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Fiscal decentralisation and economic growth: Is there a relationship?

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Abstract

The main objective of this paper is to study the concept of fiscal decentralisation and the influence of fiscal decentralisation on economic growth in selected European Union countries during the period of 2004 – 2014. Academic interest in fiscal decentralisation began in the 1950s, when the original Tiebout (1950) article on the theory of local government management level cost created a base for never-ending debate about fiscal decentralisation effect on well-being of the country. The empirical literature analysing the influence of fiscal decentralisation on economic growth has emerged since the 1990s. The relevant studies vary as to whether they use time series, cross-sectional or panel data, as to whether they rely on single-country or cross-country samples, and they vary in fiscal decentralisation measures, estimation methods and sample composition. The empirical analysis was based on the method of Simple Additive Weighting (SAW) and regression analysis. The data analysis has revealed that there is a relationship between fiscal decentralisation and economic growth.

Keywords: Fiscal decentralisation, economic growth, panel data.

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1. Introduction

Over the past several decades, the devolution of fiscal powers to subnational governments has taken place in many Europe Union countries. According to International Economic Cooperation Organization (2013), decentralisation of public services and funding had caused a growing interest of political representatives in recent years. Mercedes Bresso, the President of EU Committee of the Regions, highlighted significance of local authorities during the report in Brussels, affirming the necessity of the participation of local and regional authorities to achieve the high EU strategy goals of 2020, because in many countries it is the local authorities that play a key role in economic policy. Fiscal decentralisation phenomenon is highly discussed at various levels and aspects, and the Organization for Economic Co-operation and Development (Eng. Organization for Economic Co-operation and Development, hereinafter – the OECD) gives it an extreme attention as well as the World Bank. Fiscal decentralisation has become an interesting topic until today because researches about fiscal decentralisation are not only considered from the economic perspective, but also from other perspectives such as politic, geographic, other subjects.

Academic interest in fiscal decentralisation began in the 1950s, when the original Tiebout (1956) article on the theory of local management level costs created a base for never-ending debate about fiscal decentralisation effect on well-being of the country. Formation of The European Union and The European Charter of Local Self-Government, that came into force on September 1, 1988, which set out the general European standards that, protected and expanded rights and freedoms of local self-government including local government financial autonomy gave, gave a new impetus to democratic self-government development.

Empirical research of fiscal decentralisation can be divided into four extensive categories:

- *Growth*. Impact of fiscal decentralisation on economic growth. The most recent works on this topic include Akai *et al.* (2007), Thornton (2007), Baskaran and Feld (2009), Rodríguez-pose *et al.* (2009), Rodríguez-pose and Ezcurra (2010), Rodríguez-pose and Ezcurra (2011), Gemmell *et al.* (2013), Baskaran and Feld (2013), Szarowska (2014), Perez-Sabastian and Raveh (2016); Sun *et al.* (2017);
- *Deficit and debt*. Fiscal decentralisation may have an impact on the deficit of state budget and growth of public debt (Freitag & Vatter 2008; Schaltegger & Feld, 2009, Baskaran 2010; Buiatti *et al.* 2013; Rompuy, 2015);
- *Inequality*. Fiscal decentralisation may affect regional inequality. Research works focused on regional inequality or regional income disparities (Akai & Hosio 2009, Song, 2013; Sacchi & Salotti 2014; Kyriacou *et al.* 2017);
- *Public sector size*. Choice of society is analysed focusing on the size of public sector (Cassette & Paty 2010; Baskaran 2011; Cantarero & Perez 2012; Asword *et al.* 2013; Liberati & Sacchi 2013; Silvia & Maleševic 2014; Sijabat 2016).

Over the last four decades, special attention has been given to the interconnection between fiscal decentralisation and economic growth. The relationship between fiscal decentralisation and economic growth is complex, and researchers have attempted to disentangle it both theoretically and empirically. Literature analysis revealed that interest in fiscal decentralisation and economic growth is growing, but scientific results of the investigation give no unambiguous answer.

The aim of this article is to analyse the influence of fiscal decentralisation on economic growth in selected European Union countries during 2004–2014.

The study's tasks are:

- to review scientific literature of fiscal decentralisation and economic growth;
- to analyse the level of fiscal decentralisation in selected Europe Union countries;
- to evaluate the influence of fiscal decentralisation on economic growth.

The research method used: a logical and comparative literature review, method of SAW, statistical data analysis and regression analysis.

2. Literature review

Scientific literature analysis revealed the link between two burning research areas – fiscal decentralisation evaluation and economic growth. The increasing importance to the fiscal decentralisation’s impact on economic growth was found in the field of fiscal decentralisation assessment. Economic growth is affected by wide array of factors (Travkina & Tvaronavičienė 2015; Ignatavičius *et al.* 2015; Aleksejeva 2016; Genys 2016), among which fiscal decentralisation plays certain role (Musgrave 1959; Oates 1972). What is the relationship between FD and economic growth? According to the fiscal federalism theory (Tiebout 1956; Oates 1972), local government fiscal autonomy ensures efficient allocative outcome, which may eventually lead to higher rates of growth.

The first theoretical discussion of fiscal decentralisation from economic point of view data back to the middle of the twentieth century. Musgrave (1959) and Tiebout (1956) formulated the theoretical foundations of fiscal federalism. These ideas were further developed by Oates (1972, 1993, 1999) and Brennan and Buchanan (1980).

Empirical studies focused on the relationship between fiscal decentralisation and economic growth provide mixed results. There is no one answer. Table 1 summarises empirical findings of studies on the influence of FD or federalism on economic growth.

Table 1. Research studies of fiscal decentralisation impact on economic growth

Author Year	Time period, sample	Fiscal decentralisation impact on economic growth		
		Positive	Negative	No impact
Thiessen (2003)	1973–1998 OECD countries	+		+
Akai <i>et al.</i> (2004)	1992–1997 50 JAV states	+	+-	-++++hfgdfs
Limi (2005)	1997–2001 51 countries	+		
Thornton (2007)	1980–2000 19 OECD countries			+
Rodríguez-Pose and Kroijer (2009)	1990–2004 Central and Eastern European countries	+	+	
Rodríguez-pose and Ezcurra (2011)	1990–2005 21 OECD countries	++	+	
Gemmell <i>et al.</i> (2013)	1972–2005 23 OECD countries	++	+	
Baskaran and Feld (2013)	1975–2008 23 OECD countries			+
Szarowska (2014)	1995–2012 17 European countries	++	+	

Theissen (2003), Akai *et al.* (2004), Limi (2005), Rodríguez-Pose and Kroijer (2009), Rodríguez-pose and Ezcurra (2011), Gemmell *et al.* (2013) and Szarowska (2014) found a positive relationship between fiscal decentralisation and economic growth. Akai *et al.* (2004), Rodríguez-Pose and Kroijer (2009), Gemmell *et al.* (2013), Rodríguez-pose and Ezcurra (2011), Szarowska (2014) showed that fiscal decentralisation and economic growth negatively correlated. There is a group of researchers who have found relation between fiscal decentralisation and economic growth, but it is not statistically significant (Davoodi & Zou 1998; Thiessen 2003; Thornton 2007; Baskaran & Feld 2013).

3. Methodology

The empirical study follows a common approach applied in most of the studies on this topic. Barro endogenous model was adopted as a appropriate analytical framework to investigate the impact of fiscal decentralisation on economic growth (Davoodi & Zou 1998; Akai & Sakata 2002; Baskaran & Feld 2009; Gommell *et al.* 2013; Lozano & Julio 2015, Filippeti & Sacchi 2016).

Macro – economic and fiscal variables used in regressions have been drawn from OECD fiscal decentralisation database, Word Bank, Eurostat government finance statistics database. Fiscal decentralisation has many indicators: expenditure decentralisation, revenue decentralisation, borrow power and inter-governmental transfer. In this paper will be use fiscal decentralisation index (FDI) as fiscal decentralisation variable (Slavinskaitė & Ginevicius 2016).

A regression empirical analysis is preferred because it allows to include a large number of countries, which adds greater variation to the dataset (Cottarelli & Jaramillo, 2012). The technique of fixed effect panel data model was adopted for estimating the parameters of the regression model. The study employs the equation form used by Lapinskienė *et al.* (2014, 2015).

Regressions include the following:

Dependent variable is the annual growth rate of GDP per capita.

Independent variables are index of fiscal decentralisation and six control variables that were found to be significant in almost all economic growth researches (Nguyen & Anwar, 2011; Baskaran & Feld, 2013; Canterero & Gonzalez, 2009; Stailova & Potonov, 2012; Gemmel *et al.*, 2013; Lazano & Julio, 2015).

The model adopts the following form:

$$y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 Z_{it} + \varepsilon_{it}, \quad (1)$$

where

y_{it} stands for the GDP per capital for each country and year

β_1 measures the partial effect of X_{it} on y_{it} with Z_{it} held constant

β_2 measures the partial effect of Z_{it} on y_{it} with X_{it} held constant

X_{it} stands for quantitative indicators (six control variables)

Z_{it} stands for the FDI for each country and year

β_0 is a scalar

i denotes countries $i = 1 \dots, N$

t denotes time $t = 1, \dots, T$

ε_{it} is a random error term.

The real data consist of 22 selected European Union countries: Bulgaria (BG), Croatia (HR), Cyprus (CY), Czech Republic (CZ), Denmark (DK), Finland (FI), France (FR), Ireland (IR), Italy (IT), Netherlands (NL), Sweden (SW), United Kingdom (UK), Estonia (ES), Hungary (HU), Latvia (LV), Lithuania (LT), Poland (PO), Portugal (PT), Slovak Republic (SK), Slovenia (SV), Rumunia (RO).

The estimation procedure for regression model parameters employed the ordinary least squares method.

$$GDP_{it} = \alpha + \mu_i + \beta_1 FDI_{it} + \beta_2 LAB_{it} + \beta_3 INV_{it} + \beta_4 HUM_{it} + \beta_5 EML_{it} + \beta_6 TECH_{it} + \beta_7 STRUC_{it} + \varepsilon_{it} \quad (2)$$

Our control variable (X) includes: 1) the ratio of investment to GDP (INV), 2) economic structure (STRUC), 3) human capital – expenditure for education (HUM), 4) technology (TECH), 5) GDP per working capital (EML) and 6) employment (EML).

FDI (Z) consists of four different variables (sub-indices): 1) revenue decentralisation, 2) expenditure decentralisation, 3) transfers to subnational government from other government levels and 4) borrow decentralisation.

The results are statistically processing using the MS Excel and Eview software. The evaluation model of the impact of fiscal decentralisation on economic growth was generated by integrating the FDI into the Barro endogenous growth model.

4. Empirical results

The main purpose of this section is to calculate the FDI for selected Europe Union countries to facilitate subsequent investigations of the relationship between fiscal decentralisation and economic growth.

In the first step, the index of fiscal decentralisation was calculated (Slavinskaitė & Ginevicius, 2016). Results of calculation are shown in Figure 1 for selected European Union countries.

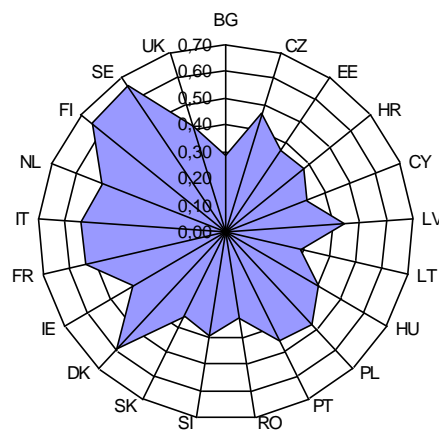


Figure 1. Average of FDI of countries in 2005–2014 years.

Figure 1 shows that FDI in the higher GDP countries is higher than in the lower GDP countries and ranges from 0.40 to 0.71. The highest FDI was found in Sweden (0.71) and the lowest FDI in Bulgaria and Lithuania (0.28).

The estimated regression by using the model of fixed effects shows that fiscal decentralisation, as well as other factors of economic growth included in the model, affects the economic growth of EU-21 countries. The p-value of all the variables included in the model is <0.05 , which means that the variables have a statistically significant effect on the economic growth at the probability of 95%. Slope coefficient reaches 0.19026. Fiscal decentralisation is being measured with a 1 year of delay effect (lag), which means that the effect occurs after one year. The results of the generated model indicate (formula 2) that the model is suitable, as R^2 of approximately 0.99. F – Statistics ($p < 0.05$) shows the model to be reliable. Estimating the autocorrelation of tolerance of 1.0922, with the DW factor taken into account, was achieved during this research. Autocorrelation limits: bottom – 1,697, top – 1.841. Durbin Watson factor falls within the interval that does not include autocorrelation. For that reason, the model does not have autocorrelation. Specifically, the p-value of Student’s test was used to examine the statistical significance of the effect of the independent variables on the dependent

variable. In this economic growth estimation, p-value was used to determine the significance of FDI(-1), LAB, INV, HUM, EML, TECH and STRUC (Table 2).

Table 2. Evaluation result of fiscal decentralisation impact on economic growth in the ES-21

Variable	Coefficient	Standard error	T-Statistics	p-value
C	0.08461	0.02402	3.52269	0.0006***
FDI(-1)	0.19026	0.04604	4.13219	0.0001***
LAB	0.16925	0.02789	6.06721	0.0000***
INV	0.10370	0.01113	9.31602	0.0000***
HUM	0.13069	0.03111	4.20127	0.0000***
EML	0.02424	0.00891	2.71774	0.0073***
TECH	0.04464	0.00807	5.53122	0.0000***
STRUC	0.06438	0.01885	3.41642	0.0008***
Effects specification				
R squared			0.9985	
F-statistic			3981.06	
DW			1.0922	
Prob (F-statistic)			0.0000	

Note: *** statistical significance at the 1% level; ** statistical significance at the 5% level.

Table 2 presented the estimated results indicate that economic growth is positive associated with fiscal decentralisation and economic growth in EU-21 countries. The estimated coefficient of fiscal decentralisation is statistically significant and positive at 1% level. It is interesting to note that this pattern is consistent with the empirical studies of Jim and Zou (2005) and Zhang and Zou (1998). R^2 and Adjusted R^2 have been calculated by Eviews.

5. Conclusion

Scientific literature analysis revealed the link between two burning research areas – fiscal decentralisation evaluation and economic growth. The increasing importance of the fiscal decentralisation’s impact on economic growth was found in the field of fiscal decentralisation assessment.

FDI is higher in the countries of high economic development. The highest FDI has Sweden (0.71). The lowest FDI has Bulgaria and Lithuania (0.28).

The research proved that the impact of fiscal decentralisation on economic growth in the EU-21 countries is positive and statistically significant. The p-value of all the variables included in the model is <0.05 , at the probability of 95%. The determination factor of the model R^2 reaches 0.9985, because F – statistics <0.05 .

The generated model of fiscal decentralisation evaluation creates preconditions for further scientific challenges and is suitable not only to analyse fiscal decentralisation of the selected countries, but also the impact of fiscal decentralisation on countries' economic growth. The research should be continued, taking into account the fact that the decentralisation of public finances is one of the possible solutions enhancing competitive advantage of regions, using local resources purposefully and enhancing economic growth of the country.

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