all SEE countries. Although the reasons for this trend have not been solely, or predominantly, economic, in many respects the usefulness, efficacy and viability of this process is largely to be evaluated on economic grounds.

In the context of SEE, however, pressing questions can be asked about the relevance of a decentralisation process that takes place amidst on-going and significant transformations at the national level, which not only require centralised decision-making and strong policy control but also affect the very institutions and administrative capacities of the central state. With relatively weak local administrations and still-developing institutional capacities, delegation of policy responsibilities to the local level may in fact hinder, rather than empower, the matching between local needs and local policy responses. Economic weaknesses add to this, as significant inequalities exist in resources, capacities and levels of development at the local level, and as equilibration mechanisms, including capital mobility and migration, are not yet fully in place.

Nevertheless, even under these circumstances, Serbia, as most other SEE countries, has engaged in an increasingly intensive process of decentralisation, moving from simple de-concentration since the early 2000s to firm steps towards fiscal decentralisation, with substantive delegation of a number of functions and responsibilities. While this can potentially enable local administrations to allocate resources more efficiently and deliver better policies matching more closely local preferences and needs, it also risks increasing disparities across municipalities not only in the quality and resourcing of public services but also, by implication, in local economic and social outcomes.

The evidence presented in this paper suggests that the outcome of the recent decentralisation measures in the country have not yet produced strong results in either direction. On the face of it, patterns of municipal spending seem to have become more similar since the second half of the 2000s and more correlated across space – thus supporting the idea of processes of yardstick competition and mimicking. Closer examination, however, suggests that spatial interdependencies are weak, with the econometric evidence in support of these being rather marginal and stronger in the early period of decentralisation than more recently. Among the local determinants of municipal spending, evidence of increasing relative importance of contextual factors, such as local needs and politics, is also weak. Economic constraints, as evidenced from the results obtained for inactivity and central-state transfers, play an increasingly important role; while the influence of socio-demographic conditions, although increasing in some variables, is not becoming any more significant in others. Evidence of an increasing role of political factors also seems to be restricted to a few variables only.

Overall, then, the evidence obtained in our analysis is rather inconclusive and surely less than overwhelming. Spatial interdependence of municipal spending appears to have increased recently in Serbia. But while it is tempting to associate this increase to the decentralisation process that has been followed, the evidence is not strong enough to support such a conclusion. Naturally, it could be claimed that the real changes in local self-governance in the country, especially on the fiscal field, are too recent for their results to be fully manifested in the data examined here. This is undoubtedly a valid critique, which calls, by implication, for further research to be conducted on the issue in the future. But besides this, it is also possible that the absence of strong and conclusive evidence in favour of a competition effect following decentralisation may have more to do with the very quality of the process of decentralisation itself, as well as with the extent to which local administrations and local communities are ready to respond to the decentralisation challenge. As we noted earlier, inter-municipal competition, and thus efficiency gains from decentralisation, depends to a large degree on the capacity of local administrations to deliver efficient policies and of local populations to exercise their control over

these administrations (through 'exit' and 'voice'). It appears that thus far, in the case of Serbia, the decentralisation process as it has been implemented, and the actual conditions characterising the municipal space in the country, have not allowed this to happen to any substantial extent.

References

Aghion P. and Tirole J. (1997), Formal and real authority in organizations, Journal of Political Economy 105(1), pp.1–29.

Anselin L. (1985), Spatial Econometrics: methods and model, Studies in Operational Regional Science, Kluwer Academic Publishers, Holland.

Avlijas S. and Bartlett W. (2011), Decentralisation and regional policy in Serbia, Paper presented at the LSEE/IFRI Conference "South-East Europe: Regional Co-operation, Institutional Change and the Challenge of European Integration" Brussels, 2nd December, 2010

Bartlett W. (1985), Social services and local democracy in Yugoslavia, Community Development Journal, pp.18-23.

Besley T. and Case A. (1995), Incumbent's behavior: vote seeking, tax-setting and yardstick competition, American Economic Review 85, pp.25-45.

Borck R., Caliendo M. and Steiner V. (2006), Fiscal Competition and the Composition of Public Spending: theory and evidence, Discussion Paper No2428, Institute for the Study of Labor, Bonn.

Bordignon M., Cerniglia F. and Revelli F. (2003), In search of yardstick competition: a spatial analysis of Italian municipality property tax setting, Journal of Urban Economics 54, pp.199-217.

Brueckner J. (2003), Strategic Interaction Among Governments: an overview of empirical studies, International Regional Science Review 25, pp.175-188.

Brueckner J. (2006), Fiscal federalism and economic growth, Journal of Public Economics 90(10/11), pp.2107-2120.

Brueckner J. and Saavedra L. (2001), Do local governments engage in strategic property-tax competition?, National Tax Journal 54, pp.203-229.

Brusis M. (2002), Between EU requirements, competitive politics, and national traditions: re-creating regions in the accession countries of Central and Eastern Europe, Governance: International Journal of Policy, Administration and Institutions 15(4), pp.531-559.

Buettner T. (2001), Local business taxation and competition for capital: the choice of the tax rate, Regional Science and Urban Economics 31, pp.215-245.

Burns D., Hambleton R. and Hoggett P. (1994), The Politics of Decentralization: Revitalising Local Democracy, MacMillan, London.

Canel E. (2001), Municipal Decentralization and Participatory Democracy: Building a New Mode of Urban Politics in Montevideo City?, European Review of Latin American and Caribbean Studies 71, pp.25-46.

CoE (1985), European Charter of Local Self-Government, Strasburg.

Costa-Font J., Rodriguez-Oreggia E. and Lunapla D. (2003), Political Competition and Pork-Barrel Politics in the Allocation of Public Investment in Mexico, Public Choice 116(1/2), pp.185-204.

Foucault M., Madies T. and Paty S. (2008), Public spending interactions and local politics: empirical evidence from French municipalities, Public Choice 137, pp.57-80.

IIDEA (2000), Advancing democracy in Slovakia through local self-governance: lessons learned from other European countries, International Institute for Democracy and Electoral Assistance, Stockholm.

Konjhodzic H. and Suman T. (2009), fiscal Decentralization in Croatia: reform process or political rhetoric, EKON. MISAO PRAKSA DBK 18(2), pp.233-258.

Levitas A. (2005), Reforming Serbia's Local Government Finance System, Journal of Public Administration 28, pp.147-178.

Leygues J. (2001), Multi-level Governance: linking and networking the various regional and local levels, Report by the Working Group on Multi-level Governance, Brussels.

Lundberg J. (2001), A Spatial Interaction Model of Benefit Spillovers from Locally Provided Public Services, Working Paper No31, Umea, CERUM.

Musgrave R. (1959), The Theory of Public Finance, McGraw Hill, New York.

Oates W. (1972), Fiscal Federalism, McGraw Hill, New York.

Oates W. (1999), An essay on fiscal federalism, Journal of Economic Literature 37(3), pp.1120-1149.

Revelli F. (2001), Spatial patterns in local taxation: tax mimicking or error mimicking?, Applied Economics 33, pp.1101-1107.

Revelli F. (2002), Testing the tax mimicking versus expenditure spill-over hypotheses using English data, Applied Economics 34, pp.1723-1731.

Revelli F. (2006), Performance rating and yardstick competition in social service provision, Journal of Public Economics 90, pp.459-475.

Rodríguez-Pose A. and Sandall R. (2008), From identity to the economy: analysing the evolution of the decentralisation discourse, Environment and Planning C: Government and Policy 26(1), pp.54-72.

Solé-Ollé A. (2003), Electoral accountability and tax mimicking: the effects of electoral margins, coalition government, and ideology, European Journal of Political Economy 19(4), pp.685-713.

Solé-Ollé A. (2005), Expenditure Spillovers and Fiscal Interactions: empirical evidence from local governments in Spain, Working Paper No3, Institut d'Economica de Barcelona, Barcelona.

Stastna S. (2009), Spatial Interdependence of Local Public Expenditures: selected evidence from the Czech Republic, AUCO Czech Economic Review 3(1), pp.7-25.

Stipanovic B. (2009), Local Government Finance System and Fiscal Equalization in the Republic of Serbia, The Fiscal Decentralization Initiative for Central and Eastern Europe.

UN (2000), Decentralization: conditions for success: lessons from Central and Eastern Europe and the Commonwealth of Independent States, Conference Proceedings, United Nations Division for Public Economics and Public Administration, New York.

UNDP (2009), Capacity Development for Quality Public Service Delivery at the Local Level in the Western Balkans, United Nations Development Programme, Bratislava.

World Bank (2008), Serbia – Delivery of Improved Local Service Project, Project Appraisal Document, Report No: 38921-YF, The World Bank, Washington DC.

Appendix

Table A.1. Global spatial association statistics by expenditure category, year and type of neighbourliness

Year	Nearest neighbours				Queen contiguity		Distance cut-off		
	k=2	k=4	k=6	k=8	1st order	2nd order	3%	5%	10%
	Total expenditures per capita								
2008	0.178	0.146	0.139	0.136	0.143	0.089	0.082	0.139	0.093
	(0.02)	(0.04)	(0.02)	(0.02)	(0.02)	(0.01)	(0.18)	(0.01)	(0.01)
2005	0.185	0.116	0.109	0.100	0.097	0.072	0.182	0.083	0.051
	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.03)	(0.02)
2002	0.082	0.044	0.069	0.056	0.061	0.011	0.098	0.038	-0.012
	(0.11)	(0.18)	(0.06)	(0.07)	(0.09)	(0.27)	(0.04)	(0.16)	(0.49)
1999	0.088	0.089	0.053	0.056	0.081	0.046	0.096	0.079	0.058
	(0.12)	(0.08)	(0.14)	(0.12)	(0.08)	(0.02)	(0.12)	(0.03)	(0.01)
	Social expenditures per capita								
2008	0.215	0.180	0.171	0.152	0.176	0.102	0.110	0.156	0.108
	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.09)	(0.01)	(0.01)
2005	0.168	0.081	0.100	0.111	0.105	0.077	0.199	0.103	0.054
	(0.02)	(0.07)	(0.02)	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)
2002	0.08	0.03	0.05	0.04	0.05	0.01	0.11	0.03	-0.01
	(0.14)	(0.27)	(0.12)	(0.12)	(0.17)	(0.28)	(0.01)	(0.17)	(0.39)
1999	0.029	0.038	0.017	0.016	0.038	0.054	0.078	0.034	0.054
	(0.38)	(0.21)	(0.33)	(0.32)	(0.23)	(0.05)	(0.15)	(0.13)	(0.02)
	Social expenditures share to total								
2008	0.128	0.073	0.094	0.090	0.152	0.062	0.061	0.080	0.063
	(0.06)	(0.08)	(0.02)	(0.01)	(0.01)	(0.04)	(0.25)	(0.02)	(0.03)
2005	0.032	-0.006	0.028	0.058	0.046	0.032	0.105	0.065	0.029
	(0.27)	(0.46)	(0.21)	(0.07)	(0.14)	(0.13)	(0.07)	(0.05)	(0.04)
2002	-0.012	-0.029	-0.035	-0.023	-0.025	-0.013	0.058	-0.025	0.003
	(0.45)	(0.29)	(0.21)	(0.3)	(0.33)	(0.42)	(0.24)	(0.34)	(0.32)
1999	0.036	0.006	-0.005	0.006	0.018	0.004	0.057	0.021	0.021
	(0.27)	(0.43)	(0.5)	(0.38)	(0.34)	(0.33)	(0.17)	(0.28)	(0.06)

Table A.2. Determinants of municipal social expenditures – stepwise deletion

	Social spending per capita				Social spending share to total			
	1999	**2002**	**2005**	**2008**	**1999**	**2002**	**2005**	**2008**
Density	0.0032	-0.0014	0.0000	0.0011	0.0006	0.0002	0.0004	-0.0002
	(0.000)	(0.236)	(0.975)	(0.007)	(0.003)	(0.316)	(0.108)	(0.196)
	-2.204	4.037	-0.024	-0.007	0.417	0.875	-0.012	0.004
Youth share	(0.105)	(0.090)	(0.241)	(0.425)	(0.291)	(0.055)	(0.010)	(0.280)
Care for	2.715	7.227	4.766	5.106	-0.563	1.494	-0.539	-0.239
elderly	(0.421)	(0.203)	(0.426)	(0.011)	(0.567)	(0.171)	(0.698)	(0.777)
Universities	-0.062	-0.032	-0.026	0.005	-0.012	-0.008	-0.008	-0.002
	(0.000)	(0.134)	(0.059)	(0.267)	(0.004)	(0.053)	(0.014)	(0.311)
Service	-0.523	-0.447	0.033	-0.084	-0.086	-0.094	-0.005	-0.002
orientation	(0.000)	(0.009)	(0.601)	(0.013)	(0.041)	(0.004)	(0.746)	(0.864)
Inactivity	-0.343	-0.703	-0.596	-0.826	-0.079	0.077	0.035	-0.160
	(0.030)	(0.010)	(0.245)	(0.000)	(0.085)	(0.138)	(0.771)	(0.074)
Central	2.048	4.723	-1.973	-0.446	0.027	-0.835	-0.274	0.079
transfers	(0.397)	(0.099)	(0.000)	(0.001)	(0.970)	(0.127)	(0.002)	(0.140)
Strongest	0.090	0.625	0.398	0.777	-0.042	-0.086	-0.028	0.062
party	(0.830)	(0.391)	(0.543)	(0.000)	(0.732)	(0.535)	(0.853)	(0.389)
Constant	6.595	7.942	9.368	9.933	0.618	0.511	0.771	0.882
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R-squared	0.2824	0.1997	0.2751	0.4579	0.1613	0.1416	0.1893	0.0907
Spatial lag	0.900	0.542	4.043	5.318	0.443	0.410	0.011	0.976
LM test (k=2)	(0.343)	(0.462)	(0.044)	(0.021)	(0.506)	(0.522)	(0.916)	(0.323)
Spatial error	2.118	0.379	3.252	2.659	1.859	0.856	0.013	1.264
LM test (k=4)	(0.146)	(0.538)	(0.071)	(0.103)	(0.173)	(0.355)	(0.911)	(0.261)
Spatial lag	2.138	0.045	1.461	4.823	0.422	1.452	0.640	0.448
LM test (k=2)	(0.144)	(0.832)	(0.227)	(0.028)	(0.516)	(0.228)	(0.424)	(0.503)
Spatial error	3.512	0.012	0.996	1.336	1.442	3.505	0.627	0.531
LM test (k=4)	(0.061)	(0.912)	(0.318)	(0.248)	(0.300)	(0.061)	(0.428)	(0.466)

Table A.3. Determinants of municipal social expenditures – full model

	Social spending per capita				Social spending share to total			
	1999	**2002**	**2005**	**2008**	**1999**	**2002**	**2005**	**2008**
Population	0.1747	0.2674	0.0959	-0.1044	0.0948	0.0883	0.0871	-0.0250
	(0.004)	(0.016)	(0.377)	(0.009)	(0.000)	(0.000)	(0.000)	(0.137)
Density	0.0008	-0.0039	-0.0015	0.0016	-0.0003	-0.0006	-0.0004	-0.0001
	(0.312)	(0.010)	(0.308)	(0.001)	(0.136)	(0.016)	(0.244)	(0.771)
Care for poor	0.1629	-10.68	-0.021	0.5308	1.0946	-2.226	0.6746	0.7555
	(0.977)	(0.104)	(0.996)	(0.609)	(0.477)	(0.055)	(0.493)	(0.089)
Care for	8.1852	18.091	9.3173	4.4240	0.4468	3.9466	1.1720	-1.292
	(0.069)	(0.018)	(0.277)	(0.071)	(0.718)	(0.003)	(0.531)	(0.215)
Inactivity	-0.263	-0.297	-0.134	-0.779	-0.034	0.0548	0.2213	-0.218
	(0.065)	(0.575)	(0.830)	(0.001)	(0.389)	(0.558)	(0.108)	(0.025)
Youth pop	-10.74	-6.143	-0.063	-0.024	-1.245	-0.326	-0.020	0.0098
	(0.000)	(0.288)	(0.104)	(0.098)	(0.049)	(0.749)	(0.022)	(0.109)
Retirees	-5.381	-5.064	-3.383	-1.423	-1.008	-0.594	-0.581	0.347
	(0.000)	(0.055)	(0.119)	(0.058)	(0.001)	(0.200)	(0.221)	(0.276)
Road density	0.0658	0.0413	0.0476	-0.0269	0.0411	0.0670	0.0279	0.0029
	(0.462)	(0.804)	(0.758)	(0.628)	(0.098)	(0.024)	(0.410)	(0.902)
Schools	14.219	91.872	-50.30	-0.849	-9.457	-3.723	-17.12	-13.43
	(0.843)	(0.308)	(0.642)	(0.979)	(0.633)	(0.814)	(0.470)	(0.341)
Universities	-0.0601	-0.0357	-0.0245	0.0084	-0.0131	-0.0085	-0.0088	-0.0016
	(0.000)	(0.099)	(0.104)	(0.076)	(0.000)	(0.027)	(0.008)	(0.422)
Service	-0.2430	-0.2984	0.0443	-0.0651	-0.0143	-0.0548	-0.0010	-0.0079
	(0.068)	(0.094)	(0.510)	(0.052)	(0.696)	(0.081)	(0.943)	(0.576)
Transfers	0.1802	5.9341	-1.5428	-0.5082	-0.6456	-0.5399	-0.0922	0.0312
	(0.935)	(0.039)	(0.001)	(0.001)	(0.293)	(0.285)	(0.337)	(0.624)
Debt burden	-0.8562	0.5620	3.0359	0.7419	-1.1916	-0.1310	1.0536	-0.8204
	(0.701)	(0.897)	(0.559)	(0.378)	(0.055)	(0.865)	(0.355)	(0.024)
Right-wing	-0.2211	-0.9522	-0.5756	-0.0537	-0.1332	-0.2317	-0.0590	0.0318
	(0.456)	(0.084)	(0.257)	(0.690)	(0.106)	(0.018)	(0.595)	(0.579)
Majority	-0.4740	-0.3368	0.1569	0.0855	-0.1234	-0.1737	-0.1043	0.0475
	(0.243)	(0.684)	(0.866)	(0.341)	(0.272)	(0.235)	(0.608)	(0.216)
Fragmentatio	-0.5828	-1.5776	0.6103	-0.7589	0.2447	-0.0004	0.0344	-0.1772
	(0.677)	(0.544)	(0.804)	(0.183)	(0.528)	(0.999)	(0.949)	(0.465)
Strongest	1.1721	2.8136	0.8027	1.1192	0.1421	0.3247	0.2625	0.0894
	(0.220)	(0.104)	(0.625)	(0.018)	(0.590)	(0.286)	(0.465)	(0.655)
Constant	7.0827	7.5014	9.6101	11.5128	0.1064	-0.0452	-0.0057	1.1006
	(0.000)	(0.0001)	(0.000)	(0.000)	(0.701)	(0.890)	(0.987)	(0.000)
R-squared	0.4987	0.3053	0.3034	0.5313	0.4717	0.3700	0.3099	0.2055
Spatial lag LM test (k=2)	0.0526	0.1157	3.3202	1.6875	0.1806	1.3123	0.0385	0.4713
	(0.819)	(0.734)	(0.068)	(0.194)	(0.671)	(0.252)	(0.844)	(0.492)
Spatial error LM test (k=4)	0.5883	0.3337	3.8410	1.0074	0.0176	1.0996	0.4188	0.2851
	(0.443)	(0.564)	(0.050)	(0.316)	(0.894)	(0.294)	(0.518)	(0.593)
Spatial lag LM test (k=2)	0.0430	0.0382	1.0125	0.7841	0.0184	1.5037	0.2976	0.0286
	(0.836)	(0.845)	(0.314)	(0.376)	(0.892)	(0.220)	(0.585)	(0.866)
Spatial error LM test (k=4)	0.7706	0.0002	0.9752	0.0018	0.1081	2.5391	0.3381	0.0077
	(0.380)	(0.988)	(0.323)	(0.966)	(0.742)	(0.111)	(0.561)	(0.930)

Table A.4. Spatial dependence in total municipal expenditures – k=2

	1999		2002		2005		2008	
Population	-0.01424		0.078945		-0.04333		-0.06874	
	(0.725147)				(0.250272)		(0.48301)	
Density	0.001557	0.002165	-0.00086	-0.00045	0.000497	0.000449	0.001678	0.001351
	(0.002948)	(0.000002)	(-0.91406)	(0.545769)	(0.552961)	(0.478112)	(0.0007)	(0.000957)
Care for poor	-2.14149		-6.06237		-1.43864		-0.38617	
	(0.564832)				(0.135977)		(0.573547)	
Care for elderly	7.10413	3.83526	11.2526	5.99225	7.70414	6.96697	6.13946	5.57892
	(0.017613)	(0.078128)	(0.016254)	(0.089195)	(0.112767)	(0.045342)	(0.012004)	(0.006123)
Inactivity	-0.18081	-0.16416	-0.51972	-0.94601	-0.78251	-0.83713	-0.50976	-0.64497
	(0.055852)	(0.104832)	(0.115183)	(0)	(0.027834)	(0.004977)	(0.023829)	(0.002734)
Youth pop	-8.84434	-3.26339	-3.80273	1.96064	-0.01645	0.000375	-0.0338	-0.00931
	(0)	(0.000264)	(0.289509)	(0.183188)	(0.455931)	(0.97444)	(0.018673)	(0.281576)
Retirees	-3.66399		-2.76659		-146.085		-179.134	
	(0)		(0.090007)		(0.237886)		(0.017043)	
Road density	-0.02514		-0.08747		-0.01895		-0.02361	
	(0.675073)		(0.39759)				(0.829928)	
Schools density	30.9907		95.2485		0.347457		17.8842	
	(0.518514)		(0.088828)		(0.995496)		(0.589071)	
Universities	-0.03464	-0.04012	-0.02734	-0.02299	-0.01684	-0.01886	0.009953	0.007294
	(0.000052)	(0.000009)	(0.042306)	(0.082349)	(0.048387)	(0.020105)	(0.035676)	(0.133244)
Service orientation	-0.23659	-0.37584	-0.18687	-0.22307	0.040398	0.040857	-0.05634	-0.0799
	(0.007662)	(0.000054)	(0.089811)	(0.034493)	(0.29023)	(0.273693)	(0.091329)	(0.019001)
Transfers	1.21539	1.56375	6.80854	6.54371	-0.94308	-0.97837	-0.53034	-0.51571
	(0.412745)	(0.316853)	(0.000127)	(0.000219)	(0.000154)	(0.000004)	(0.000405)	(0.00006)
Debt burden	1.24108		-0.9558		0.433469		1.83465	
	(0.406126)		(0.724383)	(0.88326)			(0.030809)	
Right-wing	0.021634		-0.29629		-0.34328		-0.0921	
	(0.913309)		(0.384686)		(0.233439)		(0.494044)	
Majority	0.083418		0.105101		0.306204		0.033267	
	(0.758559)	(0.838456)	(0.562308)		(0.712361)			
Fragmentation	-0.9657		-1.31188		0.730381		-0.5092	
	(0.303214)		(0.416953)	(0.601038)	(0.371251)			
Strongest party	0.780622	0.188671	1.68361	0.700176	-0.0286	0.31147	0.982026	0.693243
	(0.221935)	(0.485167)	(0.116243)	(0.1218)	(0.975552)	(0.413712)	(0.036739)	(0.000063)
Constant	8.80783	6.6175	8.09053	7.63316	8.98126	7.69842	10.6574	9.14342
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Spatial lag of dependent	2.1E-05	0.080171	0.090832	0.117208	0.179881	0.200154	0.063354	0.092385
	(0.999781)	(0.318431)	(0.2175)	(0.117073)	(0.023471)	(0.010713)	(0.404641)	(0.22364)
R-squared	0.4676	0.3349	0.3767	0.3261	0.2884	0.2687	0.5289	0.4672
Spatial error LM test (k=2)	1.204607	0.044567	0.464187	0.689407	0.434903	0.007984	0.05628	0.104302
	(0.272403)	(0.832803)	(0.495673)	(0.406366)	(0.509593)	(0.928801)	(0.812476)	(0.746726)
Spatial error LM test (k=4)	1.035246	1.273421	0.156017	0.255675	0.021763	0.008829	0.463885	0.315332
	(0.30893)	(0.259126)	(0.692851)	(0.613107)	(0.882718)	(0.925137)	(0.495814)	(0.574427)

Table A.5. Spatial dependence in total municipal expenditures – k=4

	1999		2002		2005		2008	
Population	-0.01769		0.081281		-0.03667		-0.07103	
	(0.663029)		(0.237974)		(0.556442)		(0.077755)	
Density	0.001551	0.002177	-0.00086	-0.00044	0.000539	0.000527	0.001703	0.001371
	(0.003017)	(0.000002)	(0.364407)	(0.560168)	(0.524113)	(0.409343)	(0.000573)	(0.00081)
Care for poor	-2.02847		-6.46923		-1.67242		-0.4587	
	(0.585208)		(0.112286)		(0.516277)		(0.660824)	
Care for elderly	7.12037	3.7736	11.6281	6.15504	8.56172	7.6	6.15839	5.48765
	(0.017236)	(0.081698)	(0.013197)	(0.082451)	(0.080532)	(0.030484)	(0.011937)	(0.007129)
Inactivity	-0.1809	-0.16687	-0.51031	-0.94761	-0.75168	-0.79849	-0.50499	-0.64918
	(0.055427)	(0.097663)	(0.122863)	(0)	(0.035959)	(0.007916)	(0.025693)	(0.002632)
Youth pop	-9.08747	-3.27232	-4.00625	1.87752	-0.01856	-0.00065	-0.03464	-0.01047
	(0)	(0.00023)	(0.265435)	(0.205829)	(0.404725)	(0.95639)	(0.016696)	(0.225409)
Retirees	-3.78423		-2.83841		-149.286		-180.972	
	(0)		(0.083345)		(0.233712)		(0.017593)	
Road density	-0.02749		-0.09085		-0.01482		-0.02788	
	(0.646122)		(0.380254)		(0.867455)		(0.618934)	
Schools density	32.0505		98.9127		4.92152		18.0651	
	(0.504079)		(0.078156)		(0.936753)		(0.586148)	
Universities	-0.03385	-0.04037	-0.02783	-0.02332	-0.01748	-0.01931	0.010075	0.007098
	(0.00008)	(0.000007)	(0.040495)	(0.079859)	(0.042421)	(0.018304)	(0.034145)	(0.144779)
Service orientation	-0.23721	-0.36935	-0.18609	-0.22099	0.040694	0.042131	-0.05721	-0.08143
	(0.00749)	(0.000068)	(0.091767)	(0.037215)	(0.290491)	(0.263311)	(0.087148)	(0.017071)
Transfers	1.21839	1.66308	6.70539	6.43118	-0.96119	-1.00241	-0.53154	-0.50553
	(0.410999)	(0.284576)	(0.000166)	(0.0003)	(0.000128)	(0.000003)	(0.00043)	(0.000093)
Debt burden	1.20406		-0.7624		0.126154		1.77827	
	(0.419501)		(0.77885)		(0.966179)		(0.036582)	
Right-wing	0.021058		-0.31797		-0.37214		-0.0905	
	(0.915486)		(0.351868)		(0.199858)		(0.502725)	
Majority	0.06815		0.122604		0.283903		0.032112	
	(0.80148)		(0.812442)		(0.593817)		(0.721819)	
Fragmentation	-1.04051		-1.19648		0.830642		-0.55107	
	(0.267835)		(0.45989)		(0.554767)		(0.334337)	
Strongest party	0.83427	0.167903	1.59035	0.661003	-0.09528	0.276365	1.00837	0.682091
	(0.192584)	(0.532839)	(0.138685)	(0.145799)	(0.919268)	(0.472137)	(0.032372)	(0.000087)
Constant	9.23404	6.2012	7.99107	7.62594	8.79467	7.52128	10.901	9.0904
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Spatial lag of dependent	-0.05174	0.14588	0.105269	0.120317	0.193987	0.21905	0.042108	0.100204
	(0.625986)	(0.166328)	(0.316037)	(0.256781)	(0.064232)	(0.034571)	(0.675693)	(0.311304)
R-squared	0.4682	0.3383	0.375	0.3221	0.2829	0.2627	0.5277	0.4662
Spatial error LM test (k=2)	0.714556	0.173423	0.172332	0.903632	0.122585	0.015624	0.33055	0.508999
	(0.397935)	(0.677087)	(0.678047)	(0.34181)	(0.726247)	(0.900528)	(0.565336)	(0.475573)
Spatial error LM test (k=4)	0.212435	0.24211	0.88969	2.009303	1.90333	1.040412	0.506758	0.092778
	(0.644866)	(0.622686)	(0.345561)	(0.156337)	(0.167706)	(0.307726)	(0.476546)	(0.760674)

Table A.6. Spatial dependence in social municipal expenditures – k=2

	1999		2002		2005		2008	
Population	0.177097		0.269767		0.117125		-0.09443	
	(0.001667)		(0.008768)		(0.240765)		(0.010158)	
Density	0.000805	0.003275	-0.00392	-0.0014	-0.00134	1.49E-05	0.001532	0.001034
	(0.269779)	(0.000002)	(0.005591)	(0.228277)	(0.324201)	(0.988432)	(0.000818)	(0.006058)
Care for poor	0.128173		-10.4816		0.461267		0.529024	
	(0.980278)		(0.085872)		(0.911205)		(0.583187)	
Care for elderly	8.21235	2.84217	17.915	7.22489	8.59738	4.69767	4.44672	5.07427
	(0.04901)	(0.380952)	(0.010824)	(0.186193)	(0.274063)	(0.407413)	(0.049187)	(0.006868)
Inactivity	-0.26124	-0.34217	-0.30998	-0.70664	-0.3147	-0.73545	-0.79306	-0.84926
	(0.047453)	(0.02324)	(0.531282)	(0.006767)	(0.585705)	(0.130049)	(0.000139)	(0.000018)
Youth pop	-10.6835	-2.23082	-6.01939	3.76759	-0.05732	-0.0243	-0.02079	-0.00493
	(0.000001)	(0.088998)	(0.264151)	(0.099515)	(0.108936)	(0.203116)	(0.11742)	(0.535606)
Retirees	-5.32834		-4.89719		-251.672		-127.027	
	(0)		(0.046424)		(0.210296)		(0.066936)	
Road density	0.066096		0.045116		0.051033		-0.01439	
	(0.428993)		(0.771165)		(0.720295)		(0.781346)	
Schools density	15.413		89.1963		-35.1004		-2.01981	
	(0.817774)		(0.288322)		(0.72466)			
Universities	-0.06058	-0.06319	-0.03617	-0.03241	-0.02932	-0.02972	0.008055	0.005033
	(0)	(0.000003)	(0.074037)	(0.113826)	(0.033989)	(0.024572)	(0.065833)	(0.261261)
Service orientation	-0.24358	-0.52166	-0.2953	-0.43641	0.049846	0.041608	-0.06495	-0.07947
	(0.04894)	(0.00017)	(0.074102)	(0.007609)	(0.420163)	(0.493813)	(0.035237)	(0.011427)
Transfers	0.153673	1.90789	5.92168	4.72122	-1.48893	-1.84829	-0.4964	-0.42575
	(0.940755)	(0.412107)	(0.026464)	(0.085382)	(0.000227)	(0)	(0.000335)	(0.000326)
Debt burden	-0.8571		0.458174		3.41314		0.883055	
	(0.680625)		(0.910346)	(0.474961)	(0.260739)			
Right-wing	-0.22008		-0.95437		-0.62005		-0.05181	
	(0.427003)		(0.062133)		(0.183342)		(0.677327)	
Majority	-0.4693		-0.34056		0.070601		0.085816	
	(0.214648)	(0.66011)			(0.934199)		(0.303709)	
Fragmentation	-0.56343		-1.56514		0.809847		-0.68258	
	(0.666507)		(0.518589)	(0.719849)	(0.194891)			
Strongest party	1.15364	0.062827	2.80522	0.605902	0.701278	0.382437	1.06416	0.743617
	(0.195281)	(0.876055)	(0.081248)	(0.387416)	(0.641959)	(0.537795)	(0.014371)	(0.000003)
Constant	6.9267	6.14814	7.22992	7.54967	7.88783	8.09249	10.4216	8.35049
	(0)	(0)	(0.000127)	(0)	(0.000002)	(0)	(0)	(0)
Spatial lag of dependent	0.018109	0.07839	0.025676	0.054974	0.151262	0.159574	0.097755	0.165967
	(0.802456)	(0.332329)	(0.748589)	(0.508136)	(0.060697)	(0.045817)	(0.183518)	(0.022642)
R-squared	0.4989	0.2853	0.3056	0.2015	0.3137	0.288	0.5352	0.4716
Spatial error LM test (k=2)	2.478315	1.864261	0.362568	0.093743	1.237637	0.104697	0.000028	0.270442
	(0.115426)	(0.172134)	(0.547083)	(0.759472)	(0.265927)	(0.746265)	(0.995801)	(0.603035)
Spatial error LM test (k=4)	1.756605	2.554439	0.097119	1.082176	0.393347	0.985057	0.826625	0.303512
	(0.185049)	(0.109985)	(0.755315)	(0.298211)	(0.530545)	(0.320954)	(0.36325)	(0.581689)

Table A.7. Spatial dependence in social municipal expenditures – k=4

	1999		2002		2005		2008	
Population	0.172803		0.270137		0.114447		-0.0964	
	(0.002247)		(0.008694)		(0.257451)		(0.009584)	
Density	0.000767	0.003353	-0.00392	-0.0014	-0.00135	7.49E-05	0.001583	0.001067
	(0.295245)	(0.000001)	(0.006253)	(0.229492)	(0.326954)	(0.94281)	(0.000561)	(0.004722)
Care for poor	0.22444		-10.6714		0.020535		0.434394	
	(0.965518)		(0.080719)		(0.996088)		(0.655169)	
Care for elderly	8.19296	2.70105	18.1803	7.3441	10.0708	5.53055	4.40164	4.85401
	(0.049615)	(0.402747)	(0.009729)	(0.179943)	(0.205687)	(0.336161)	(0.052574)	(0.010013)
Inactivity	-0.26316	-0.34332	-0.30208	-0.70414	-0.20851	-0.63242	-0.79701	-0.86481
	(0.04592)	(0.022187)	(0.541922)	(0.007075)	(0.721561)	(0.19891)	(0.000137)	(0.000014)
Youth pop	-10.8372	-2.24802	-6.11204	3.92868	-0.06007	-0.02427	-0.02121	-0.00672
	(0)	(0.084483)	(0.257021)	(0.087586)	(0.098482)	(0.210172)	(0.114285)	(0.39899)
Retirees	-5.452		-4.97428		-283.213		-122.821	
	(0)		(0.044)				(0.16653)	
Road density	0.064833		0.042877		0.049942		-0.0174	
	(0.437775)		(0.782357)		(0.728699)		(0.737993)	
Schools density	13.5792		91.1069		-38.0384		-1.16609	
	(0.839149)		(0.278445)		(0.705849)		(0.969722)	
Universities	-0.05949	-0.06467	-0.0363	-0.03232	-0.028	-0.02878	0.00787	0.004551
	(0.000001)	(0.000001)	(0.075448)	(0.115746)	(0.046101)	(0.031619)	(0.073544)	(0.311637)
Service orientation	-0.24272	-0.51018	-0.29533	-0.44234	0.048203	0.040229	-0.06609	-0.08094
	(0.049749)	(0.00022)	(0.074212)	(0.00695)	(0.44093)	(0.513777)	(0.032846)	(0.010313)
Transfers	0.183033	1.9678	5.91944	4.71452	-1.53129	-1.92208	-0.4928	-0.39846
	(0.929495)	(0.395516)	(0.026521)	(0.086387)	(0.000174)	(0)	(0.000413)	(0.000839)
Debt burden	-0.84482		0.49523		3.04952		0.847674	
	(0.684934)		(0.903119)	(0.527873)	(0.282391)			
Right-wing	-0.22105		-0.95576		-0.62511		-0.05623	
	(0.424772)		(0.061948)		(0.184696)		(0.652823)	
Majority	-0.47769		-0.34184		0.050266		0.084374	
	(0.206851)	(0.659951)	(0.953683)		(0.3124)			
Fragmentation	-0.61131		-1.55274		0.807534		-0.74056	
	(0.640111)		(0.522129)	(0.723511)	(0.161242)			
Strongest party	1.19085	0.078074	2.79616	0.613665	0.699409	0.361631	1.10624	0.7253
	(0.181193)	(0.845772)	(0.082727)	(0.382271)	(0.646479)	(0.565051)	(0.011247)	(0.000006)
Constant	7.26258	5.72989	7.27499	7.76582	8.32443	8.37562	10.5179	8.12903
	(0)	(0)	(0.00032)	(0)	(0.000006)	(0)	(0)	(0)
Spatial lag of dependent	-0.0216	0.14807	0.02219	0.024108	0.109805	0.119401	0.089505	0.193296
	(0.831992)	(0.164168)	(0.843952)	(0.836078)	(0.320227)	(0.274674)	(0.354118)	(0.037472)
R-squared	0.4988	0.2887	0.3054	0.1998	0.3063	0.2793	0.5331	0.4695
Spatial error LM test (k=2)	1.607424	1.675306	0.121459	0.85382	0.085298	0.085215	0.904356	0.703927
	(0.204854)	(0.195549)	(0.727457)	(0.355474)	(0.770241)	(0.770351)	(0.341616)	(0.401467)
Spatial error LM test (k=4)	0.737256	0.26419	0.404129	0.453882	3.662345	2.190579	0.384855	0.157148
	(0.390541)	(0.607256)	(0.524964)	(0.500497)	(0.055655)	(0.138857)	(0.535016)	(0.691796)

**Figure A.1. Municipal expenditures per capita in Serbia – total spending**
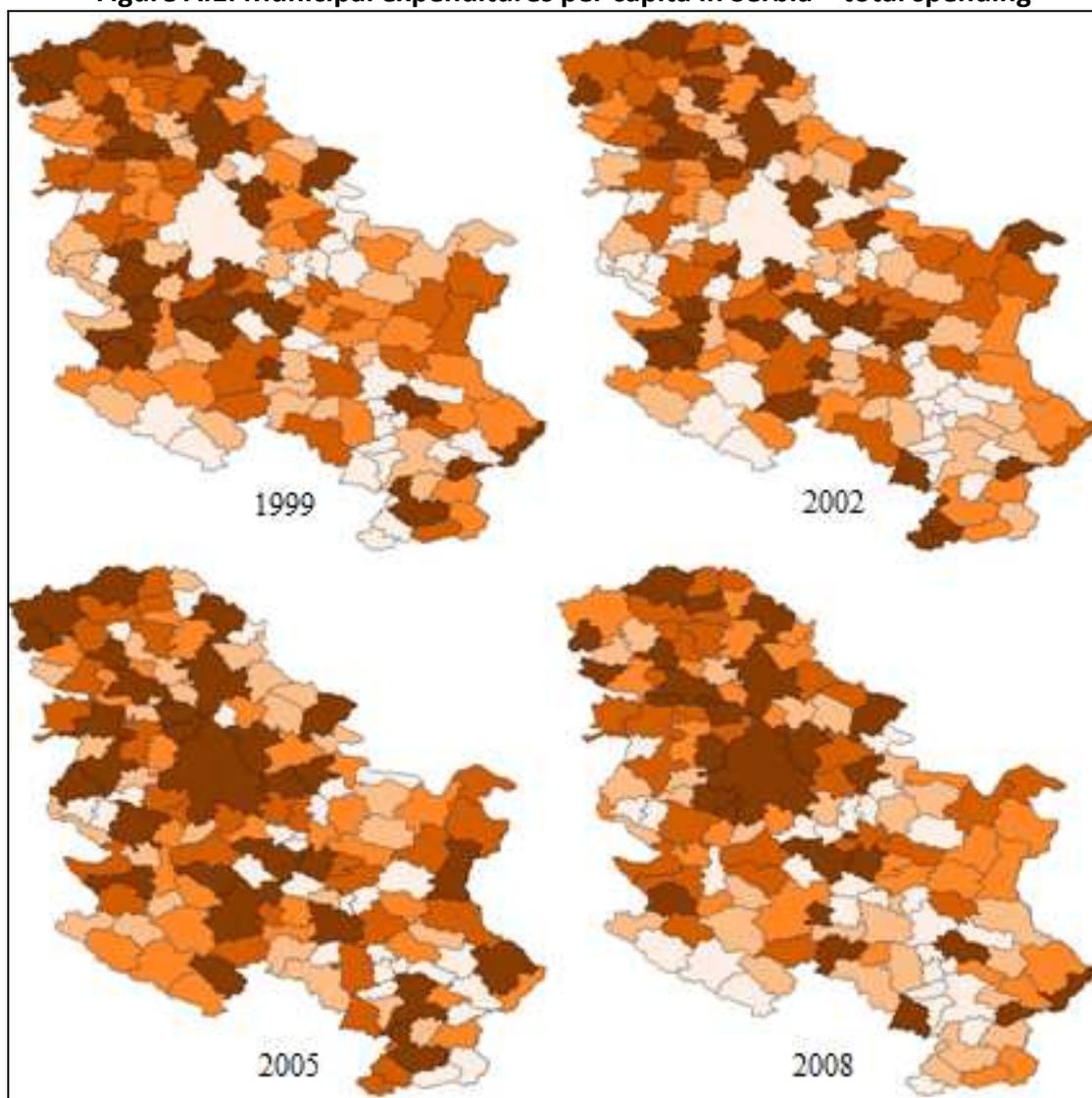
Figure A.2. Municipal expenditures per capita in Serbia – social spending