Varazdin Development and Entrepreneurship Agency and **University North**
in cooperation with
Faculty of Management University of Warsaw
Faculty of Law, Economics and Social Sciences Sale - Mohammed V University in Rabat
Polytechnic of Medimurje in Cakovec

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49th International Scientific Conference on Economic and Social Development Development – "Building Resilient Society"

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Editors:
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CONTENTS

THE IMPACT OF FISCAL DECENTRALIZATION ON ECONOMIC GROWTH IN THE CEE COUNTRIES

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ABSTRACT

There has been a global trend of public sector decentralization over the last few decades, justified by the fact that transferring public revenues and expenditures from central to local government level is expected to deliver greater public sector efficiency, higher economic growth rates and better overall macroeconomic performance. In this paper, we empirically investigate if fiscal decentralization enhances or hinders economic growth in Central and European (CEE) member countries of the European Union. Using panel data for the period 1992-2012, we try to determine whether fiscal decentralization, measured as the share of local government revenues/expenditures in general government revenues/expenditures has a positive effect on the GDP per capita growth rate. According to our findings, fiscal decentralization has an adverse effect on the economic growth rate in the CEE countries. This is in line with the argument that in developing countries decentralization could fail to deliver the expected positive impulse on growth if certain economic and institutional preconditions are absent. A negative impact is also found to come from the size of the public sector and inflation. On the other hand, the improvement of the fiscal balance and the openness of the economy have a positive impact on growth.

Keywords: *CEE countries, Economic growth, Fiscal decentralization*

1. INTRODUCTION

There has been a global trend of public sector decentralization over the last few decades, with the expectation that transferring public revenues and expenditures from central to local governments would deliver greater public sector efficiency, higher economic growth and better overall macroeconomic performance. Developed countries were first to give their local authorities greater fiscal power, autonomy and functions. Emerging countries followed, however challenged by their institutional framework and capacity. Some authors find a positive correlation between a country's level of economic development and the level of public sector decentralization (Pommerehne, 1976; Panizza 1999). Oates (1993) shows that larger and more developed countries (with higher GDP per capita) have a higher level of fiscal decentralization. Why is this the case? One view sees decentralization as a luxury good, hence the increase in GDP p.c. increases the "demand" for decentralization. Decentralization becomes more attractive for taxpayers, since the advantages and benefits of this process begin to surpass the potential problems and disadvantages, present in less developed countries (Bahl and Linn, 1992). Another explanation is that most developing countries that implement intensive decentralization reforms have inherited highly centralized systems in the moment of gaining independence. Conyers (1990) claims that a country's decentralization depends on the length of the time period from its independence and the size of centralization of the previous administrative system.

Many authors agree that fiscal decentralization could in turn have a positive impact on growth, through enhancing public sector efficiency, resource allocation and transparency (Oates, 1993; Martinez-Vazquez and McNab, 2006 etc.). According to Oates (1972), local governments are more efficient in resource allocation in the public sector, because they are better in identifying citizens' preferences for public goods and services (allocative efficiency) and are at the same time in a position to provide public goods and services with lower costs (productive efficiency) than central governments. Some argue that the positive effects of decentralization of economic growth are more pronounced in developing than in developed countries, due to their institutional characteristics. In these countries, decentralization is expected to induce larger efficiency gains, resulting from the high transaction and administrative costs inherited from the centralized political and administrative systems (Shah, 1994; 1999). However, the positive impact on growth might not realize, if there is no well-designed and implemented process of decentralization and if local governments and institutions have insufficient capacity for an effective realization of the decentralized functions (Prud'Homme, 1995). Rodriguez-Pose and Kroijer (2009) argue that in countries lacking appropriate institutions, instead of enhancing economic growth and human capital, fiscal decentralization could have an inverse effect on economic growth. Other authors argue that there is a positive, yet nonlinear link between decentralization and economic growth (Wallis and Oates, 1988). Instead of a linear relationship, it is more realistic to expect that there is a certain optimal level of public sector decentralization, which has the strongest positive impact on economic growth (Thiessen, 2003). Thus, according to Blochliger and Egert (2013), countries with lower initial level of public sector decentralization can expect more pronounced positive effects of decentralization on economic growth, compared to countries that have already reached a higher level of fiscal decentralization. This paper aims to contribute to the scarce literature on the effects of fiscal decentralization on economic growth in the Central and East European countries by exploring this relationship for the period 1992-2012. Previous studies of the CEE countries include: Ebel and Yilmaz (2002), Enikolopov and Zhuravskaya (2003), Rodriguez-Pose and Kroijer (2009), Aristovnik (2012), Slavinskaite (2017). The rest of the paper is structured as follows. The second section gives a brief review of the empirical literature on the effects of fiscal decentralization on economic growth. The third section presents the applied data and methodology, followed by a discussion of the empirical results and concluding remarks.

2. EMPIRICAL LITERATURE REVIEW

There is a growing body of literature focused on assessing the effects of fiscal decentralization on economic growth in the last several decades.[1] However, it has produced ambiguous results, as there are many studies that find evidence for a positive, a negative, or no significant impact of decentralization on growth (for an extensive review of studies see Szabo, 2017, or the meta-analysis of empirical studies provided by Baskaran, Feld and Schnellenbach, 2014). The existing empirical literature on the impact of decentralization on economic growth is dominated by studies based on large and heterogeneous samples of developed and developing countries (Davoodi and Zou, 1998; Woller and Phillips, 1998; Thiessen, 2003; Enikolopov and Zhuravskaya, 2003; Iimi, 2005; Martinez–Vasquez and McNab, 2006; Thornton, 2007; Rodriguez – Pose and Kroijer, 2009; Im, 2010; Rodriguez – Pose and Ezcurra, 2011; Blochliger and Egert, 2013), whereas a smaller number of studies explore this link on a single country case, mostly exploring China (e.g. Zhang and Zou, 1998; Lin and Liu, 2000; Jin and Zou, 2005) or the USA (e.g. Xie et al., 1999; Akai and Sakata, 2002).

[1] It is still far smaller (especially for the CEE countries) than the vast empirical literature testing the relationship between decentralization and the size and efficiency of the public sector. This might be related to the fact that economic growth is not of special interest in the public finance theory, because the public sector does not have a direct role in increasing growth, but its role is mainly to provide favorable conditions and not hinder growth.

There is no consensus among authors about the direction in which decentralization affects the economic growth. Numerous studies confirm the existence of a significant positive relationship between fiscal decentralization and economic growth (Lin and Liu, 2000; Akai and Sakata, 2002; Thiessen, 2003; Iimi, 2005; Buser, 2011; Blochliger and Egert, 2013; Slavinskaite, 2017). Yet, some studies show that decentralization slows economic growth (Davoodi and Zou, 1998; Zhang and Zou, 1998; Enikolopov and Zhuravskaya, 2003; Jin and Zou, 2005; Rodriguez – Pose and Ezcurra, 2011; Baskaran and Feld, 2013), or that it does not have any impact on growth (Woller and Phillips, 1998; Thornton, 2007; Asatryan and Feld, 2015). Unlike most studies that assume the existence of a linear relationship between decentralization and economic growth, Thiessen (2003) shows that although positive, the link is not linear, but has an inverse "U" shape. This means that decentralization has a positive effect on growth up until the country reaches a certain (optimal) level of decentralization, but above that level it begins to hinder economic growth. The diminishing returns on decentralization are confirmed by Blochliger and Egert (2013), who find that countries with a lower level of decentralization can expect more pronounced positive effects on economic growth. Some studies find a different impact of fiscal decentralization on growth in developed and developing countries. Davoodi and Zou (1998), Im (2010) and Slavinskaite (2017) find no significant relation in developed countries and provide mixed results for developing countries: Davoodi and Zou (1998) find a negative effect, Im (2010) finds a negative effect in semi-developed countries and no significant effect in developing countries and Slavinskaite (2017) finds a positive effect in less developed EU countries (significant at the 10% confidence level). Canavire-Bacarreza et al. (2019) found a small, but positive effect of revenue and expenditure decentralization in developed countries and no significant effect in developing countries. If we analyze separately the effects of decentralization of public revenues, public expenditures and the vertical imbalance, recent studies conclude that revenue decentralization has more pronounced stimulating effects on economic growth (Rodriguez – Pose and Kroijer, 2009; Blochliger and Egert, 2013; Gemmel et al., 2013), while the vertical fiscal imbalance has pronounced adverse effects on growth (Rodriguez – Pose and Kroijer, 2009). Finally, decentralization can have different effects on economic growth depending on the influence of other institutional and political factors in a country (Iimi, 2005; Enikolopov and Zhuravskaya, 2003; Buser, 2011). For example, Enkilopov and Zhuravskaya (2003) conclude that decentralization can stimulate or hinder economic growth in developing countries, depending on the quality of political parties and the political governance in the country. Aristovnik (2012) relies on Buser's (2011) finding that decentralization has a greater positive effect on promoting growth in the presence of a sound institutional environment, to try to explain the smaller success of fiscal decentralization in the Eastern European economies.

3. DATA AND METHODOLOGY

3.1. Model

In the specification of the empirical model for investigation of the effects of decentralization on economic growth we start from the classical model of exogenous economic growth (Solow, 1956), according to which growth is a function of two production factors: (labour (population) and physical capital). Further, in the empirical model the human capital is added. According to many authors, the countries that invest more in human capital have higher innovation rates (new products and technologies), and thus have a tendency to grow faster than other countries (Romer, 1994). In the end, we include in the model macroeconomic policy variables, following Barro's (1991) model of endogenous growth and the Levine и Renelt (1992) model. These variables are: size of the public sector, macroeconomic stability (fiscal balance, inflation rate), openness of the economy etc.

Hence, the empirical model takes the following general form:

$$economic\ growth_{it} = \beta_0 + \beta_1\ physical\ capital_{it} + \beta_2 human\ capital_{it} + \beta_3 population_{it} + \beta_4 macroeconomic\ variables_{it} + \beta_5 decentralization_{it} + u_{it}$$

We estimate an unbalanced (due to data availability) panel regression model, which allows us to use a larger number of observations for multiple countries and multiple periods. A fixed effects model was used, as suggested by the Hausmann. White cross-section weights and first order autoregression component (AR1) were used in order to correct heteroscedasticity and serial correlation, respectively.

3.2. Data and variables

The empirical investigation was conducted on a sample of 11 countries from Central and Eastern Europe (CEE countries), over the period 1992–2012. Due to data limitations, the sample includes only the CEE countries that are EU members: Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia. A restraining factor of our research is the fact that, unlike the case of old EU member states, for the new EU member states, the time series are relatively short and macroeconomic data cannot be found before the 1990s. On the other hand, we used the decentralization data series from the Fiscal Decentralization Database of the World Bank that only provides decentralization data until 2012. Therefore, due to the limited and short time series, in this paper we do not examine the long-term effects of fiscal decentralization. The dependent variable in the regression model is the economic growth rate, measured by the annual real growth rate of GDP per capita. The main explanatory variable in the model is fiscal decentralization, measured by two main indicators: government expenditure decentralization (share of local government expenditures in total government expenditures) and government revenue decentralization (share of local government revenues in total government revenues). The physical capital is captured by two variables: the ratio of gross savings to GDP and the gross fixed capital formation to GDP. The choice of the appropriate indicators of human capital was not simple, taking that most of the tested variables proved to be statistically insignificant. On the other hand, it is hard to assume that human capital is not important to economic growth, so probably the reason for the statistical insignificance of these variables comes from the limitations and discontinuity of the time series. Out of the tested variables, we decided to include: secondary school enrollment ratio and the public expenditures for education. Other tested variables include: tertiary education enrollment rate, public revenues for science and research, as well as the number of patent applications and researchers per million citizens. The impact of the macroeconomic policy is presented in the model with the following indicators: public sector size i.e. government expenditures to GDP, budget balance to GDP, inflation (annual growth rate of CPI), and the trade openness (ratio of imports and exports of goods and services to GDP). In order to increase the explaining power of the model, we include several demographic variables that are most often found in existing empirical studies of economic growth, such as: population growth, urban population and dependent population ratio. A detailed description of data and their sources are given in the Annex. The tables below provide descriptive statistics for the variables there are our main focus and refer to the level of economic growth and the level of fiscal decentralization. The descriptive statistic for GDP per capita and GDP per capita growth rate (table 1) shows that, among the CEE countries, the lowest average level of GDP p.c. is recorded in Bulgaria (3 131 USD), Romania (4 241 USD) and Latvia (5 238 USD), and the highest average level of GDP p.c. in Slovenia (15 637 USD), Czech Republic (11 447 USD) and Slovakia (10 205 USD). As for the economic growth rate, measured by GDP p.c. annual growth, over the analyzed period, Estonia recorded the highest

average growth rate (5.07%), followed by Poland (3.68%), Latvia (2.87%) and Croatia (2.72%), while Romania, Czech Republic and Slovenia recorded the lowest growth rates (all below 2%).

Table 1: Descriptive statistics for GDP per capita (authors' calculations)

Country	GDP per capita, US $				GDP per capita, growth rate			
	Mean	Std. Dev.	Min.	Max	Mean	Std. Dev.	Min.	Max
Bulgaria	3131	829	2218	4692	2.42	4.94	-8.56	10.82
Croatia	9309	1499	6532	11375	2.72	3.99	-6.83	10.04
Czech Rep.	11447	2200	8606	14612	1.68	4.09	-11.40	6.73
Estonia	8626	2706	4637	12275	5.07	6.10	-13.93	13.02
Hungary	8482	1745	5230	11534	2.01	3.49	-11.89	7.10
Latvia	5238	1734	3166	8999	2.87	7.87	-31.18	13.27
Lithuania	6780	2221	3819	10549	2.40	9.17	-21.17	11.15
Poland	7271	2119	4380	10753	3.68	3.03	-7.34	7.02
Romania	4241	922	3088	6073	1.66	5.55	-12.14	9.75
Slovakia	10205	2637	6822	15065	2.19	5.05	-14.64	10.46
Slovenia	15637	3182	10787	20683	1.77	4.35	-8.96	6.36

Descriptive statistics for the decentralization variables are presented in table 2. Over the analyzed period, the most decentralized CEE countries (above 20% share of local government expenditures in total government expenditures) are: Poland, Latvia, Hungary, Lithuania and Estonia, while the least decentralized countries (below 15% share of local government expenditures in total government expenditures) are: Croatia, Slovakia, Bulgaria and Slovenia. The same conclusion stands for the revenue decentralization. CEE countries with a higher level of expenditure decentralization also have a higher level of revenue decentralization and vice versa. If we analyze the standard deviation, we can see that Slovakia, Romania and Poland recorded the largest increase in expenditure and revenue decentralization (above 5 p.p.).

Table 2: Descriptive statistics for fiscal decentralization variables (Authors' calculation)

Country	Expenditure Decentralization				Revenue Decentralization			
	Mean	Std. Dev.	Min.	Max	Mean	Std. Dev.	Min.	Max
Bulgaria	14.94	1.87	11.25	18.62	15.86	1.73	12.42	18.19
Croatia	9.32	0.54	8.47	10.13	11.69	0.53	10.81	12.34
Czech Rep.	17.95	1.86	15.16	19.98	22.85	2.31	19.58	25.94
Estonia	21.47	2.54	17.58	24.35	21.87	1.98	17.70	25.06
Hungary	21.75	1.10	19.85	23.32	23.84	1.64	19.81	26.57
Latvia	22.32	1.84	18.01	24.94	24.91	0.81	23.46	26.40
Lithuania	21.58	2.31	18.35	27.65	22.92	3.20	18.84	30.64
Poland	23.56	4.45	13.81	28.95	27.43	5.05	16.61	33.02
Romania	15.97	5.12	8.74	22.90	19.44	4.97	11.95	26.64
Slovakia	11.36	5.03	4.55	16.18	13.09	5.46	5.59	18.40
Slovenia	13.46	2.99	8.37	16.35	16.16	3.38	10.76	19.92

4. RESULTS AND DISCUSSION

Table 3 summarizes the results of the estimated panel regressions. The regression equations (1) and (3) refer to the effects of decentralization of government expenditures on the GDP growth rate, while the equation (2) and (4) refer to the effects of decentralization of government revenues. The equations (3) and (4) result from a process of individual testing and exclusion of insignificant variables, which allowed for an additional testing and confirming the validity of the relationship between decentralization and growth.

Table 3: Panel regression results (Authors' calculations)

Dependent variable: GDP per capita, annual growth rate				
Independent variables:				
	(1)	(2)	(3)	(4)
Exp decentralization	-0.313*** (0.092)		-0.200* (0.113)	
Rev decentralization		-0.288*** (0.083)		-0.226** (0.115)
Government expenditures	-0.364** (0.144)	-0.355*** (0.133)		
Budget balance	0.529*** (0.133)	0.479*** (0.117)	0.581** (0.230)	0.567*** (0.216)
Inflation	-0.381*** (0.113)	-0.359*** (0.100)	-0.003*) (0.002_	-0.004*** (0.001)
Openness	0.254*** (0.064)	0.248*** (0.066)	0.118*** (0.042)	0.105*** (0.039)
Savings	-0.265 (0.291)	-0.316 (0.272)		
Capital	0.662** (0.306)	0.603** (0.287)	0.434*** (0.160)	0.387*** (0.144)
School	-0.104 (0.099)	-0.139 (0.094)		
Education expenditures	0.134 (0.216)	0.133 (0.193)		
Population	-1.501*** (0.543)	-1.558*** (0.590)	-1.506*** (0.330)	-1.611*** (0.355)
Urbanization	-2.066** (0.814)	-1.911** (0.753)	-1.289*** (0.597)	-1.211** (0.576)
Dependency	1.637*** (0.347)	1.584*** (0.330)		
Constant	54.103 (39.909)	52.784 (35.359)	66.004** (32.626)	64.727** (32.697)
AR(1)	0.443*** (0.105)	0.420*** (0.115)	0.424*** (0.126)	0.375*** (0.119)
R^2	0.746	0.753	0.539	0.538
F-statistic	10.394***	10.943***	10.536***	10.612***
Durbin-Watson statistics	2.086	2.159	2.013	1.972
Cross - section	11	11	11	11
Sample	1996-2012	1996-2012	1992-2012	1992-2012
Observations	110	110	181	181

Note: The White heteroskedasticity consistent standard errors are given below the coefficients.
**10% level significance, **5% level significance, ***1% level significance.*

The regression results indicate that decentralization of government revenues and government expenditures, ceteris paribus, has a statistically significant negative effect on economic growth rates in CEE countries, confirming the results of Davoodi and Zou (1998), Rodriguez-Pose and

Kroijer[2] (2009), Im (2010). These finding is in line with some authors' skepticism that decentralization in developing countries, where certain economic, political and institutional preconditions are not met, can ultimately have an adverse instead of a positive effect on growth (Litvack et al., 1998; Dabla-Norris, 2006 etc.). Namely, decentralization is a multi-dimensional process and its effects on macroeconomic performances do not depend solely on the level of decentralization of public revenues and expenditures, but also on other factors, like the quality and functioning of institutions, the public administration and the entire political system in general. Such results are a motivation for further research of the macroeconomic implications of decentralization, where beside fiscal decentralization, indicators of the administrative and political dimensions of the decentralization process of the CEE countries will be included. The results also indicate that the size of the public sector, i.e. the ratio of total general expenditures to GDP, also exhibits a statistically significant adverse effect on growth. On the other hand, higher public saving, i.e. improvement of the budget balance, is, as expected, growth enhancing. Among the statistically significant variables with a positive impact is also the physical capital, measured by the gross fixed capital formation to GDP. Unlike it, none of the tested human capital variables had a statistically significant effect. Contrary to expectations, the secondary school enrollment ratio even showed a negative coefficient, while a positive effect on the human capital variable is provided only by the size of the public expenditures in education. Since it is difficult to believe that human capital has no influence or has a negative influence on growth, we believe this is attributed to the weakness of the chosen indicators and even more to the limitations of the data series. As for the tested demographic variables, we found that population growth rate and urban population share in total population have a significant negative effect, while the dependency ratio has a significant positive effect to economic growth. Regarding the other tested variables, in line with expectations, the inflation rate proved to have a significant negative effect on growth, while the trade openness of the economy has a positive impact on growth.

5. CONCLUSION

The main purpose of the paper was to contribute to the empirical literature on fiscal decentralization, by estimating the impact of fiscal decentralization on economic growth in the Central and Eastern European countries for the period 1992-2012. The existing body of research provides mixed results regarding the positive or negative impact of fiscal decentralization on economic growth. The empirical assessment in this paper showed that fiscal decentralization, measured both by the share of local government revenues in total government revenues and by the share of local government expenditures in total government expenditures, has an adverse effect on economic growth in the Central and Eastern European countries. These findings are in line with the argument that in developing countries decentralization could fail to deliver the expected positive impulse on growth if certain economic and institutional preconditions are absent. Namely, in developing and former centrally planned economies, the quality of institutions, public administration and the political system in general, are less developed than in developed countries and could prevent fiscal decentralization from delivering a positive impulse on growth. Concerning the other independent variables, a negative impact is also found to come from the size of the public sector and inflation. On the other hand, the improvement of the fiscal balance and the openness of the economy have a growth-enhancing effect. Such results are a motivation for future research of the macroeconomic implications of decentralization for a larger sample of all EU countries, divided in two sub-samples (new EU member states and old EU member states) in order to see if the macroeconomic implications of decentralization differ in the two groups.

[2] For public expenditure and transfers.

Additionally, because longer data series are available for the old EU member states, we would be able to investigate if the link between decentralization and growth is linear or parabolic, as some authors suggest.

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APPENDIX

Table A.1: Variables: description and sources

Variable	Description	Source
Economic growth	GDP per capita growth (annual %)	World Development Indicators, World Bank
Expenditure decentralization	Local expenditures, % of general government expenditures	Fiscal Decentralization Database, World Bank
Revenue decentralization	Local revenues, % of general government revenues	Fiscal Decentralization Database, World Bank
Government expenditures	General government expenditures, % of GDP	World Economic Outlook Database, IMF
Budget	Budget balance (surplus/deficit), % of GDP	World Economic Outlook Database, IMF
Inflation	Inflation, consumer prices (annual %)	World Economic Outlook Database, IMF
Openness	Trade (sum of exports and imports of goods and services, % of GDP)	World Development Indicators, World Bank
Savings	Gross savings, % of GDP	World Development Indicators, World Bank
Capital	Gross fixed capital formation, % of GDP	World Development Indicators, World Bank
Patents	Patent applications, residents and nonresidents	World Development Indicators, World Bank
Researchers	Researchers in R&D (per million people)	World Development Indicators, World Bank
School	School enrollment, secondary (ratio of total enrollment to the population of the age group)	World Development Indicators, World Bank
University	School enrollment, tertiary (ratio of total enrollment to the population of the age group)	World Development Indicators, World Bank
Education expenditures	Public spending on education, % of government expenditure	World Development Indicators, World Bank
Research Expenditures	Public spending on research and development, % of government expenditure	World Development Indicators, World Bank
Population	Population growth (annual %)	World Development Indicators, World Bank
Urbanization	Urban population, % of total population	World Development Indicators, World Bank
Dependency	Age dependency ratio (people younger than 15 or older than 64, % of working-age population)	World Development Indicators, World Bank