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THE IMPACT OF FISCAL DECENTRALISATION ON LOCAL ECONOMIC DEVELOPMENT IN SERBIA

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Abstract

This paper investigates the relationship between fiscal decentralisation and local economic development in Serbia, a transition country that has experienced spillover effects from the global financial crisis and the eurozone debt crisis, and is a candidate for accession to the European Union. Both fiscal decentralisation and prospects for economic development are likely to affect prospects for economic recovery and a successful EU integration process. The analysis is based upon a cross-section time-series regression model in which local economic development, proxied by the local employment rate, is the dependent variable. A set of independent control variables reveal the positive impact of public expenditure on local economic development, and especially the positive impact of education expenditure. The investment rate measured by the level of investment per capita from both public and private sources also has a positive and significant effect on the level of local economic development. Urban areas are also shown to have a higher employment rate than do more rural areas. The main conclusion of the research is that local economic development has been enhanced by fiscal decentralisation in Serbia.

Introduction

The global economic crisis has challenged the commitment of countries in transition to fiscal decentralisation, which was one of the key principles of public administration reform prior to the onset of the crisis (World Bank 2008; Bartlett et al., 2013; Kmezić et al., 2016a). With the first signs of the downturn, many central governments opted for policies of fiscal consolidation, with the reduction of general government public expenditure as a top policy priority (Koczan, 2015). Our interest in focusing on Serbia is that economic transition has been delayed and the country has suffered profound spillover effects from the global financial crisis and the eurozone debt crisis; it is also a country that is in the process of accession to the European Union. Successful efforts to promote local economic development are likely to boost prospects for economic recovery and the EU integration process, which is conditioned of creating a functioning market economy.

In 2009, Serbia introduced a set of centralising measures in response to the crisis, effectively abandoning the earlier policy of fiscal decentralisation that had been followed since the early 2000s (Levitas 2010; Avlijaš and Bartlett, 2011; Kmezić et al., 2016b). Between 2009 and 2016, the government continually reduced municipal revenues and eroded local government fiscal capacity under the pretext of achieving macroeconomic stability and fostering economic development. These measures had two dimensions. First, the central government reduced local government revenues by recentralising public finance to balance its own budget. Second, in order to support economic development the central government cut some municipal fees and charges with the aim of improving the local business climate by reducing the fiscal burden on business. Together, these reductions in local revenues endangered municipal capital investment and the delivery of local public services to citizens and businesses (Kmezić et al., 2016b). Such negative policy outcomes have brought into question whether the central government's measures directed at municipal fiscal capacity have been harmful to local economic development.

In this study we analyse the relationship between fiscal decentralisation and local economic development across the entire population of all 145 local government units (municipalities and cities) in Serbia. All indicators are calculated based on data published in the yearbook "Municipalities and Regions in the Republic of Serbia" of the Statistical Office of the Republic of Serbia, covering the period 2005-2014. These comprehensive and comparable data are not available for the years prior to 2005, so we restrict our analysis to the period 2005-2014. However, the data are informative as they correspond to the period of the relevant regulatory changes: (1) the period of fiscal

decentralisation, which lasted until 2009, and (2) the period of fiscal centralisation, which started in 2009. During the first phase, the government adopted important regulatory changes in the system of local government financing in favour of fiscal decentralisation, and in 2006 the Parliament passed the Law on Local Government Finance. This law was a milestone in the fiscal decentralisation process since it significantly increased the fiscal capacity and autonomy of Serbian cities and municipalities. However, the law was short-lived as the government started to suspend or alter its provisions in 2009. This second phase was triggered by the outbreak of the economic crisis. In order to restore the balance of its own budget, the government initiated a wave of ad hoc centralising measures, setting in motion a policy trend that is continuing to this day (Kmezić et al., 2016b). This study and its methodological approach are unique, as there has been no similar research analysing the case of Serbia or any other transition country in South East Europe.

Previous research

The literature on the relationship between fiscal decentralisation and economic development has provided contradictory results on the relationship between fiscal decentralisation and economic development. One group of studies has found a positive relationship between decentralisation and growth, a second group of studies has found a negative relationship, a third group has found no significant relationship, and a fourth group has yielded inconclusive results. It should be noted that the impact of fiscal decentralisation is often analysed together with the effects of political and administrative decentralisation. In the following paragraphs we set out a brief review of the main studies on the relationship between decentralisation and growth, organised according to the four sets of conclusions described above.

The first group of studies have identified a positive relationship between the level of fiscal decentralisation and the rate of economic growth. Thiessen (2003) examined high-income OECD countries for the period 1973-1998 cross-sectional regressions. He found that fiscal decentralisation increases economic growth up to a certain level. After that point is reached, the relationship becomes negative, suggesting an inverted U-shaped relationship between the two variables. He suggested that further research should focus on finding the optimal degree of fiscal decentralisation that maximises the growth rate. Similarly, Iimi (2005) found a significant positive impact of fiscal decentralisation on per capita GDP growth in an analysis of 51 countries with different levels of income for the period 1997-2001 using ordinary least squares (OLS) and instrumental variables (IV)

methods. Cantarero and Gonzalez (2009) examined a sample of Spanish regions between 1985 and 2004 using the IV approach and found that revenue decentralisation enhances economic growth; but they failed to detect a statistically significant link between expenditure decentralisation and growth. Gil-Serrate et al. (2011) also explored the relationship between revenue autonomy of Spanish regions and regional growth from 1984 to 2008 by estimating bivariate panel vector autoregressions (VAR). Their main finding was that revenue autonomy of regional governments has a marginal positive effect on regional growth because either the regions did not use the full potential of their revenue sources or revenue autonomy reached saturation point in 1999. Buser (2011) examined 20 high-income OECD countries over the period 1972-2005 using panel data regressions, and showed that an increase in public sector decentralisation is associated with higher levels of income. He found that decentralisation of revenues and expenditures to sub-national levels increases income at a decreasing rate, while the growth-enhancing effects of decentralisation are much greater when supported by a sound institutional environment. In a similar sample for the period 1995-2011, Blöchliger (2013) provided further evidence of a positive relationship between fiscal decentralisation and economic activity based on higher productivity and a better educated work force, since decentralised fiscal power leads to a higher share of spending on education and investment. The same author, together with Egert (2013) found a statistically significant positive relationship between fiscal decentralisation and GDP per capita and productivity in OECD countries, covering different periods between 1970 and 2010 by running bivariate regressions.

Even when decentralisation has been found to have a positive impact of local economic development, scholars have questioned whether some localities or regions stand to benefit more than others. If decentralisation is not associated with inclusive growth, it may be undesirable even if it has positive effects on economic growth overall. Among studies that have delved into this question some have found that decentralisation reduces inequality, while others have found that it increases inequality. Among the former group of studies, Canaleta et al. (2004) analysed the impact of both fiscal and political decentralisation on regional inequalities in 17 OECD countries using the OLS method. Their research revealed a strong negative relationship between decentralisation, in particular fiscal decentralisation, and regional inequalities. Ezcurra and Pascual (2008) employed a two-way fixed-effects panel data model to investigate the same relationship in a set of 132 regions in 12 EU countries over the period 1980-1999. Their findings showed that regional disparities decrease when fiscal decentralisation increases, especially when assisted with EU regional structural funds and trade openness. Calamai (2009) also studied the link between devolution and regional

disparities, focusing on Italy. He used both qualitative and quantitative (panel-data) methods and found a positive connection between the expansion of devolution and regional convergence, which is further strengthened by associational density, EU regional structural funds, and trade openness.

Other studies have found a more nuanced relationship between decentralisation and the reduction of inequality, with the effect depending on third factors such as the level of development and the quality of institutions. Rodriguez-Pose and Ezcurra (2009) used the IV method to examine the same relationship in 19 developed and 7 developing countries for the period 1990-2006. They found that the results depend on a country's level of development, its capacity for income redistribution, and the existing level of regional inequalities. The link is negative in high-income countries, meaning that decentralisation reduces regional inequalities. However, in low and medium-income countries, fiscal decentralisation leads to a rise in regional disparities. More recently, Kyriacou et al. (2015) analysed how fiscal decentralisation affects regional convergence in a sample of 24 OECD countries over the period 1984-2006. They found that fiscal decentralisation contributes to regional convergence in countries with high-quality institutions, but that it fosters regional inequalities in countries with poor systems of governance.

A second group of studies have found a negative relationship between the level of fiscal decentralisation and the rate of economic growth. Sagbas et al. (2005) examined the impact of fiscal decentralisation on economic growth in 67 provinces in Turkey over the period 1982-2002 based on a cross-section time series method using the Johansen co-integration procedure and VAR and found a negative association between fiscal decentralisation and economic growth. In a study of 16 Central and Eastern European countries over the period 1990-2004, Rodriguez-Pose (2009) showed that expenditures at (and transfers to) the sub-national level have a negative correlation with national rates of economic growth, while a poor institutional and legal environment exacerbates this effect; although he also found a moderate positive influence of locally imposed taxes on economic growth. Bodman (2011) analysed a sample of OECD countries over the period 1981-1998 using a newly developed measure of fiscal autonomy. Based on cross-sectional and panel data methods he found little evidence of a direct relationship between fiscal decentralisation and economic growth. Finally, Rodriguez-Pose and Ezcurra (2011) identified a significant negative association between fiscal decentralisation and economic growth in a sample of 21 OECD countries over the period 1990-2005 using the OLS method; they also identified a weak negative effect of political and administrative decentralisation.

A third group of studies find no significant relationship between fiscal decentralisation and economic growth. Woller and Phillips (1998) were unable to find any strong link between the two variables. In their analysis of 23 less developed countries during the period 1974-1991, they found a weak inverse relationship at best when controlling for business cycles by running the panel regressions for annual and for multi-year data. In this same group, Thornton (2007) focused on the relationship between fiscal decentralisation and economic growth in 19 OECD countries over the period 1980-2000 using cross-section time series regressions. He found that when the measure of fiscal decentralisation is own-source revenues over which sub-national governments have full discretion, the impact on economic growth is not statistically significant.

Among the fourth group of inconclusive studies, the useful literature review by Bardhan (2002) concluded that the literature was inconclusive both theoretically and empirically at that time. Martinez-Vazquez and McNab (2003) also conduct an extensive literature review. They drew a general conclusion that the findings of studies on the impact of fiscal decentralisation on economic growth are mixed and therefore inconclusive. Rodriguez-Pose and Gill (2005) reviewed the literature and the empirical studies concerning the effects of decentralisation on economic development and also found the overall consensus of findings to be inconclusive, while drawing attention to the possibility that decentralisation may lead to inefficiency, inequality and institutional burdens, but that the outcome depends sensitively on the level of government that is driving the decentralisation process. Rodriguez-Pose and Bwire (2004) use linear regression models to assess the link between devolution and regional economic growth in Germany, India, Italy, Mexico, Spain and the US from the early 1960s until 2000. They concluded that in most cases the degree of devolution is irrelevant for economic growth, except in the case of Mexico and the US, where it is associated with reduced economic efficiency. The same authors, together with Tijmstra (2009) found that decentralisation leads to an increase in current expenditure at the expense of capital expenditure in the same sample of countries excluding Italy, although the phenomenon was not observed in the USA. This reduction of capital expenditure was associated with lower economic growth in Germany, India and Mexico, where decentralisation was top-down; but not in Spain where devolution was driven from below. Nguyen and Anwar (2011) used panel regression methods to examine the link between fiscal decentralisation and economic growth in 61 provinces in Vietnam over the period 1997-2007, and found both positive and negative correlations. In the case of revenue decentralisation and capital expenditures, the association is positive and statistically significant; however, for decentralisation of current expenditure and intergovernmental transfers the relationship is negative.

In sum, the reviewed literature is not conclusive on the effect of decentralisation on economic growth or local economic development. It includes both macro analyses that focus on a group of countries, and mezzo analyses that examine a set of regions within one or a group of countries. In this paper we aim to enrich this debate by adding another mezzo-level study that explores the impact of fiscal decentralisation on economic development of the lowest tier of local government – the municipal tier. We analyse the case of Serbia, which is a unitary country with a simple vertical structure of government.[1] We aim contribute to knowledge by analysing this relationship in a transition country of South East Europe, since none of the existing studies examine the association between fiscal decentralisation and economic growth in any transition country in this region of Europe.

Methodology and data

In this paper we hypothesise that *fiscal decentralisation has a positive effect on local economic development in Serbia,* and correspondingly that the recentralisation of government revenues has harmed local economic development. The regression model, which we estimate has the following equation for model 1 which uses the local budget expenditure per capita as a proxy for the level of fiscal decentralisation in each municipality:

$$\ln(er_{it}) = \beta_0 + \beta_1 \ln(bexp_{it}) + \sum_{j=1}^{j=5}\beta_{j+1} \ln(exp_{jit}) + \sum_{t=1}^{t=9}\beta_{t+6} yr_t + \beta_{16}\, city_i + \varepsilon_{it} \qquad (1)$$

where:

er_{it} = employment rate in municipality i in year t

$bexp_{it}$ = local budget expenditure per capita in municipality i in year t (fiscal decentralisation indicator)

exp_{jit} = public expenditure per capita for each sector of expenditure j in municipality i in year t

yr_t = dummy variable for year (t=1 takes the value 1 for 2006 and 0 otherwise, and so on up to t=9); the year 2005 is the base year for the set of dummy variables

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[1] Serbia has an asymmetric form of fiscal federalism. The local level of government includes cities and municipalities as basic forms of local self-government. There is no regional government level. Only one part of the territory has a level of government that is between the central and local tier – the Autonomous Province of Vojvodina in the northern part of the country. This is why our study cannot focus on the regional, i.e. provincial level.

$city_i$ = a dummy variable which takes the value 1 if the local government unit is classified as a city, and 0 otherwise

j = sector of expenditure [investment; education, health, administration, sport and culture, other sectors]

ε_{it} = an error term, assumed to be normally distributed with mean zero

For the model 2, we use the same format except that the proxy for the level of fiscal decentralisation in each municipality or city is the ratio of local budget expenditure to total public expenditure in the municipality or city. The equation that is estimated in model 2 is of the form:

$$\ln(er_{it}) = \beta_0 + \beta_1\, fd_{it} + \sum_{j=1}^{j=5}\beta_{j+1}\ln(exp_{jit}) + \sum_{t=1}^{t=9}\beta_{t+6}yr_t + \beta_{16}\, city_i + \varepsilon_{it} \qquad (2)$$

where:

fd_{it} = the ratio of local budgetary expenditure to all public expenditure in the municipality in municipality i in year t (alternative fiscal decentralisation indicator)

All other symbols are the same as in model 1. We test these hypotheses by running cross-section time-series regressions between the dependent variable, local economic development proxied by the employment rate, the indicators of fiscal decentralisation and a set of other independent variables.[2]

We use the employment rate as our preferred indicator of the level of local economic development in each municipality. Unemployment has been a serious problem in Serbia for more than a decade. Before the crisis, the transition featured jobless growth, while the global economic crisis has led to mass layoffs (Bartlett, 2013; Bartlett and Uvalić, 2013; ILO, 2014; Cato Institute, 2014). Informal employment is also high, as workers are often registered as employed, and many employers only

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[2] As mentioned above, local economic development means more than the growth in economic output (Bell et al., 2005). An important aspect of development is the improvement of the welfare of citizens, which cannot be achieved with an increase of income alone because the growth of income does not necessarily correspond to a balanced distribution among the population (Blair, 1995). In the same vein, Sen (1999) asserts that development is about enhancing the quality of life and the freedoms that people enjoy. These considerations indicate that the use of the municipal GDP per capita would not capture all aspects of local economic development. In addition, this proxy is not calculated and reported at the local government level. The most frequently used alternatives are variables related to income. However, this option is even less suitable since a large part of the income is generated in the grey economy and is not formally registered.

report paying the minimum wage to avoid paying taxes and social security contributions. Also, Serbian local governments have aimed to attract and retain businesses in their municipality to secure jobs. This is why we have taken the local employment rate as the best way to measure local economic development. We define the employment rate in relation to the whole population of a municipality, rather than to the working age population due to the lack of available data at the municipal level. For the period 2005-2011 the municipal population size is estimated on the basis of the 2002 census and for 2012-2014, we use the estimated data based on the 2011 census. In the light of these considerations, we use employment rate per municipality as a proxy indicator for the level of local economic development.[3]

Figure 1: Distribution of log employment rate in Serbian municipalities, 2005-2014
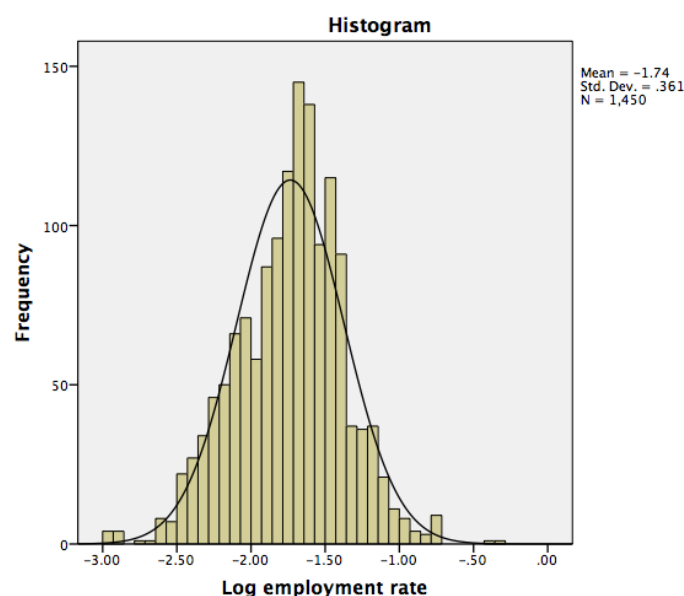
The distribution of the employment rate across municipalities is skewed due to the concentration of employment in more developed municipalities. For this reason we take the natural logarithm of the

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[3] The literature has primarily concentrated on the effects on economic growth or on regional inequalities. Economic growth is usually measured as the national or regional GDP per capita growth rate, depending on whether the study is structured around a macro- or a mezzo-level analysis (Rodriguez-Pose and Bwire, 2004; Iimi, 2005; Sagbas, 2005; Thornton, 2007; Ezcurra and Pascual, 2008; Rodriguez-Pose, 2009; Gil-Serrate et al. 2011; Blöchliger, 2013; Blöchliger and Egert, 2013; Kyriacou et al. 2015). Since economic development cannot be reduced to economic growth, as it represents more than the produced output and the generated income, the literature offers other measures of growth and development: GDP growth rate per worker (Thiessen, 2003); national per capita income in macro-level analyses (Sagbas, 2005; Buser, 2011; Kyriacou et al., 2015); the total investment share in GDP (Thiessen, 2003); growth of the capital stock (Bodman, 2011; Blöchliger and Egert, 2013); public investment (Blöchliger, 2013); investment in human capital (Bodman, 2011; Blöchliger, 2013; Blöchliger and Egert, 2013); or total factor productivity (Thiessen, 2003; Bodman, 2011; Blöchliger, 2013; Blöchliger and Egert, 2013).

employment rate as the dependent variable. This variable is approximately normally distributed as can be seen in Figure 1.

In developing an econometric model, we explored how other studies have measured fiscal decentralisation. In addition to observing the total amounts of these general categories, some authors have deepened their analyses by breaking down subnational expenditure and revenue into specific subcategories. For instance, some studies have examined the behaviour of capital and current expenditure as well as spending preferences by sector and their different effects on the determinants of economic growth (Waller and Phillips, 1998; Rodriguez-Pose and Ezcurra 2009, 2011; Nguyen and Anwar, 2011). In the same manner, in order to analyse the influence of specific revenue categories, some authors have looked into local fiscal autonomy (Bodman, 2011; Gil-Serrate et al. 2011), the behaviour of own-source revenues (Sagbas, 2005; Buser, 2011), or even more specifically, own-source taxes (Thornton, 2007; Blöchliger and Egert, 2013). On the other hand, other studies have aimed to isolate the impact of intergovernmental transfers and grants and have compared them to the effects of the other types of subnational revenues (Rodriguez-Pose, 2009; Nguyen and Anwar, 2011; Blöchliger and Egert, 2013). Furthermore, some studies have focused on general tax decentralisation, differentiating between the effects of taxes that are within the full discretion of subnational governments and those that are shared with the central level (Cantarero and Gonzalez, 2009; Rodriguez-Pose, 2009; Blöchliger and Egert, 2013).

Although there are many approaches to quantifying the level of fiscal decentralisation, existing studies usually opt for the share of subnational government expenditure in total government expenditure or the share of subnational government revenue in total government revenue. For the economic development variable, authors usually measure the impact of fiscal decentralisation on different determinants of economic growth. Most frequently, fiscal decentralisation is measured as the share of subnational expenditure in total (general) government expenditure or in GDP or, sometimes, in consolidated government expenditure (Woller and Phillips, 1998; Thiessen, 2003; Rodriguez-Pose and Bwire, 2004; Iimi, 2005; Sagbas, 2005; Ezcurra and Pascual, 2008; Calamai, 2009; Cantarero and Gonzalez, 2009; Rodriguez-Pose, 2009; Rodriguez-Pose et al., 2009; Rodriguez-Pose and Ezcurra, 2009; Buser, 2011; Nguyen and Anwar, 2011; Rodriguez-Pose and Ezcurra, 2011; Blöchliger, 2013; Blöchliger and Egert, 2013). Some authors have criticised this indicator as inadequate since it fails to capture the nuances related to different types of expenditure and the degree of autonomy of subnational spending (Ebel and Yilmaz, 2002; Rodden, 2004; Stegarescu,

2005). However, Rodriguez-Pose and Gill (2004) defended the use of this indicator, claiming that it is the best available indicator to gauge the level of fiscal decentralisation when resorting to secondary research methods. Some authors have enriched their models by including revenue-side indicators in their analyses (Waller and Phillips, 1998; Sagbas, 2005; Cantarero and Gonzalez, 2009; Buser, 2011; Nguyen and Anwar, 2011; Rodriguez-Pose and Ezcurra, 2011; Blöchliger, 2013; Kyriacou et al, 2015), while Buser (2011) also additionally looked into the average subnational revenue and expenditure shares.

In this paper, we measure the main independent variable, *fiscal decentralisation*, using local fiscal expenditure variables in line with the most common approaches in the literature. We adopt two definitions of fiscal decentralisation:

1. The ratio of the total local expenditure to total general government expenditure on the territory of the municipality.[4]

2. The logarithm of total local government expenditure per capita in the municipality.

In addition, we use a number of control variables to capture the effects of other factors that influence local economic development. The literature reviewed above includes an abundance of control variables in econometric models developed to examine the relationship between decentralisation and economic growth. These include the initial level of the GDP (Waller and Phillips, 1998) or GDP per capita (Cantarero and Gonzalez, 2009; Rodriguez-Pose, 2009; Bodman, 2011; Rodriguez-Pose and Ezcurra, 2011), , different human capital indicators (Waller and Phillips, 1998; Cantarero and Gonzalez, 2009; Nguyen and Anwar, 2011), including the illiteracy rate (Rodriguez-Pose, 2009) the initial secondary school enrolment ratio (Waller and Phillips, 1998; Bodman, 2011) and the average years of schooling of the total population aged 15 years and over (Rodriguez-Pose and Ezcurra, 2011), the size of the public sector (Canaleta et al., 2004; Sagbas, 2005; Rodriguez-Pose and Ezcurra, 2011), an indicator of trade openness (Waller and Phillips, 1998; Ezcurra and Pascual, 2008; Calamai, 2009; Rodriguez-Pose and Ezcurra, 2009; Rodriguez-Pose and Ezcurra, 2011), the amount of EU regional structural funds (Calamai, 2009; Ezcurra and Pascual,2008), an index of institutional quality (Buser, 2011) and population growth (Waller and Phillips, 1998; Iimi, 2005; Cantarero and Gonzalez, 2009; Rodriguez-Pose, 2009; Bodman, 2011; Rodriguez-Pose and Ezcurra,

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[4] Where total general government expenditure includes total spending on education, health, social protection, culture, sports, administration, and all other public expenditure regardless of the source, whether central, provincial or local government budgets.

2011). In addition to these control variables, dummy variables often play an important role, such as whether the country transitioned from a socialist to a capitalist system (Rodriguez-Pose and Ezcurra, 2009) or whether an area is metropolitan or non-metropolitan (Sagbas, 2005).

We use a set of additional independent variables as control variables that may affect the level of local economic development, some of which have been used in the literature reviewed above. First, to measure one of the most widely employed determinants of economic development – investment – we use the total amount of public and private investment per capita per local government unit. Similar variables are used to measure the level of investment in several studies, including the ratio of investment to GDP (Waller and Phillips, 1998; Rodriguez-Pose, 2009; Bodman, 2011), the ratio of investment to income (Sagbas, 2005), physical capital measured as the net capital stock per unit of GDP (Cantarero and Gonzalez, 2009; Rodriguez-Pose and Ezcurra, 2011).

Second, we also take into account policy preferences per local government unit for education, health, social protection, culture, sports, administration and all other public expenditure. These funds include sources from all tiers of government - central, provincial and local government budgets. The overall general government expenditure on education per local government unit is used as a proxy for investment in human capital development at the local level.

Third, to capture the difference between urban centres and the less urbanised and rural communities we use the dummy variable "City" which takes a value of 1 for a local government defined as a city and 0 for a non-city. This corresponds to the division of local government units in Serbia into cities and municipalities. Finally, we use dummy variables for each observed year to control for other macroeconomic factors that affect employment over the period 2005-2014.

The evolution of the means of the variables used in the analysis over the period 2005 to 2014 is shown in Table 1. As mentioned above, the dependent variable is the employment rate (measured in relation to total population). Due partly to the late transition process in Serbia (Uvalić, 2010) the employment rate has been in continuous decline, falling from a mean value of 21% in 2005 to 17.8% in 2014. In the first part of this period, from 2005 to 2008, the economy grew at an average rate of 5% per annum, while the employment rate hardly changed. Following the onset of the economic crisis in 2009, the employment rate plummeted to a trough of 17.4% in 2011 before beginning a gradual and slow recovery.

Table 1: Means of variables used in the regression analysis (000 dinars)

Year	Employment per capita (employment rate)	Budget expenditure per capita	Ratio Budgetary exp / All expenditure	Investment per capita	Education expenditure per capita	Health expenditure per capita	Public Administration expenditure per capita	Sport & Culture expenditure per capita	Other expenditure per capita
2005	0.210	8.93	0.47	16.56	6.80	7.97	6.28	0.94	2.07
2006	0.203	11.70	0.41	17.45	8.61	10.12	8.94	0.73	4.49
2007	0.198	14.04	0.41	23.07	10.70	13.05	8.71	0.93	5.18
2008	0.198	16.60	0.40	25.52	13.02	15.54	10.96	1.07	6.64
2009	0.185	15.63	0.37	21.51	13.08	16.46	11.04	1.10	5.84
2010	0.176	17.87	0.43	22.26	13.51	16.47	11.60	1.11	6.24
2011	0.174	21.19	0.46	24.43	14.75	18.15	13.04	1.26	6.67
2012	0.179	31.91	0.61	36.53	16.35	19.86	15.75	1.50	8.72
2013	0.178	28.92	0.52	29.01	17.18	21.38	16.58	1.57	7.87
2014	0.178	28.76	0.53	29.51	16.57	21.01	16.25	1.71	6.41
Total	**0.188**	**19.55**	**0.46**	**24.58**	**13.06**	**16.00**	**11.91**	**1.19**	**6.01**

Source: "Municipalities and Regions in the Republic of Serbia", Statistical Office of the Republic of Serbia. Note: the data refer to mean values of variables across 145 municipalities.

In the analysis, we use two different indicators of fiscal decentralisation (see Table 1). The *first indicator* is local budget expenditure per capita, which averaged 19,550 dinars per capita over the period as a whole, and which has been in decline since 2012 due to the post-crisis policy shift away from the earlier enthusiasm for fiscal decentralisation. This indicator captures the absolute level of resources available to local municipalities that could be applied for discretionary expenditure to influence local economic development. It is influenced by overall fiscal policies, with fiscal consolidation being particularly important since the country entered into a series of post-crisis agreements with the IMF to impose austerity measures. The *second indicator* of fiscal decentralisation is the ratio of local budget expenditure to total public expenditure per municipality from all sources. This captures the capacity of local municipalities to influence local economic development in comparison to the capacity of the public sector as a whole. It is influenced by the policies towards fiscal decentralisation analysed in the previous sections of this paper. The mean value of this variable is 0.46, indicating that the mean of the average values of relative local fiscal capacities is 46%. This can be compared to the overall ratio of the sum of local budget expenditures to the sum of total public expenditures of 18%. The difference is accounted for by the low relative level of local fiscal expenditures in Belgrade city, where the fiscal decentralisation ratio is just 2% due to the very large concentration of central public expenditures in the capital city. A similar effect is found in other cities, and for this reason we include a dummy variable for cities in the analysis to capture the effect of these outliers.

The dataset also includes a measure of investment per capita, based on investment within each municipality from all sources whether public or private, which is expected to have a positive effect on the employment rate. The mean value of this variable for all municipalities is 24,580 dinars per capita. It increased strongly in the period leading up to the economic crisis and fell noticeably in 2009, and again in 2012 when Serbia, along with the whole region of the Western Balkans, experienced a second dip into recession (Bartlett and Prica, 2013). The other variables in the dataset refer to the individual sectors of expenditure including Education, Health, Public Administration, Culture and Sports and Other expenditures. Among these, health expenditure has the highest value at 16,000 dinars per capita, education expenditure averages 13,000 dinars per capita and public administration averages 11,900 dinars per capita.

Results

The regression model aims to identify the impact of fiscal decentralisation on local economic development expressed by the employment rate in each municipality. The results of the analysis are presented in the following table, where the dependent variable is the natural logarithm of the employment rate, our proxy for the level of local economic development. The model is a cross section-time series model in which the time series component is modelled as a set of dummy variables for the years from 2006 to 2014, taking the year 2005 as the base. In model 1, as explained above, the proxy for fiscal decentralisation is the log of local budget expenditure per capita, while in model 2 the proxy is the ratio of local budget expenditure to total public expenditure in the municipality (or city).

The overall fit of the regression models is good, with an adjusted R squared indicating that the models explains over 50% of the variation in the employment rate among municipalities. The significance of the individual coefficients is high. The tolerance statistics (not shown) are within acceptable limits indicating that there are no serious problems of multicollinearity among the variables. Inspection of the histograms of the residuals shows that the residuals are approximately normally distributed. This, together with well-behaved "p-p" plots suggests that there are no problems of heteroscedasticity associated with either model.

Both models reveal that in relation to the base year 2005, the employment rate has experienced a secular decline as evidenced by the negative coefficients on the year dummy variables. This appears to have bottomed out in 2013, and a slight improvement is noticeable in 2014 reflecting the

beginnings of economic recovery in Serbia, in part associated with labour market reforms, in part with the agreement of a new IMF stabilisation programme and in part from a mild recovery of the Eurozone economies which are Serbia's main export market. The coefficient on the city dummy variable is also positive and significant in both models, indicating an expected positive effect of urbanisation on employment, which is likely to be due to the economies of scale in production and the additional demand for services in urban agglomerations compared to rural municipalities.

Table 2: Regression model for employment rate in Serbian municipalities and cities

	Model 1		Model 2	
	Coefficient	t-statistic	Coefficient	t-statistic
Log budget expenditure per capita	0.190***	7.17		
Fiscal decentralisation ratio			0.203***	3.44
Log education expenditure per capita	0.254***	8.94	0.302***	10.33
Log health expenditure per capita	0.024***	2.67	0.046***	4.30
Log sport & culture expenditure per capita	0.045***	4.56	0.058***	5.91
Log other expenditure per capita	0.015***	3.46	0.018***	4.04
Log public administration per capita	0.016	1.28	0.054***	4.44
Log investment per capita	0.071***	11.21	0.079***	12.60
City	0.138***	6.33	0.123***	5.53
2006	-0.295***	-7.93	-0.282***	-7.46
2007	-0.451***	-11.54	-0.422***	-10.71
2008	-0.559***	-13.50	-0.523***	-12.55
2009	-0.605***	-14.70	-0.574***	-13.83
2010	-0.700***	-16.55	-0.654***	-15.41
2011	-0.770***	-17.34	-0.712***	-16.04
2012	-0.883***	-17.94	-0.799***	-16.15
2013	-0.882***	-18.19	-0.806***	-16.61
2014	-0.873***	-18.16	-0.803***	-16.63
Constant	-2.587***	-34.64	-2.456***	-30.83
	Adjusted R-squared = 0.539		Adjusted R-squared = 0.524	
	F= 87.84; p=0.000;		F= 82.92; p=0.000	
	N=1,265		N=1,265	

Note: The dependent variable is the natural logarithm of the employment rate. Year variables are 0-1 dummy variables, with 2005 as the base; City is a 0-1 dummy variable; the fiscal decentralisation ratio is local budget expenditure / total public expenditure per municipality. The OLS regression has been produced using SPSS.

The coefficients on the various items of public expenditure are revealing. They show the positive impact of public expenditure on local economic development, with an especially strong effect coming through from public expenditure on education. Both models show that municipalities and

cities that have a higher level of total public expenditure per capita on education tend to achieve a higher level of local economic development as proxied by the local employment rate. To a lesser extent, expenditures on health and on culture and sport also have a positive impact on local economic development. All these effects may partly be due to the demand side impact of public expenditure, but they may also be due to improvements in the supply side of the economy through a better educated workforce and a healthier workforce leading to higher level so productivity and competitiveness of local industries and businesses.

The results from model 1 indicate that expenditure on local public administration does not have any impact on local economic development, and this expenditure is a purely bureaucratic necessity, without any spillover effect on the local economy. However, in model 2, the coefficient on local public administration expenditure is positive, suggesting that there may be an effect on local economic development, even from expenditure on local public administration, when compared to public administration expenditure from central government sources (e.g. in local branch offices of central government ministries and agencies). This is a worrying finding, since the public employment service has local administrative branches, and these form part of the central government administration at local level. One might have expected that these would have a positive impact on the employment rate at local level. However, our results appear to indicate that this is not the case, and that it is the relative local expenditure that has an impact, rather than the absolute level of expenditure including central government expenditure that is effective.

Turning to the effect of fiscal decentralisation on local economic development, model 1 shows that the coefficient on the local budget expenditure per capita is positive and highly significant. This indicates that, controlling for an array of plausible control variables, including time effects, fiscal decentralisation has a strongly positive impact on local economic development in Serbian municipalities and cities. This statement is made in a cross section sense. It means that municipalities and cities that have a higher level of local budget expenditure per capita tend to have a higher level of economic development as measured by the local employment rate than do other municipalities with a lower level of local budget expenditure per head, even after taking into account a range of other factors that could be expected to influence the employment rate. The coefficient size shows that a municipality with a 1% higher level of local budget expenditure per capita, comparing one municipality with another at a point in time, is expected to be associated with a 0.19% higher level of the employment rate in the municipality. At the mean, it implies that raising

the level of budget expenditure per capita in a municipality by 20,000 dinars per capita is expected to raise the employment rate by 0.4 percentage points from 18.8% to 19.2%.

Although the overall findings from the two models are similar there are some important differences between the two proxy variables that need to be taken into account. Model 1 addresses the issue of fiscal decentralisation in an absolute sense, taking the level of local budget expenditure per capita as the proxy for fiscal decentralisation. This proxy highlights the influence of the overall capacity of the local government units, which may be due to a higher level of fiscal decentralisation in the municipality or city. This could be raised either by a greater level of fiscal decentralisation, but also by an increased overall level of economic development. Hence the model is open to the critique of reverse causality, i.e. the endogeneity of the fiscal decentralisation proxy. In other words, municipalities and cities with a higher level of development (and hence a higher employment rate) may be able to raise larger absolute amounts of revenue, which are in turn the basis for a higher level of local budget expenditure. In order to address this issue we investigate a second model of fiscal decentralisation, which uses the relative share of public expenditure at local level as the proxy, rather than the absolute share. This set-up is less open to the critique of endogeneity, as the *absolute* level of economic development is not a plausible determinant of the *relative* level of fiscal decentralisation. Model 2 (in Table 2) presents the results of this approach. As noted above, the signs and significance level of all the variables is similar to that in model 1 with the exception that the coefficient on public administration expenditure is now positive and significant. The coefficient on the model 2 proxy for fiscal decentralisation (the ratio of local budget expenditure to all public expenditure at the local level) is positive and significant. This adds additional support to the case that fiscal decentralisation has a positive impact on local economic development in municipalities and cities in Serbia.

Conclusions

This paper has investigated the relationship between fiscal decentralisation and economic development in Serbia. The empirical part of the paper makes a contribution by being the first econometric study of this relationship in a transition country in the Western Balkans. The analysis is based upon a cross-section time series regression in which local economic development, proxied by local employment rate, is the dependent variable. A set of independent control variables reveal the positive impact of public expenditure on local economic development, and especially the positive

impact of public expenditure on education. Urban areas (cities) are shown to have a higher level of development in terms of a higher employment rate than do more rural areas. The investment rate measured by the level of investment per capita from both public and private sources also has a positive and significant effect on the level of local economic development.

Concerns that there may be endogeneity in the estimated regression model were met by estimating two models. One model takes the level of local budget expenditure per capita as a proxy for fiscal decentralisation; the second takes the relative amount of local budget expenditure in total public expenditure in the municipality as a proxy for fiscal decentralisation. The latter measure is less likely to be prone to the endogeneity problem. Both models yield similar results, with the exception that the level of public administration expenditure per capita is not significant in the first model. Both show a strong positive and strongly significant effect of decentralisation on the local employment rate across Serbian municipalities. Future research could explore the endogeneity issue further by estimating instrumental variables model to expunge any remaining concerns about the endogeneity of the main independent variable.

The main conclusion of the research is that the level of fiscal decentralisation has a positive and significant effect on the level of economic development in Serbian municipalities and cities. Local government units that enjoy a higher level of fiscal decentralisation tend to have a higher level of the local employment rate. This suggests that fiscal decentralisation may be an important policy instrument for boosting local economic development and local employment in Serbia.

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