

Goran Radosavljević
Metropolitan University – FEFA
Belgrade

FISCAL DECENTRALIZATION AND LOCAL ECONOMIC GROWTH IN SERBIA

Fiskalna decentralizacija i lokalni privredni rast u Srbiji

Abstract:

In this paper we examine, using a panel data approach with fixed effects, the relationship between the level of fiscal decentralization and economic growth across Serbian local self-governments over the 2002-2011 period. Our results suggest that there is a modest positive impact of fiscal decentralization on local economic growth in that period in Serbia. One of the two observed parameters (employment rates in local self-governments and local self-government investments) was positive in terms of the impact on the increased degree of fiscal decentralization. The substantial increase of local self-government own revenues was predominantly used to increase the number of employees and wages in local administrations, while, at the same time, the number of employees in the private sector dropped. At the same time, own revenue growth had only a slight impact on increase of investments. Based on an empirical analysis, out of approximately 100 million RSD of average annual increase of revenue per local self-government unit in the observed period, only 27,000 RSD on an average was directed towards increase of investments. The issue of the optimal level of fiscal decentralization, as well as the possibilities for increasing own revenues within the current legislative framework, were also discussed.

Keywords: *fiscal decentralization, economic growth, local self-government, Serbia*

Sažetak:

U ovom radu analiziramo, koristeći panel regresiju sa fiksnim efektima, odnos između nivoa fiskalne decentralizacije i ekonomskog rasta u jedinicama lokalne samouprave u Srbiji u periodu 2002-2011. godina. Naši rezultati ukazuju da postoji skroman pozitivan uticaj fiskalne decentralizacije na lokalni ekonomski rast u tom periodu u Srbiji. Jedan od dva posmatrana parametara (nivo zaposlenih u lokalnoj samoupravi i investicije lokalne samouprave) koji su korišćeni za dokaz naše hipoteze bio je pozitivan na rast stepena fiskalne decentralizacije. Veliki rast izvornih prihoda lokalne samouprave uglavnom su iskoristile za povećanje broja zaposlenih i plata u lokalnoj administraciji, dok je istovremeno broj zaposlenih u privredi smanjen. Istovremeno, rast izvornih prihoda neznatno je uticao na rast investicija. Na osnovu empirijske analize utvrđeno je da na oko 100 miliona dinara prosečnog godišnjeg rasta prihoda po jedinici lokalne samouprave u posmatranom periodu, svega 27.000 dinara u proseku je odlazilo na povećanje investicija. Pitanje optimalnog nivoa fiskalne decentralizacije kao i mogućnosti povećanja izvornih prihoda u okviru postojećeg zakonskog okvira takođe su bile diskutovane.

Ključne reči: *fiskalna decentralizacija, ekonomski rast, lokalna samouprava, Srbija*

Introduction

The process of fiscal decentralization in Serbia was initiated in 2001, following the onset of political changes. Until then, Serbia was characterized by a high degree of centralization. This process was neither easy nor simple. It is still an on-going process. In the previous seventeen-year period, central and local governments have struggled through different systems and ways of financing local self-governments. One of the reasons of the inconsistent policy towards local self-governments (LSG) were the frequent changes of government in the previous period. These frequent changes of sources of financing of local self-governments impacted the degree of fiscal decentralization in Serbia. Nevertheless, a continual trend of increase in the degree of fiscal decentralization is present, providing us with a sound basis for analyzing its impact on regional economic development. In Serbia there are two levels of government: central and local self-government, this being the foundation on which fiscal decentralization is based on.¹

Fiscal decentralization resulted in a continual increase of revenue and expenditures of local self-governments in the previous years. Own and shared revenues increased, while the transfer system was systematically defined for the first time. The increase of local self-government revenues enabled increase of investments and the renovation of the neglected communal infrastructure, renovation of schools, as well as better equipment of local administrations. Naturally, depending on the local government, these investments were more or less successful, resulting in some local self-governments experiencing an economic boom in this period. However, in 2009, as a result of the financial crisis, there was some wandering in implementing changes of the local self-government financing system, which directly influenced the degree of fiscal decentralization. The search for an adequate system of financing local self-governments, assuring an even regional development, continues to this day.

When compared to other OECD countries, Europe and the Western Balkans region, Serbia is a greatly decentralized country. The share of own revenues of local self-governments in the overall consolidated revenues is by far above the European average [9, p. 59]. Serbia ranks alongside the traditionally highly decentralized countries, such as Germany, US and Switzerland. This fact indicates that the process of fiscal decentralization in the previous years showed results, at least when taking into account the trends of revenue levels of local self-governments. On the other hand, the share of expenditures of local self-governments is below the level common for European countries, which calls into question the success of the entire process [9, p. 59]. The structure of these expenditures, with expenditures for personal earnings and subsidies dominating, shows that fiscal decentralization was not used for development of local self-governments, but rather for satisfying short-term (principally political) goals of local elites [9, p. 61].

In order to empirically prove the above statement, in this paper we tested the hypothesis that fiscal decentralization (and revenue growth due to fiscal decentralization process) has a positive impact on local economic growth measured through local employment level and investment in local infrastructure. However, the absence of an adequate theoretical basis and unique standpoint of the economics science relating to the impact of fiscal decentralization on local economic growth presents a great challenge. The conclusions of a large number of studies in this field are diametrically opposite (some of which were performed for the same countries in the same time period), ranging from conclusions that fiscal decentralization has a positive impact on economic growth, to conclusions that it does not impact, or that it negatively impacts growth.

At the same time, a direct relationship between fiscal decentralization and economic growth is difficult to ascertain. As a result, in order to prove the basic hypothesis, we are going to test two auxiliary hypotheses that have been defined based on decentralization of revenue and decentralization of expenditures of local self-governments:

- Hypothesis H1– Fiscal decentralization positively impacts employment growth at local level

¹ Serbia also has two autonomous provinces, but not covering whole territory.

- Hypothesis H2– Fiscal decentralization positively impacts increase of investments of LSG

After reviewing key theoretical and empirical studies that have analyzed the relationship between fiscal decentralization and regional economic growth, a detailed summary of the methodology used for analysis is presented. Further along, the findings and conclusions are discussed. Open issues and proposals for some future studies are also mentioned.

Literature review

Starting with the pioneer analysis presented by Tiebout [41], several theories have been developed in an attempt to explain the relationship between growth and fiscal decentralization. According to the theory of fiscal federalism, for example, fiscal decentralization results in an efficient allocation of resources, which might possibly contribute to increased rates of economic growth [22], [25], [41]. Increased efficiency is achieved with greater mobility of taxpayers as this makes it easier for them to choose the combination of tax expenditures that best suits them [41, p. 424]. This basically means that fiscal decentralization impacts economic growth if there is fiscal competition between lower levels of government.

Prud'homme [29], [30], however, argues that the advantages of decentralization in terms of increased allocative efficiency are not as obvious as claimed by the standard theory of fiscal federalism. At first glance, decentralization has its advantages, however, on the other side there is the risk of expenditure growth, less efficiency in ensuring public services for citizens and probably increases inequality and macroeconomic instability. Tanzi [38], [39] concludes, after analyzing the capacity of the tax administration at the national and local level and the quality of the system of public expenditure management, that in a number of countries fiscal decentralization even aggravated the process of stabilizing and reducing structural fiscal deficit.

Spahn [36, p. 6], on the other hand, argues that decentralization does not necessarily jeopardize macroeconomic stability. According to him, empirical studies neglect the fact that local levels often operate in an unstable

macroeconomic environment, and thus their behavior reflects adaptable, but not necessarily unstable budget performance [36, p. 6].

Shah [35, p. 51] also concludes that, contrary to common opinion, decentralized fiscal systems offer more potential for improving macroeconomic management than centralized fiscal systems. One of the reasons for this which he cites is that decentralized systems require greater transparency in the roles of different actors and decision makers [35, p. 51].

Bahl and Linn [4, p. 393] argue that only in the case of a relatively high level of per capita income decentralization becomes “attractive” to taxpayers in the sense that its benefits may be fully taken advantage of, and without greater problems or deficiencies which can sometimes outweigh the benefits.

Rodríguez-Pose and Krøijera [32] analyze the relationship between levels of fiscal decentralization and economic growth in 16 countries of Central and Eastern Europe over the period from 1990 to 2004. They use GDP per capita PPP as a dependent variable, and three independent fiscal decentralization variables: 1) subnational expenditures, as a percentage of total expenditures, 2) tax revenue as a percentage of total subnational revenues and grants and 3) transfers to subnational governments from other levels of government as a percentage of total subnational revenues and grants [32, p. 18]. They test model using fixed effects panel regression. They conclude that total expenditure and transfers to lower levels of government are negatively correlated with the economic growth of a country [32, p. 29]. On the other hand, taxes collected at the subnational level indicate a certain positive correlation with national growth rates (this influence is, in fact, very small according to the findings of these authors) [32, p. 30]. According to them, this results from the fact that lower levels of government use own sources better, responding better to local demands and promoting greater economic efficiency [32, p. 30]. However, the authors emphasize that long-term effects vary depending on the type of decentralization undertaken in each of the countries studied [32, p.30].

Zhang and Zou [45] hold that different measures of fiscal decentralization seem to have a positive and

sometimes even a significant impact on regional economic growth in India. Lin and Liu [21] also conclude that fiscal decentralization has a positive and significant impact on the economic growth in China. On the other hand, this is in contradiction to the conclusion that fiscal decentralization leads to slower growth. In the case of China, this was determined by Zhang and Zou [46]. In the case of the United States of America, the same findings were arrived at by Davoodi, Xie and Zou [15]. Finally, Davoodi and Zou [14] came to an identical conclusion analyzing a large number of developing countries and developed countries. In contrast to all studies mentioned, Woller and Phillips [42] failed to find a statistically significant relationship between fiscal decentralization and economic growth using panel data from developing countries.

The reason for such diametrically opposite findings is primarily the outcome of using different levels of disaggregation of revenues and expenditures for different levels of government. For example, Davoodi, Xie and Zou [15], Davoodi and Zou [14], and Woller and Phillips [42] concentrate on the role of aggregate spending of different levels of government, while Zhang and Zou [45], [46] take their analysis a step further observing the impact of the structure of public expenditure by sectors of different levels of government on the economic growth. Finally, Lin and Liu [21] use the marginal revenue retention rate as a measure of fiscal decentralization (defined as the percentage of revenue which the lower levels of government retain for themselves). Using different data levels in researching one occurrence in the same territory and over the same time period resulted in completely different conclusions.

The next topic we need to discuss is whether we can assume the existence of a direct relationship between decentralization and economic growth? Oates [26] intuitively argues that the assumption that fiscal decentralization promotes higher economic efficiency is logically linked to economic growth. Accordingly, investments in the infrastructure and the social sector, in line with the specifics of regional or local development established at these levels, will probably prove more efficient in enhancing economic development than the central government policies which may ignore these differences [26, p. 238]. The principal question is why, for example, 1

million Euros invested in infrastructure or education at the regional or local level should result in higher growth than in the case of the same amount being invested from the national level. A direct influence, as Oates points out, is that lower levels of government can make public expenditure more efficient, i.e. they can better respond to the needs and desires of taxpayers because they are more familiar with their preferences. In this way, lower level government expenditure is more in the function of economic growth than expenditure defined at the national level [26, p. 238].

Naturally, the direct relationship between decentralization and growth may head in a completely different direction if the measures and policies introducing fiscal decentralization are inefficient. The same applies to efficiency of decentralization. It may be higher or lower depending on the ways of carrying out the policy of decentralization. It is also dependent on the capacity of a local self-government to adjust its policy to local priorities and the ability to generate innovations in providing of public services [31, p. 32]. There is, however, little empirical evidence to support these arguments. In their work, the authors mentioned evaluate the horizontal link between devolution and regional economic growth. Results obtained show that, contrary to expectations, the degree of decentralization is in most cases irrelevant for economic growth, and when it is relevant, as in the cases of Mexico and the US, then this relationship is negative, i.e. a higher degree of decentralization leads to lower efficiency and lower growth [31, p. 32].

Bird stresses the importance of clearly understanding the goals and context of fiscal decentralization in any country before embarking on an analysis of the process itself [8, p. 211]. His assumption is that the primary goal of decentralization is improving efficiency, concluding that there can also be other goals as well [8, p.208]. Bearing in mind this starting point, his entire discussion is limited to two key issues of public financing resulting from fiscal decentralization: assignment of a portion of revenues, i.e. defining own local revenues and design of transfers [8, p. 211].

From the standpoint of efficiency, Bird argues that local revenues must be oriented towards maximizing

their benefits. To the extent that local public services are financed from fees paid by those using these services, the previous claim should be correct. Therefore, if public revenue collected in one territory is used to improve the quality of services delivered to citizens in that territory, this is can be qualified as efficient decentralization. As for transfers, Bird argues that they are not only necessary in practice, if local self-governments are responsible for significant expenditures, but that they can be used to a great degree for equalization of capacities of local self-governments. However, he goes on to suggest that such transfers should always depend on local expenditure performances. Otherwise, there would be dissipation of resources [8, p. 211].

Some empirical studies analyzed the impact of local government decentralization level on economic growth. Nelson and Foster [23] and Foster [16] use similar measures of decentralization (both revenues and expenditures) to analyze two different indicators of growth, population and income. The results shows that central-city population share is positive, but not significant in the population regression, but is negative and significant in the income regression. Their measure of special-district fragmentation generates a negative and significant correlation with income growth, but a positive and insignificant correlation with population growth. Differences across these two measures of economic growth may be related to compensating differentials. For example, locations with more favorable government structure (e.g. decentralized local governments) may attract residents which subsequently drive down wages [23].

Stansel analyzed the link between local decentralization and local economic growth during the 1960-1990 period in the U.S.A. The model examines two dependent variables as a proxy of economic growth: growth of population and growth of real per capita money income [37, p. 59]. For fiscal decentralization measure he used both revenue and expenditure indicators. His study shows evidence “of a strong positive relationship between local decentralization and local economic growth” [37, p. 55]. Overall, the empirical work focused on local governments has proved decentralization impact on economic growth, but the results depends on measures of decentralization and economic indicators.

In conclusion, it should be stated that past empirical studies have not fully proven a direct relationship between fiscal decentralization an economic growth. However, some of these studies have shown that under certain conditions this direct relationship does exist, but that it is not fully defined and that it depends on the case at hand. Even if there is no direct relationship between fiscal decentralization and economic growth and development, or if this relationship is hard to prove, it would seem that a potentially indirect relationship does exist. Decentralization, especially fiscal decentralization, influences other economic dimensions which, in turn, directly influence growth and development. For example, Seyfried [34, p. 22] examines the relationship between employment and economic growth in the ten largest states in the world. He concludes that economic growth has a significant impact on employment, but for some effects to be fully felt there is a time lag.

Data and methodology

The scope of our empirical analysis is the impact of the degree of fiscal decentralization on economic growth in local self-governments in Serbia over a period of 10 years, from January 1, 2002 to December 31, 2011. This is a period of constant gradual increase of the degree of fiscal decentralization resulting from objective factors (local tax collection rate increase, expanding the local tax base, establishing a system of local tax administrations, etc.). In late 2011, amendments to the Law on Local Self-government Financing enabled significant increase of the degree of fiscal decentralization, which brought about a significant “breakpoint” in the time series data. A year later, there was also another significant break point in the series data due to the repeal of the fee for use of construction land, which was one of the most significant sources of revenue in large towns. Therefore, we have limited our analysis to the period ending with 2012 in order to establish a base for further examination and comparison with results obtained after the structural changes².

According to World Bank [43] there is a wide range of potential fiscal decentralization indices. For the purpose

2 For more details about fiscal decentralization in Serbia see [19].

of our analysis, we will use own, shared and transferred revenues of local self governments as independent variables. Those variables are very often used and tested in literature. Akai and Sakata concluded that “definition of fiscal decentralization is important in relation to the effect of fiscal decentralization on economic growth” [1, p. 93]. They also agreed that “the standard approach to measuring the fiscal decentralization is to make use of accounting measures such as revenue or expenditure” [1, p. 95]. Similar conclusions are given by Rodríguez-Pose and Krøijer [32], and by Thornton [40]. All of those studies used both revenues and expenditures indicators for fiscal decentralization level. But, for the purpose of our analysis where it isn't our goal to analyze what influenced local growth, but to investigate does local authorities used revenues growth, resulted from fiscal decentralization, to support local growth, we chose to use only revenues accepting all potential risks of that analysis.

Each of the independent variables in its own way indicates a certain degree of fiscal decentralization. Thus, for example, higher own revenue or its increase over time shows a higher degree of fiscal decentralization or its increase. Conversely, a higher level of transfers shows a lower degree of fiscal decentralization as in that case local self-government is financially more dependent on funds from the central budget. For easier following of the model, own revenue is marked D^1 , shared D^2 , and transfers D^3 .

The data used in the analysis originate from several sources. A source of fiscal revenues and expenditures of local self-governments was primarily the Ministry of Finance of the Republic of Serbia, the Treasury Administration. Another source of data was the Ministry of Finance, the Budget Sector. By combining data from the Treasury Administration and the Budget Sector, we obtained data on own revenues of local self-governments, shared revenues and transfers over the period from 2002 to 2011³.

3 Not included in the analysis were grants because grants are sporadic with a low share in total revenue. Not included were also data on funds received through borrowings as these are not of a systematic character, and policy of borrowing of local self-governments often changed over time which could give the wrong picture in the course of analysis. Also, both types of data, grants and credits, are mostly unreliable or missing, and in most cases there is no precise information as to what these funds were used for.

As a dependent variable, whose level and movement should be an indicator of the degree and dynamics of economic development of local self-governments, several variables were used. The first is the annual average number of employees in each of the local self-governments. Economic growth has a positive and significant impact on employment growth (see, e.g. conclusions given by Seyfried [34]) and taking in consideration that GDP on local level is not available, we will use number of employees as proxy. The source of employment data at the local level is the Statistical Office of the Republic of Serbia (SORS).

Based on the employment data, the following dependent variables were formed: total number of employees, number of employees in the private sector and the number of employees in local administrations (not including the armed forces and the police). The number of employees in the private sector includes employees in local companies founded by the local self-governments as there is no precise information on the number of employees in individual companies. Also, the number of employees in local administration includes employees in education and in health care.

The second dependent variable is the size of the investment in local infrastructure. Economic growth is highly influenced by investment (see, for example, [2], [3], [10]). On the same time, Zhang gives detailed report on local level investment influence on economic growth taking China as example [44]. Those conclusions can be useful starting point for our analysis.⁴

Our goal is to apply these chosen dependent variables to examine the indirect relationship between fiscal decentralization and regional economic growth. Dependent variables in our case show in different ways the level of economic growth in individual local self-governments. So, for example, the trend of the number of employees shows the level of economic activity in a particular local self-government. The higher the number of employees, the

4 The drawback of this dependent variable is that relevant data relating to the size of the investment at the level of the local self-government unit are available only from 2005. Nevertheless, in view of the number of local self-governments observed (145) and the seven-year period for which there are available data, we have quite enough data for relevance of using this variable in the analysis.

higher the economic activity in that local self-government, and indirectly the growth.⁵

On the other hand, data on the size of investments in fixed assets show the investment capacity of a local self-government, and indirectly, the level of economic growth in that municipality. Investments in one period present the foundation for economic growth in another period. This will reflect in higher revenue growth of local self-governments. Local self-government investments are primarily directed at building local infrastructure and in general enhancing the quality of services provided by that local self-government. Municipalities with better local infrastructure, better quality of services (e.g. a more efficient system of issuing construction permits) and a stimulating local tax policy have managed to attract greenfield and brownfield investments, which primarily impacted the increase of own revenues of those local self-governments.

After analyzing the data and selection of dependent and independent variables, we approached defining the model. We will try to run “informal growth regression”

5 We also tested the number of employees in local self-governments in terms of indicators of paid personal income taxes. Income tax is paid according to the place of residence, which presents more precise data than the number of employees in a given municipality. Theoretically, it is possible that a significant number of employees from one municipality works in a neighbouring municipality. Statistical employment data would in that case register an increased number of employees in that municipality, but the impact of such an increase on the economic growth of that municipality would be small, as everyone lives (and spends) in the neighbouring municipality. However, our analysis shows that the results are almost identical, which indicates low mobility of the work force in Serbia.

based on Barro [7] which main idea is to simply choose a different variables and see how that works in growth equation. The choice of variables is based on the results of analysis of Neuhaus [24]. We use a regression model based on those of Levine and Renelt [20] and Rodríguez-Pose and Krøijer [32]. The following form of model was used:

$$Economic\ growth_{it} = \beta_0 + \beta_1 D_{it}^1 + \beta_2 D_{it}^2 + \beta_3 D_{it}^3 + u_{it} \quad (3.1)$$

where:

D_{it}^1 - own revenue in the local self-government i in the year t ,

D_{it}^2 - shared revenue in the local self-government i in the year t ,

D_{it}^3 - transfers in the local self-government i in the year t ,

$\beta_0, \beta_1, \beta_2, \beta_3$ - coefficient on independent variables

u_{it} - statistical error of the model

As we already mentioned, there is no data for economic growth on local level in Serbia and we will use as proxies for economic growth employment and investment on local level. Starting from that point, two models were evaluated with the aim to test the set hypotheses.

$$\text{Model 1: } Employment_{it} = \beta_0 + \beta_1 D_{it}^1 + \beta_2 D_{it}^2 + \beta_3 D_{it}^3 + u_{it} \quad (3.2)$$

$$\text{Model 2: } Investments_{it} = \beta_0 + \beta_1 D_{it}^1 + \beta_2 D_{it}^2 + \beta_3 D_{it}^3 + u_{it} \quad (3.3)$$

where:

$Employment_{it}$ is number of employees in the local self-government i in the year t

$Investment_{it}$ is size of investments in fixed assets in the local self-government i in the year t ,

A good dataset is crucial for estimating the effects of fiscal decentralization on economic outcomes. Analysis

Table 1. Summary statistic of data base

Variables	No. of observations	Average	St.dev.	Min	Max
Own revenues	1,450	3,978	24,813	27	396,954
Shared revenues	1,450	4,499	23,967	48	352,985
Transfers	1,450	2,029	7,151	96	151,441
Investment	938	2,643	20,174	0	295,399
Employment	1,450	13,270	49,834	541	628,366
Employment, private sector	1,450	10,386	38,824	296	501,083
Employment, public sector	1,450	2,884	11,168	150	171,635

Table 2. Correlations

	Own revenues	Shared revenues	Transfers	Investment	Employment
Own revenues	1.00	-0.16	-0.62	0.10	0.19
Shared revenues		1.00	-0.57	0.06	0.12
Transfers			1.00	-0.09	-0.23
Investment				1.00	0.13
Employment					1.00

shows that if panel data are available, they are good for country/regional analysis of fiscal decentralization [27, p. 66]. Also, where data are used for same country, previous analysis shows that different level of development of regions in that country do not matter [27, p. 66]. Starting from that point, all data relating to individual local self-government units and time were observed as a panel, and calculated in EUR, using the average annual rate for that year, in order to avoid the effects of inflation. Panel is strongly balanced. Table 1. provides summary statistics for all the variables.

We first tested autocorrelation in panel data using Wooldridge test, and results shows that data does not have first-order autocorrelation (Prob>F=0.25 for Model 1 and 0.44 for Model 2). Then, we tested heteroskedasticity (Table 3). Modified Wald test for groupwise heteroskedasticity in FE regression model shows that heteroskedasticity is present for both dependent variables (employment and investment). On the other side, Breusch and Pagan LM test for random effects shows present of heteroskedasticity for Model 1 (employment) but not for Model 2 (investment). Finally, taking in consideration that in our panel, N is bigger than T (N=1.450, T=10), we tested cross-sectional dependence using test of Pesaran [28]. Results shows no presence of cross-sectional dependence in our panel.

Table 3. Heteroskedasticity tests results

Variables	Modified Wald test	BP LM test
Employment	1.9e+09 (0.000)	255.58 (0.000)
Investment	1.1e+08 (0.000)	2.30 (0.13)
Employment, private sector	5.9e+0.7 (0.000)	219.98 (0.000)
Employment, public sector	3.3e+0.8 (0.000)	225.63 (0.000)

Taking in consideration presence of heteroskedasticity, recent literature dealing with the estimation of heterogeneous panels (Baltagi, Bresson and Pirotte [5], Baltagi, Jung and Song [6]) suggests that the choice of an appropriate model is sensitive to specifying the correct source of heteroskedasticity (see also Bresson, Hsiao and Pirote [12]). Having that in mind, and starting from Hoechle [18], in our analysis we will start using fixed effects linear panel regression with robust stand-

ard error.⁶ In the case of presence of heteroskedasticity, and using robust model, we are enabled to use standard Hausman test in order to test the difference between random and fixed effects. But we can use Test of overidentifying restrictions (fixed vs random effects). Significant P-value (Table 4) suggest that we should use fixed effects in the regression of Model 1. Regarding Model 2, and having in mind that RE model don't have heteroskedasticity, and that FE model shows it, we are unable to compare those models using this test. Instead, we will present results of both methods and comment on it.

Table 4. FE vs RE effects

	Sargan-Hansen statistic	
	Chi-square	P-value
Employment	96.089	0.000
Employment, private sector	61.947	0.000
Employment, public sector	160.404	0.000

Finally, for the purpose of our analysis it is also useful to look at whether there are differences in the trends of fiscal decentralization in towns and municipalities over the observed period. Municipal and township governments are defined by Law on local self-governments. They typically have similar powers and perform similar functions.

Results and discussion

The results of all regressions are presented in Table 5. All coefficients on independent variables are statistically significant at the 5% level (except var "transfers" in Model 1, employment). R-Squared values are relatively small, except for regression with investment as dependent variable.⁷ Values for F statistic also shows that our model is relevant, and that all coefficient are different than zero.

6 It is also possible to use FGLS regression. But that method is infeasible if the panel's time dimension T is smaller than its cross-sectional dimension N (which is almost always the case for microeconomic panels). Also, FGLS is valuable under the assumption that all aspects of the model are completely specified. If the covariances within panel are different from simply being panel heteroskedastic, then the FGLS will be inefficient and the reported standard errors will be incorrect (for more details see e.g. [18]).

7 It should be clear that R-square in panel data models is not simple that we obtain from OLS estimators, and they are based on correlations between the actual Y_{it} and its predicted values from the regression equation.

Table 5. Regressions results

Variables	Employment*	Employment private sector*	Employment public sector*	Investment (FE) *	Investment (RE) **
Own revenues	-0.105 (0.080) [0.000]	-0.142 (0.072) [0.049]	0.036 (0.009) [0.000]	0.788 (0.066) [0.000]	0.721 (0.026) (0.000)
Shared revenues	0.865 (0.116) [0.000]	0.731 (0.134) [0.000]	0.133 (0.033) [0.000]	-0.644 (0.243) [0.009]	-0.269 (0.030) [0.000]
Transfers	0.005 (0.055) [0.925]	0.259 (0.063) [0.000]	-0.254 (0.037) [0.000]	0.837 (0.177) [0.000]	0.767 (0.055) [0.000]
Const.	9,786.424 (403.622) [0.000]	7,133.967 (371.845) [0.000]	2,652.459 (51.159) [0.000]	474.301 (598.621) [0.429]	-1,098,685 (178.131) [0.000]
R-Squared	0.459***	0.458***	0.232***	0.635***	0.627****
F- value	462.79 (0.000)	369.95 (0.000)	265.72 (0.000)	11,315.62 (0.000)	13,870.68 (0.000)

Note: * FE (robust standard error); ** RE GLS; *** Within; **** Between.

First, we will start from the assumption that higher number of employees at local self-government level means a higher standard for the citizens, higher consumption and a higher local GDP. The assertion regarding the possible contribution of fiscal decentralization on employment growth is additionally enhanced by analyzing the financial effect of such employment on the local self-government budget, i.e. in terms of the amount of paid personal income tax in a given local self-government unit. In order to draw a precise conclusion on the impact of fiscal decentralization on employment, and indirectly on the economic growth of local self-governments, in addition to total employment we are also analyzing employment in the private sector and employment in local administration at local self-government level. The results of regression of Model 1 from (3.2) are presented in Table 5.

The coefficient on the variable D^1 (own revenues) is negative, indicating that the total number of employees in local self-governments declined over the observed period, in spite of the increased degree of fiscal decentralization. Such a relationship between the total number of employees at local level and own revenues could be interpreted in several ways. First, this could be interpreted in light of the general decline of the number of employees in Serbia over the observed period. However, we must note that reasons for the decline of the number of employees in the previous period are not correlated with the degree

of fiscal decentralization, therefore, this reason cannot be considered a prevailing one. Second, it is a realistic assumption that local self-governments, or at least the majority of them, have not been systematically using own revenue growth, to contribute to creating new jobs at local level, primarily in the private sector. This is supported by the lack of programs for creating new jobs and reducing unemployment at the level of local self-government units in Serbia. All such programs are at the central level.

On the other hand, the increase in shared revenue contributed to an increase in employment in local self-governments. This suggests, on the one side, that revenue growth of local self-governments did have some impact on increasing employment in local self-governments. However, this result should be taken with reservation as a great portion of shared revenue constitutes personal income tax relating to persons with residence in the territory of the local self-government. Therefore, more employees means more personal income tax paid, and in turn more shared revenue. As a result, these two variables are greatly correlated, hence the results arrived at were expected.

The result, therefore, indicates that the process of greater fiscal decentralization and the number of employees at local self-government level have developed independently of one another. In other words, the growth of own revenue and thus a higher degree of fiscal decentralization have not contributed to increased employment at local self-

government levels, quite the contrary. Employment trends in this period have also been affected by a number of other factors which have nothing to do with fiscal decentralization. However, this does not diminish the result which, let us restate, testifies to the fact that local self-governments failed to efficiently use the substantial growth of own revenues.

In order to take a step further with the analysis of the relationship between fiscal decentralization and employment at local level, we are going to observe only the number of employees in the private sector at the level of individual local self-governments. Using the model from the relation (3.2) we are going to test the relationship between own revenues, shared revenues and transfers of local self-governments and the number of employees in the private sector over the observed period. Results are presented in Table 5.

The first conclusion is that all coefficients on the independent variable are statistically significant, as well as that the model itself is statistically significant. In addition, a negative coefficient on the variable D^1 indicates that own revenue growth over this period is in negative correlation to the increase of employment in the economic sector in local self-governments. This result also indicates that a higher degree of fiscal decentralization did not result in changes of the policies that are within the competence of local self-governments, and which could bring about economic growth and creation of new jobs in the private sector in the previous period.

The next step is analyzing the relationship between fiscal decentralization and employment in administration at local level which is defined as the number of employees at local self-government level whose earnings are budget funded. Panel regression provided us with the results presented in Table 5.

Coefficients on all independent variables are statistically significant. Coefficient on the variable D^1 (own revenue) is positive, which indicates that the total number of employees in local self-governments increased over the observed period with the increase of the degree of fiscal decentralization. This result is particularly interesting for the pursuit of a suitable economic policy of the central government towards local self-governments. Namely,

a conclusion that can be drawn from such a result is that local governments have used the increase of fiscal revenues resulting from fiscal decentralization to increase employment in local administration, while employment in the private sector has declined in the same period. A similar conclusion applies to shared revenues, which only accentuates our conclusion⁸.

Contrary to this, it is interesting to note that the growth of transfers had an opposite trend in relation to increase of employment in administration at local self-government level. One explanation could be that municipalities with a larger share of transfers in total revenues are poorer, therefore, by definition, employment is lower in those municipalities and better controlled by central government. Also, local self-governments with a higher growth of own and shared revenue have a lower share of transfers in total revenues. Therefore, the logical assumption is that transfers and number of employees in administration have their own trends.

The general result of this part of the analysis is that over the period from 2002 to 2011, the increase of the degree of fiscal decentralization, measured through growth of own revenue of local self-governments, was accompanied by a decline in employment at local self-government level. It may be concluded that measures of fiscal decentralization were not a good response to the general drop in employment in the observed period. It could be asserted that the increase of fiscal decentralization failed to produce a more significant impact on the economic development in the previous period, and that it did not contribute to the increase of general employment, however, it most certainly did contribute to the increased number of employees whose earnings are budget funded.

Supporting this assertion is the fact that the increased degree of fiscal decentralization, measured through own revenue growth of local self-governments, had a positive impact on the increase of employment in administration at local self-government level. Therefore, the increase of

⁸ Intuitively we can assume that a similar conclusion applies to earnings in local administration, i.e. that they have increased in this period along with the increase of the degree of fiscal decentralization. However, due to a lack of adequate data, we are not in a position to empirically test this claim.

revenue over time was used by local self-governments to increase the number of employees whose earnings are budget funded, while employment in the private sector dropped.

It must be said that this result is also partially dependent on the increase of the number of employees whose earnings are budget funded which is the result of the transfer of certain competencies from central to local level (e.g. property tax collection) and due to the fact that some new competencies were created at local level (e.g. communal police). Nevertheless, this fact does not minimize the significance of the result that shows a lack of fiscal responsibility at LSG. The same trend continued after 2012 when, after assigning a major portion of income taxes to local self-governments, employment and earnings increased at local level.⁹

Another aspect of our analysis is to establish the indirect impact of fiscal decentralization on the economic growth of local self-governments, by analysing the trends in terms of the size of investments in fixed assets. By definition, the category of investments in fixed assets at local self-government level includes investments of local self-governments in buildings and construction works (including all local and communal infrastructure) as well as investments in machines and equipment. The flow of investments to fixed assets at the local self-government level should show us how much a local self-government invests in future development, as infrastructure is crucial in attracting investments and creating new jobs. We are starting with the assumption that higher own revenue created by the local self-government will lead to higher investments in fixed assets. With the panel regression of the model in relation (3.3) we arrived at the results which are presented in Table 5.

All coefficients on independent variables are statistically significant. Coefficient on variable D^1 (own revenue) is positive, which means that increase of the degree of fiscal decentralization had a positive impact on local economic growth measured through investments.

⁹ We also tested panel data separately for towns and municipalities, in order to create more homogeneous sample, but the results are similar, i.e. own revenue growth did not contribute to increasing employment both in towns and municipalities in Serbia.

Shared revenues of local self-governments have a negative impact on investments in fixed assets by that local self-government, while transfers have positive impact. The general conclusion is that the increase of own revenues resulted in higher investments at the local self-government level mainly from own sources.¹⁰ However, we also need to analyse how an increased degree of fiscal decentralization impacted the increase of investments in municipalities, as well as in towns, in order to determine any possible specific characteristics. The results show that municipalities invested less in infrastructure with the increase of the degree of fiscal decentralization, compared to the average for all local self-governments. On the other hand, with increased fiscal decentralization and increased own revenues the towns increased investments in fixed assets. This increase in investments is still not at the expected level, but it is about four times higher than in the case of municipalities. Therefore, with own revenue growth by one unit over the period from 2002 to 2011, towns in Serbia increased investment funds on an average approximately four times more than did municipalities. Such a result is in accord with intuition as in the observed period towns developed economically, and particularly in terms of infrastructure significantly more than was the case in municipalities. On the other hand, municipalities are very heterogeneous (wealthier or poorer, larger or smaller, situated in the proximity of main roads or further away from the main roads, etc.) while the towns (with the exception of Belgrade) are to a large degree similar.

Conclusion

It has been empirically demonstrated that in the past decade fiscal decentralization has not significantly contributed to increasing total employment at local level. In general, this is primarily the result of lack of interest of LSG to invest important portion of their growing revenues into creating new jobs in private sector. Such investment could be implemented in two ways. The first way is through direct subsidies to business entities, which certainly isn't the best way, although, unfortunately, it is often exercised

¹⁰ Same conclusions are obtained from RE regression results (Table 5).

in countries in transition. Another, more efficient way to encourage creating new jobs is to improve the business environment, shorten the time required for obtaining various permits, lower the costs, etc. This would ensure inflow of new investments which makes this method economically sustainable. However, with of course few exceptions, local governments have mostly neglected this segment and left it entirely to the decisions of the central government.

On the other hand, as the degree of fiscal decentralization increased, so did the number of employees in local administration. In almost all local self-governments, the number of employees whose earnings are budget funded increased more than double over the period from 2002 to 2011. Such a trend also has two explanations. First of all, with the process of fiscal decentralization, local self-governments were given new competencies, transferred from the central government. New competencies implied new employees (e.g. transfer of property tax collection to local self-governments required setting up a local tax administration, which resulted in an increase in the number of employees in connection with this). Second, revenue growth based on an increased degree of fiscal decentralization is not accompanied by an adequate growth of expenditure for such competencies at local level. Local self-governments took advantage of this and redirected the resulting surplus revenue to increasing employee earnings, expenses for purchase of goods and services and subsidies to local business entities. Thereby, this kind of behaviour was more pronounced in towns than in municipalities, primarily because towns had relatively more significant own revenue growth.

Therefore, these two results clearly indicate that fiscal decentralization and own revenue growth of local self-governments have not contributed to the increase of employment and indirectly the economic growth of local self-governments in the previous period. It is clear that for various reasons local policies could not influence the growth and development trend of an economy and that there was a great number of decisions that were made exclusively at central level. However, the only category that increased over time along with the increase of growth of fiscal decentralization is employment in administration

at local self-government level. This is something that local policies directly influenced and are, therefore, the ones responsible for such a result. One of the first measures of a central state, aimed at stopping irrational spending of funds at local level, is limiting the possibility of spending surplus funds of local self-governments in an irrational and unproductive way.

Empirical analysis also showed that fiscal decentralization in Serbia had a positive, although relatively small, impact on increase of investments at local level. It is a fact that a number of local self-governments used own revenue growth over time in order to invest more in local infrastructure and to improve the quality of local services. Local self-governments which realized on time the importance of these investments managed to attract significant investments locally. Those investments have contributed to the creating of new jobs and indirectly to growth of own, as well as shared revenues of those local self-governments.

However, we must point out here that the impact of own revenue growth on investments is very small. Empirical analysis indicates that the increase of own revenue of local self-governments of 50 billion RSD (which presents the nominal cumulative growth over the period from 2002 to 2011) resulted in increase of investments locally of only 43 million RSD. In other words, as a result of own revenue growth in the past ten years, local self-governments increased investments by an average of approximately 4 million RSD annually or approximately an average of 27,000 RSD annually per local self-government. Meanwhile, local self-government revenues, observing an average for one local self-government unit over a period of one year, increased more than 100 million RSD. If we add to this grants and local self-government borrowing, the result is even lower.

Intuitively, it was evident that towns were in a position to better use own revenue growth and significantly increase investments. Empirical analysis shows that towns were four times more successful in this, i.e. that with the growth of own revenues they allocated on an average four times more funds for investments than did the municipalities. However, such a result is still considered modest. In nominal values, investments per town increased by an average of approximately 28,000 RSD annually as a result

of own revenue growth. At the same time, municipalities increased investments by merely 7,000 RSD annually, in spite of very high revenue growth in the period observed.

The fact of the high degree of fiscal decentralization [9], as well as the empirical analysis which indicates that fiscal decentralization did not contribute to increase of employment, as well as the relatively small positive impact of fiscal decentralization on the increase of investments, opens several dilemmas to be considered by the creators of the economic policy in Serbia.

The first issue concerns the optimal level of fiscal decentralization in Serbia and how it could be reached. An answer to this question is not simple. Both, in economic theory and practice, there is no consent on subject of the optimal level of fiscal decentralization in one country. What is certain for Serbia is that the level of decentralization is already high enough and that the next step should entail regulating the present state of affairs in order to increase efficiency of utilization of assets at local level. A systematic analysis of the effects of amendments of the Law on Local Self-government Financing in the past several years needs to be carried out. Such an analysis should serve as the basis for a new law on local self-government financing.

According to our estimate, there is no need to further increase the degree of fiscal decentralization in Serbia, but only to regulate the existing system in order to ensure its sustainability. In reference to this, it is necessary to fully implement, as soon as possible, the Law on Public Property which provides for local self-governments to become owners of property. In order to make municipal governments take responsibility for their decisions, in particular the ones regarding fiscal policy, we feel it is necessary to consider introducing bankruptcy of local self-governments with all the consequences on the functioning of local self-governments which such a result entails.

The second issue which is of significance for economic policy makers in Serbia is how to increase, within the existing legislation, own revenues of local self-governments. That is an important subject not only due to the rising number of requests by local self-governments because of a lack of investment funds, but also because of the need to suspend a large number of parafiscal fees which are in effect at local level.

On the other hand, the existing system is not fully utilized. There is most area to work with obviously within the property tax which is still very low. There are some significant deviations and great differences between property tax revenue levels per capita in the observed local self-governments. In conclusion to our analysis it may be said that some municipalities have managed to better “handle” the situation and create an efficient system of property tax collection, while others find themselves only at the beginning of this process. One of the reasons for this is the lack of an adequate data base of constructed buildings in local self-governments, which is the basis for collection of this tax. Therefore, the first step would entail that the local self-governments make an inventory of the taxpayers’ property which would increase the scope of the tax, which, in turn, would result in own revenue growth without raising the tax rates. The second step would be to amend the methodology for tax calculation, from property value assessment to the types of tax incentives. By carrying out reforms in this area, local self-governments would secure significant funds which could be used for increasing investments in infrastructure and improving the quality of services at local level. Finally, we must point out that this is a very broad topic and that it deserves a detailed analysis, which we will leave for some future papers and research.

The third, although not the last, issue opened by our analysis concerns the influence that politics have on this process. Namely, so far the process of fiscal decentralization has been closely linked to decentralization of political influence, with the establishing of regions and the tendency to use such politics to win over the sympathy of voters in order to achieve some political goals. Our conclusion is that fiscal decentralization must be founded on plain economic criteria and must be the result of precise analyses. Ad hoc changes of legislation in order to satisfy certain political options, is not contributing to an even regional development as it maintains a high degree of uncertainty in the system and in the process itself. This uncertainty will result in local governments using funds resulting from the increased degree of fiscal decentralization exclusively for short-term, one-time projects (increasing earnings, hiring new employees in government administration,

etc.), and not for key investment projects, the results of which are expected medium term (e.g. construction of a metro, bridges, etc.).

Finally, it must be noted that this analysis was performed taking into consideration all the limitations that were set before it. This relates primarily to limitations and difficulties to obtain data, then the lack of clear economic policies at local self-government level, frequent change of the categories of revenue that make up own and shared revenues of local self-governments, as well as a vast heterogeneity of local self-governments as the basic units of fiscal decentralization in Serbia. Taking into consideration all these limitations, the greatest contribution of this paper, in our opinion, is to draw the attention of economic policy makers, primarily in fiscal policy, to the significance of a systematic and analytical approach to the fiscal decentralization process and the importance of making decisions relating to the methods of financing local self-governments based on facts and effects. Only in this way it is possible to contribute to optimally using the potential positive effects of the impact of fiscal decentralization on regional economic growth in Serbia.

Literature

1. Akai, N., & Sakata, M. (2002). Fiscal decentralization contributes to economic growth: Evidence from state-level cross-section data for the United States. *Journal of Urban Economics*, 52, 93–108.
2. Anderson, D. (1990). Investment and Economic Growth. *World Development*, 18, 1057–1079.
3. Ansar, A. et al (2016). Does infrastructure investment lead to economic growth or economic fragility? Evidence from China. *Oxford Review of Economic Policy*, 32(3), 360–390.
4. Bahl, R.W., & Linn, J.F. (1992). *Urban public finance in developing countries*, Oxford: Oxford University Press.
5. Baltagi, B.H., Bresson, G., & Pirotte, A. (2006). Joint LM test for homoskedasticity in a one-way error component model. *Journal of Econometrics*, 134, 401–417.
6. Baltagi, B.H., Jung, B.C., & Song, S.H. (2010). Testing for heteroskedasticity and serial correlation in a random effects panel data model. *Journal of Econometrics*, 154, 122–124.
7. Barro, R. J. (1991). Economic growth in a cross section of countries. *Quarterly Journal of Economics*, 106(2), 407–443.
8. Bird, R. (1993). Threading the fiscal labyrinth: Some issues in fiscal decentralization. *National Tax Journal*, 46, 207–227.
9. Bisić, M., & Radosavljević G. (2012). Stepen fiskalne decentralizacije u Republici Srbiji: Pokazatelji i poređenje, *Finansije*, 1-6/2012, 44–63.
10. Blumstrom, M., Lipsey, R.E., & Zejan, M. (1996). Is fixed investment key to economic growth. *Quarterly Journal of Economics*, 111, 269–276.
11. Bratić V. (2008). Local self-government in Central and Eastern Europe: A strong and independent local-level management tool or just a paper tiger? *Financial Theory and Practice*, 32(2), 139–157.
12. Bresson, G., Hsiao, C., & Pirotte, A. (2011). Assessing the contribution of R&D to total factor productivity. A Bayesian approach to account for heterogeneity and heteroscedasticity. *AStA Advances in Statistical Analysis*, 95(4), 435–452.
13. Clarke, P. et al. (2010). *The choice between fixed and random effects models: Some considerations for educational research*. CMPO Working Paper Series No. 10/240. Retrieved from www.bristol.ac.uk/cmpe/publications/papers/2010/wp240.pdf.
14. Davoodi, H., & Zou, H. (1998). Fiscal decentralization and economic growth: A cross-country study. *Journal of Urban Economics*, 43(2), 244–257.
15. Davoodi, H., Xie, D., & Zou, H. (1995). Fiscal decentralization and economic growth in the United States. *Policy Research Department Working Paper*. Washington DC: World Bank.
16. Foster, K. A. (1993). Exploring the links between political structure and metropolitan growth. *Political Geography*, 12, 523–547.
17. Hamond, G.W., & Tosun, S. M. (2010). The impact of local decentralization on economic growth: Evidence from U.S. counties. *Journal of Regional Science*, 20(10), 1–18.
18. Hoechle, D. (2007). Robust standard errors for panel regressions with cross-sectional dependence. *The Stata Journal*, 7(3), 281–312.
19. Kmezić, S. et al. (2016). *Fiscal decentralisation and local government financing in Serbia and Montenegro*. e-book, Institute for Local Self-Government and Public Procurement, Maribor: Slovenia.
20. Levine, R., & Renelt, D. (1992). A sensitivity analysis of cross-country growth regressions. *American Economic Review*, 82, 942–963.
21. Lin, J., & Liu, Z. (2000). Fiscal decentralization and economic growth in China. *Economic Development and Cultural Change*, 49 (1), 1–22.
22. Musgrave, R. (1959). *The theory of public finance*. New York: McGraw-Hill.
23. Nelson, A. C., & Foster, K. A. (1999). Metropolitan governance structure and economic growth. *Journal of Urban Affairs*, 21, 309–324.
24. Neuhaus, M. (2006). *The impact of FDI on economic growth: An analysis for the transition countries of Central and Eastern Europe*. New York: Physica-Verlag Heidelberg.
25. Oates, W. (1972). *Fiscal federalism*. New York: Harcourt Brace Jovanovich.
26. Oates, W. (1993). Fiscal decentralization and economic development. *National Tax Journal*, 46 (2), 237–243.
27. OECD/KIPF. (2013). *Measuring fiscal decentralisation: Concepts and policies*. Paris: OECD Publishing. Retrieved from <http://dx.doi.org/10.1787/9789264174849-en>.
28. Pesaran, M. H. (2004). General diagnostic tests for cross section dependence in panels. Working Papers in Economics No. 0435. Cambridge: University of Cambridge, Faculty of Economics.
29. Prud'homme, R. (1991). Public finance with several levels of government. Proceedings of the 46th Congress of the

- International Institute of Public Finance*. The Hague: Foundation Journal Public Finance.
30. Prud'homme, R. (1995). On the dangers of decentralization. *World Bank Economic Review*, 10(2), 201–220.
 31. Rodríguez-Pose, A., & Bwire, A. (2004). The economic (in) efficiency of devolution, *Environment and Planning, A* 36, 1907-1928.
 32. Rodríguez-Pose, A., & Krøijer, A. (2009). Fiscal decentralization and economic growth in Central and Eastern Europe. *LSE „Europe in Question“ Discussion Paper Series, LEQS Papers No.12/2009*, 1-42.
 33. Rodríguez-Pose, A., Tijmstra, S.A.R., & Bwire, A. (2009). Fiscal decentralisation, efficiency, and growth. *Environment and Planning*, 41(9), 2041 – 2062.
 34. Seyfried, W. (2005). Examining the relationship between employment and economic growth in the ten largest states. *Southwestern Economic Review*, No. 32, 13-24.
 35. Shah, A. (1999). Fiscal federalism and macroeconomic governance: For better or for worse? In K. Fukasaku & L. R. De Mello (Eds.), *Fiscal decentralization in emerging countries: Governance issues* (pp. 37-54). Paris: OECD.
 36. Spahn, P. (1997). Decentralized government and macroeconomic control. *Infrastructure Notes (FM-12)*. Washington DC: World Bank.
 37. Stansel, D. (2005). Local decentralization and local economic growth: A crosssectional examination of US metropolitan areas. *Journal of Urban Economics*, 57, 55-72.
 38. Tanzi, V. (1996). Fiscal federalism and decentralization: A review of some efficiency and macroeconomic aspects. *Annual World Bank Conference on Development Economics*, M. Bruno, & B. Pleskovic (Eds.), (pp. 295–316). Washington DC: World Bank.
 39. Tanzi, V. (2000). On Fiscal Federalism: Issues to Worry About. *International Monetary Fund Working Paper*. Washington DC: International Monetary Fund.
 40. Thornton, J. (2007). Fiscal decentralization and economic growth reconsidered. *Journal of Urban Economics*, 61(1), 64-70
 41. Tiebout, C. (1956). A Pure Theory of Local Expenditures. *Journal of Political Economy*, 64, 416–424.
 42. Woller, G., & Phillips, K. (1998). Fiscal Decentralization and LDC Economic Growth: An Empirical Investigation. *Journal of Development Studies*, 34 (4), 139–148.
 43. World Bank. (2013). Decentralization Indicators. Retrieved from <http://siteresources.worldbank.org/PUBLICSECTORANDGOVERNANCE/Resources/285741-1326399585993/8366509-1332861347588/DatabaseFisPolDecVariablesDefinition.pdf>.
 44. Zhang, J. (2013). The effects of China's local government investment on economic growth and excessive investment issue. Retrieved from <http://r-cube.ritsumei.ac.jp/bitstream/10367/5893/1/51212617.pdf>.
 45. Zhang, T., & Zou, H. (1997). Fiscal Decentralization, the Composition of Public Spending and Regional Growth in India. *Development Research Group Working Paper*. Washington DC: World Bank.
 46. Zhang, T., & Zou, H. (1998). Fiscal decentralization, public spending and economic growth in China. *Journal of Public Economics*, 67(2), 221–240.



Goran Radosavljević

is Assistant Professor at the FEFA faculty, Metropolitan University, in the field of Public Finance. He obtained his PhD in 2013. He graduated in Economics at the University of Belgrade, and received MSc in Mathematical Economics and Econometrics from the School for Advanced Studies in the Social Sciences (Ecole des hautes études en sciences sociales) in Paris and Marseille, France. Previously he worked as Teaching Assistant for the courses in Public finance and Economy of the welfare state at the FEFA faculty. From 2002 to 2007, he worked as Teaching assistant at the Faculty of Economics, University of Belgrade, on the topics of Price Theory and Theory of production, and concurrently as a researcher at the Centre for Advanced Economic Studies in Belgrade (2004-2007). From June 2007 to May 2011 he served as Economic Advisor to the Deputy Prime Minister and from May 2011 to July 2012 he was State Secretary in the Ministry of Finance, Government of Serbia. From December 2012 he is employed in NIS Gasprom Neft as Deputy Executive Director, and from 2014 to 2018 as advisor for government relations. From November 2014 he is elected as Secretary General of the National Petroleum Council of Serbia, and he is a member of Program Committee of the World Petroleum Council form 2017. He speaks English and French.