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CONTENTS

DOES FISCAL DECENTRALIZATION CONTRIBUTE IN ECONOMIC GROWTH?

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Abstract

This paper aims to analyse and discuss fiscal decentralization and its impact in economic growth. Empirical studies about the impact of fiscal decentralization in economic growth all the time have provided mix results. Why this happens, why some authors concluded that fiscal decentralization has a positive impact in economic growth, some authors concluded that fiscal decentralization has a negative impact in economic growth and some authors did not find a relation between fiscal decentralization and economic growth? This paper will review, analyse and compare findings of these studies and will highlight and explain differences on the dimensions studied from the authors about this phenomenon. Its main contribution is to offer a better understanding on the relationship between fiscal decentralization and economic growth.

Keywords: revenue decentralisation, expenditure decentralisation, cross-country analysis, reforms, fiscal policies.
JEL classification codes: H71, H72, P41, N12, N14, N15.

1. INTRODUCTION

The process of decentralization has become inseparable part of reforms during last decades in both developed and developing countries. Decentralization generally is defined as the transfer of powers and functions from central authorities to other administrations functioning in more limited spheres (Joumard, Lonti & Curristine, 2007; Schaeffer & Yilmaz, 2008; Cantarero & Gonzales, 2009; Hammond & Tosun , 2011). Decentralization reforms are made in order to stimulate economic growth, to improve efficiency in public sector and to increase competition among local authorities in delivering public services (Bahl & Linn, 1992; Bird & Wallich, 1993; Davoodi & Zou, 1998). Types of decentralization are political decentralization, market decentralization, fiscal decentralization and administrative

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decentralization. This paper aims to analyse and discuss fiscal decentralization and its impact in economic growth. Authors worldwide have a huge interest to study the impact of fiscal decentralization in economic growth because fiscal decentralization is a complicated phenomenon with a lot of dimensions (Davoodi & Zou, 1998), and empirical studies about this phenomenon all the time provide mix results. Why this happens, why some authors concluded that fiscal decentralization has a positive impact in economic growth, some authors concluded that fiscal decentralization has a negative impact in economic growth and some authors did not find a relation between fiscal decentralization and economic growth? This paper will review, analyse and compare findings of these studies and will highlight and explain differences on the dimensions studied from the authors about this phenomenon. Its main contribution is to offer a better understanding on the relationship between fiscal decentralization and economic growth. Similar studies that reviewed literature in this field are studies from Martinez-Vazquez & McNab (2001) and Breuss & Eller (2004). Both studies tried to explain dimensions of fiscal decentralization through literature review but these studies as was pointed out from their authors have faced some limitations. Martinez-Vazquez & McNab (2001), argued that mixed results are caused because of the problems in methodological approaches, authors cannot be sure that evidences were totally reliable. In the other hand Breuss & Eller (2004), mentioned three limitations that cause mixed results: misspecification of the empirical estimation models, omnipresent data approach and bi-directional causalities between fiscal decentralization and economic growth. Having in mind these limitations and the fact the from the study of Breuss & Eller (2004), have passed 14 years and a lot of studies in this field have been published during this time, this study will have again in focus the relationship between fiscal decentralization and economic growth and will try to explain this relationship through literature review. Some studies that have been reviewed from Martinez-Vazquez & McNab (2001) and Breuss & Eller (2004), are reviewed again in this study in order to have a clear connection between the impact of fiscal decentralization and economic growth. This paper is organized as follows: after this part, we will discuss about the definition of fiscal decentralization, next will show the linkage between fiscal decentralization and economic growth. Then this paper will review first generation of literature that link fiscal decentralization with economic growth and the fifth part will review empirical studies in this field. At the end conclusions are presented.

2. DEFINING FISCAL DECENTRALIZATION

As was mentioned above, decentralization is the process of transferring powers from the central authorities to local authorities(Hammond & Tosun, 2011; Joumard, Lonti & Curristine ,2007; Schaeffer & Yilmaz,2008; Cantarero & Gonzales, 2009), so in this context fiscal decentralization could be defined as a process of switching responsibilities of revenue collection and expenditure execution from the central authorities to local ones (Feruglio& Anderson, 2008; Cantarero & Gonzales, 2009; Sow & Razafimahefa,2017). Fiscal decentralization is a crucial element of any decentralization process because it refers to the public finance dimension of intergovernmental relations (Feruglio & Anderson, 2008). According to Oates (1972) and Wildasin (1988), to reach the highest levels of fiscal decentralization is essential that local authorities have sufficient own sources revenues to provide all public services. Martinez-Vazquez, Lago-Penas & Sacchi (2015), pointed out that fiscal decentralization copes with how the public sector is organized and it copes with the ways of developing opportunities for higher growth and welfare. Fiscal decentralization from Aslim & Neyapti (2017), is defined as a process that improves democratic governance practices in order to contribute in economic efficiency. From these views easily can be concluded that the process of fiscal decentralization is undertaken to offer better public services in local authorities in order to have economic growth. According to Tiebout (1956), the basic economic arguments in favour of fiscal decentralization are based in two assumptions:

1. Fiscal decentralization will increase economic efficiency because local authorities are better positioned to offer public services as a result of information advantage
2. Competition and population mobility between local authorities to offer public services will ensure the matching of preferences of local communities and local authorities.

Despite these views and assumptions, as was mentioned above empirical studies about this topic have provided mix results. As Martinez-Vazquez & McNab (2001), stated that the impact of fiscal decentralization in economic growth is more than an academic question, this paper will address studies in this field and will summarize their findings thus to have a better view about the link between fiscal decentralization and economic growth.

3. FISCAL DECENTRALIZATION AND ITS LINKAGE TO THE ECONOMIC GROWTH

States worldwide seek to make many reforms in the way they are organized in order to achieve higher economic development and fiscal decentralization is one of them. According to Oates (1993), theoretical and empirical analyses of fiscal decentralization traditionally are made in order to find its impact on economic growth. Zhang & Zou (2001), Breuss & Eller (2004), pointed out that there are three reasons why fiscal decentralization is linked with economic growth: first reason is that growth is seen as an objective of fiscal decentralization, second reason is that it is an explicit intention of governments to adopt policies that lead to a sustained increase in per capita income and the third reason is that per capita growth is easier to measure and to interpret than other economic performance indicators. Having in mind that one of the major objectives of fiscal decentralization is economic growth (Bahl & Linn, 1992; Bird & Wallich, 1993; Oates, 1993; Davoodi & Zou, 1998 Zhang & Zou, 2001; Breuss & Eller, 2004), researches have modified popular economic growth models such as Solow model and Barrow’s endogenous growth model to incorporate a potential relationship between these two elements (Davoodi & Zou, 1998; Thiessen, 2003; Brueckner, 2006; Yushkov, 2015).

Martinez-Vazquez, Lago-Penas & Sacchi, (2015), pointed out that in the literature the earliest studies about the linkage between fiscal decentralization and economic growth are studies by Tiebout (1956), Musgrave (1959), Olson (1969) and Oates (1972). This group of studies is also known as the first generation of literature on this topic. These four studies represent just theoretical literature on the linkage between fiscal decentralization and economic growth. First empirical studies on this field started at the end of 70s with Kee (1977) and Pommerehne (1978). More empirical studies, that directly examined the impact of fiscal decentralization on economic growth, started after 90s, when decentralization reforms took places in the most of the countries worldwide. This paper will review empirical studies of Oates (1995), Davoodi & Zou (1998), Zhang & Zou (1998), Xie, Zou & Davoodi (1999), Lin & Liu (2000), Zhang & Zou (2001), Akai & Sakata (2002), Thiessen (2003), Iimi (2005),Thornton (2007), Cantarero & Perez Gonzales (2009), Gemmell, Kneller & Sanz (2013), Yushkov (2015), Szarowska (2015), Yang (2016) & Slavinskaite (2017). These studies are chosen because some of them represent cross countries analysis, analysis on OECD countries, EU countries, developed countries and developing countries. On these studies are applied empirical methodologies which present concrete findings.

FIRST GENERATION OF LITERATURE THAT LINK FISCAL DECENTRALIZATION WITH ECONOMIC GROWTH

As was mentioned above Tiebout (1956), Musgrave (1959), Olson (1969) and Oates (1972), represent the first generation of literature that link fiscal decentralization with economic growth. Martinez-Vazquez, Lago-Penas & Sacchi (2015), mentioned that authors Tiebout, Musgrave and Olson and Oates on their studies showed that the goals for a greater public sector efficiency attributed to devolution of tax and they illustrated how the literature made the economic case for decentralization.

If we take a look to the study of Tiebout (1956), we can see that this study was focused on the process through which fiscal decentralization may lead to greater overall economic efficiency. Tiebout's approach separates communities by income, assuming a positive income elasticity of the demands for local public services, so the community with the higher per capita income will offer a higher level of public output per capita (Thiessen, 2000). Furthermore according to this approach, local governments are more capable than national governments to offer public goods and services for citizens due to informational advantages. Tiebout (1956), assumed that public officials respond to the desires of their constituents and so local governments are in better position to match different preferences across different authorities. According to Tiebout (1956), achievements in efficiency are enhanced if taxpayers are mobile because they can move among the authorities that best match their preferred tax-expenditure package. From these views we can say that the reason why different local governments offer different mixes of tax-expenditures is because they need to accomplish the needs of citizens. Tiebout (1956), analysed fiscal decentralization in terms of competition among localities, with the mobility of citizens between localities providing the mechanism for preference revelation (Vo, 2010). Furthermore Vo (2010), when discussed Tiebout's approach stated that the essence is that consumer demand for local public goods can be revealed when citizens choose the jurisdiction which provides them with the best net benefit. At the end of this part we can say that Tiebout's study about fiscal decentralization and economic growth is a very important part of each study in this field, because is one of the first studies that figured out the linkage of economic growth and fiscal decentralization. Tiebout through his theory saw a positive impact of fiscal decentralization in economic growth because as he argued fiscal decentralization promotes higher efficiency and better public service which promotes economic growth too.

Musgrave (1959), concluded that there is a positive impact of fiscal decentralization in economic growth too. On his book The Theory of Public Finance – A study on Public Economy, he categorized Public Finance on three dimensions: macroeconomic stability, income distribution and resources allocation (efficiency). According to Vo (2010), this categorization represents the standards from which issues in public economics are treated by the non-public choice group within their first generation studies of fiscal decentralization. Furthermore Vo (2010), explained that in the specific public finance perspective on federalism, the public finance dimensions of Musgrave proved useful in setting the constraints to fiscal decentralization (stabilization and distribution) and the potential benefits of fiscal decentralization (allocation).

According to Musgrave (1959), macroeconomic stabilization as a first dimension of public finance copes with problems of macroeconomic stability and it copes with fiscal and monetary policies which may contribute to a stable economic development. Vo (2010), pointed out that the key issue of macroeconomic stabilization is whether fiscal decentralization enhances or detracts from economic stability and compromises the general macroeconomic goals of governments.

When Musgrave (1959), explained income distribution, he mentioned that this public finance dimension makes sure that income distribution is fair. When it comes to income distribution, Musgrave (1959), pointed out that governments are a determinant factor which produce goods and modify markets to distribute them. Vo (2010), pointed out that income distribution of Musgrave (1959), precis that decentralization of fiscal arrangements does not tend to systematically advance society's income distribution objectives because economic interdependences between the economies of local authorities act to reduce any diversity in the distribution of goods that would exist across lower level governments.

The responsibility of resources allocation (efficiency) dimension is to correct sources of inefficiency in the economic system (Case, 2008) and the importance of fiscal decentralization emerges in this dimension (Vo, 2010). Musgrave (1959), explained that local authorities are in better position to allocate resources and to maximize benefits from the use of resources in their authorities. To sum up this dimension of public economics, Vo (2010), pointed out that the intention to mobilize resources regionally is recognized so that the preferences and heterogeneous inhabitants can be better served.

From the view of Musgrave (1959), we can conclude that the government should be responsible for macroeconomic stabilization and income redistribution and in the other hand, local authorities, which are closer to citizens and are able to have more information on their needs, should ensure the efficiency of public goods provision within their authority.

Olson (1969), on his paper The Principle of Fiscal Equivalence – The Division of Responsibilities among Different levels of Government explained the importance of fiscal decentralization in a country. He took examples in the different industries to show the benefits from a decentralised system. When Olson (1969), explained fiscal decentralization, he defined fiscal equivalence as a need for a unique governmental institution for every collective good with a unique border, so that there can be a match between those who take advantages of a collective good and those who pay for it. This definition shows the positive efficiency goal of public economics with aligning the costs and benefits of impure public good provision with multi-tiered federal systems (Vo, 2010). Once again, to sum up the study of Olson (1969), we can say that through Fiscal Equivalence Olson (1969), saw a positive impact of fiscal decentralization on economic growth.

Oates (1972), same as Tiebout (1956), mentioned that the basic argument for fiscal decentralization is that it promotes economic development and it improves the efficiency of public sector. According to Vo (2010), the fiscal decentralization theorem of Oates (1972) is very clear and rationale. This theorem defines that welfare of citizens is maximized when specific public goods are provided by local governments whose authority corresponds to the subset of the national population for which the demand for specific public goods and services is homogeneous (Vo, 2010). Furthermore Vo (2010), explained that if the national government is assumed to provide the same bundle of public goods and services across all local authorities, then it will not be possible for the government to provide the efficient level unless preferences are homogeneous for all members of the population. This theorem was criticised from Brennan & Buchanan (1980), because as they argued government is not able to know different preferences of citizens. Despite this criticism, the study of Oates (1972), is very important in the literature of fiscal decentralization because represents a study, which from theoretical approach concluded that fiscal decentralization benefits when a match exists between revenue discretion and spending assignments in local authorities.

Tiebout (1956), Musgrave (1959), Olson (1969), and Oates (1972), represent a crucial part in the literature of fiscal decentralization. These studies represent a starting point for each study in this field. As Martinez-Vazquez, Lago-Penas & Sacchi (2015), pointed out, this first-generation literature (Tiebout, 1956;

Musgrave, 1959; Olson, 1969; and Oates, 1972), has been characterized as normative and this generation may also be described as making the economic case for fiscal federalism because it has inspired numerous decentralization reform projects around the world.

EMPIRICAL STUDIES THAT LINK FISCAL DECENTRALIZATION WITH ECONOMIC GROWTH

This part of the paper will review chosen empirical methodology, highlight and explain differences and compare findings of empirical studies that link fiscal decentralization with economic growth.

Since 1972, Oates showed a huge interest to study the impact of fiscal decentralization on economic growth. He came with new studies in 1985, 1991, 1993 (all these studies have on focus decentralization) and finally in 1995 he came with an empirical study that had directly examined the impact of fiscal decentralization on economic growth. Breuss & Eller (2004), pointed out that Oates (1995), is a cross country analysis with a focus on 40 countries from the years 1974-1989. The dependent variable used on this study was average growth rate and explanatory variable used was share of local authorities' expenditures in government net expenditures of intergovernmental transfers. As a measure used for the independence of local authorities is share of own revenues of lower levels in their total revenues (Breuss & Eller, 2004). Data used on this study were retrieved from World Development Indicators of World Bank and International Financial Statistics & Government Financial Statistics of International Monetary Fund. Oates (1995) concluded that there is a positive link between fiscal decentralization and economic growth.

Davoodi & Zou (1998) used a panel of 46 developed and developing countries for the period of time 1970-1989 to examine the link between fiscal decentralization and economic growth. Developed countries on their study are on average more decentralized than developing countries (33% vs. 20%) and tend to have a higher per capita GDP growth rate (2% vs. 1.6%). They follow Barro (1990) model and assumed that there are three levels of government: federal, state and local. Davoodi & Zou (1998), also used Cobb-Douglas production function with public spending on three levels of government mentioned above. They used equation of growth regression based on average of five and ten year periods to estimate a cross country data using the ordinary least square technique. Similar to Oates (1995), as a depended variable Davoodi & Zou (1998) used average growth rate, in this case over periods of five and ten years and as explanatory variable they used share of local authorities' expenditures in government net expenditures of intergovernmental transfers. The average growth rate used on study is the average growth of real per capita output over five and ten year periods. Real per capita output is the real GDP at 1985 international prices which was imported from the Summers Heston data set version 5.6a. The tax rate used on study is the ratio of total tax revenues to GDP, both in nominal terms and in local currency and these variables were taken from the

Government Financial Statistics of International Monetary Fund and the World Bank Economic and Social Data BESD. According to Davoodi & Zou (1998), the measure of fiscal decentralization is the local authority share of total government spending. Davoodi & Zou (1998), found a negative relationship between fiscal decentralization and economic growth for developing countries and they found none relationship for developed countries. When the whole sample was tested, negative effect was more significant on this relationship between fiscal decentralization and economic growth. Davoodi & Zou (1998) explained that the negative impact is caused because decentralization measure on their study does not provide information about local authorities spending. There is not a separate line between current spending and capital spending. Furthermore Davoodi & Zou (1998), explained that negative impact can result from the wrong revenue assignment among various level of government. Two other reasons that they mentioned are that revenue collection and expenditure decisions by local authorities may still be constrained by the central government and in practice local authorities may not be responsive to local citizens' preferences and needs. At the end Davoodi & Zou (1998), mentioned a limitation on their study which is that the measure of fiscal decentralization, which is the local authority share of total government expenditure, may not reflect the local authorities' autonomy in expenditure decision making.

Zhang & Zou (1998), presented a study that measured the impact of fiscal decentralization in economic growth in 28 provinces of China, for the period 1980-1992. They followed Barro (1990), Levine & Renelt (1992), Davoodi, Xie & Zou (1995), Devarajan, Swaroop & Zou (1996) and Davoodi & Zou (1998) to capture the effect of fiscal decentralization on economic growth. The depended variable used on the study is the provincial income growth rate in real terms and explanatory variables are presented on four categories: production inputs, measures of fiscal decentralization of spending, measures of the composition of central and provincial budgetary expenditures and other variables such as tax rate and inflation rate. Data are imported from Chinese statistics. Empirical methodologies used on this study are general least squares and least squares dummy variables. Zhang & Zou (1998), concluded that in China exists a significant and robust negative relationship between fiscal decentralization and economic growth. They explained that this negative relationship may be caused due to the fact that China is too decentralized and the central government is faced with lack of resources for key public investments such as highways, railways and energy. This study makes us understand that a country cannot be too decentralized. Key infrastructure investments should be centralized in order to see their positive impact on economic growth. Same authors in 2001 published another study from the same field. They measured the impact of fiscal decentralization in China again and in India. Zhang & Zou (2001), found again that in China fiscal decentralization has a negative impact in economic growth and in the other hand they found that fiscal decentralization has a positive impact in India. As on their study of the year 1998 Zhang & Zou (2001), pointed out that a too decentralized system in China has negative effects on their economy. In the case of India they mentioned that fiscal decentralization has a positive impact in economic growth because the state allocation of public spending in various sectors is broadly consistent with growth maximization.

Xie, Zou & Davoodi (1999) examined the role of fiscal decentralization in economic growth in the U.S. economy for the years 1948-1994. They measured fiscal decentralization in three levels of government, federal, state and local. Xie, Zou & Davoodi (1999) followed Barro (1990), Devarajan, Swaroop & Zou (1996) and Davoodi & Zou (1998) where the endogenous growth model consisted a production function with two inputs: private capital and public spending. Variables used on this study are similar to Davoodi & Zou (1998). Data are imported from annual historical time series of U.S. economy. The empirical methodology used was ordinary least square technique. Results showed that in U.S. the existing spending shares for local and state authorities are consistent with growth maximization. Xie, Zou & Davoodi (1999), also pointed out that if efficiency gains and growth are the main objectives for further fiscal decentralization in the U.S. their results of empirical study suggest that this move may be harmful for growth.

After the study of Zhang & Zou (1998) about the impact of fiscal decentralization in economic growth in China, Lin & Liu (2000), examined the same phenomenon again in China, but they came up with different results. Lin & Liu (2000), examined the provinces of China for the period from 1970-1993 using a production function based regression analysis framework of Mankiw, Romer & Weil (1992). They pointed out that findings of Zhang & Zhou (1998) should interpret with caution because they used a problematic measure of decentralization and failed to take into account other concurrent reforms. Lin & Liu (2000), on their study included separate proxies for major reforms in the empirical investigation and they measured the degree of fiscal decentralization by a marginal retention rate. The study of Lin & Liu (2000), found that in China the fiscal decentralization has a significant positive impact in economic growth mainly by improving the efficiency of resource allocation rather by including more investments.

Akai & Sakata (2002), as a starting point for their study used studies from Davoodi & Zou (1998), Zhang & Zou (1998) & Xie, Zou & Davoodi (1999). They criticised findings of these studies, because as they mentioned methods used by these studies to examine the effect of fiscal decentralization may be inappropriate and this issue reveals problems related to the data chosen for these empirical studies. Akai & Sakata (2002), pointed out that Zhang & Zou (1998) & Xie, Zou & Davoodi (1999) used data that cover a period with high economic growth in China and in U.S. and from the data sets used on these studies, a negative relationship is to be expected. Furthermore Akai & Sakata (2002), mentioned that Davoodi & Zou (1998), on their cross country analysis did not take in consideration cultural, historical and institutional differences. These dimensions as was mentioned by Akai & Sakata (2002), are crucial dimensions in fiscal decentralization. Akai & Sakata (2002), came up with a study that has on focus United States and they have used similar techniques to those used in studies of Davoodi & Zou (1998), Zhang & Zou (1998) & Xie and Zou & Davoodi (1999), to examine the effect of fiscal decentralization on economic growth, but different from those studies Akai & Sakata (2002), used “a more appropriate data set”. First they built a quantitative measure of fiscal decentralization. They presented four different types of indicators for fiscal decentralization which include: revenue indicator, production indicator, autonomy indicator and production-revenue indicator. According to Akai & Sakata (2002), revenue indicator represents the ratio of local government revenue to combined state and local government revenue, production indicator represents the ratio of local government expenditure to combined state and local government expenditure, autonomy indicator represents the degree of fiscal independence of a local government in a state and production-revenue indicator represents a decentralization measure that incorporates both revenue and expenditure shares. These four indicators were used in regression as alternate independent variables. As explanatory variables were used Population growth rate over the 1988–1992, average annual growth rate of per capita GSP over the 1988–1992, education level and labour quality, measured by the level of human capital, Liberal vs. Conservative tendencies, the effect of income distribution, quality of regional human capital, economic structure and regional-specific effect. After tests done, Akai & Sakata (2002), found that fiscal decentralization has a positive impact on economic growth. They attribute this result to data used in the regression which differ from the studies of Davoodi & Zou (1998), Zhang & Zou (1998) and Xie and Zou & Davoodi (1999). Akai & Sakata (2002), pointed out that to investigate the contribution of fiscal decentralization more thoroughly, it is necessary to construct accurate decentralization indicators that reflect the political and institutional processes. From the study of Akai & Sakata (2002), we can conclude that the way how fiscal decentralization is measured, shows the impact of fiscal decentralization on economic growth.

Thiessen (2003), came up with a study that investigated the impact of fiscal decentralization in economic growth from the perspective of high income OECD countries. He followed the framework of Mankiw, Romer & Weil (1992) and used the methodologies of ordinary least square and regressions of cross sectional growth based on averages of annual data. Thiessen (2003), found that two major determinants of fiscal decentralization, the total investment share in GDP and total factor productivity growth, suggest that there are indeed limits for economic gains from fiscal decentralisation. Thiessen’s tests started at a relatively low level of fiscal decentralisation and increasing it to a medium level, the total investment ratio and per-worker economic growth tend to be promoted. Thiessen (2003) argued that evidence supports the view that the relationship of fiscal decentralization and economic growth is positive when fiscal decentralisation is increasing from low levels, but then reaches a peak and turns negative. From this study can be concluded that both extreme decentralisation and extreme centralisation are associated with disadvantages for economic growth.

Iimi (2005), followed Davoodi & Zou (1998), to investigate the relationship between fiscal decentralization and economic growth in 51 countries for the period 1997-2001. This cross country analysis used ordinary least squares and instrumental variables techniques. The list of countries which were analysed includes 7 low income countries, 10 lower-middle income countries, 12 upper-middle countries and 22 high income countries. Iimi (2005), followed an empirical model that incorporates income group and region specific fixed effects thus to take in consideration the cultural and institutional differences among countries, mentioned as a problem in cross countries analysis by Akai & Sakata (2002). Iimi (2005), found that there is a significant positive relationship between per capita growth rate and fiscal decentralization measured by the local share of the expenditure to total government expenditure.

Thornton (2007), followed the study of OECD (1999), which measured the degree of revenue autonomy of local authorities in 19 OECD member countries in 1995 by calculating the amount of their revenue stemming from the tax rates and the tax base over which they had full discretion. The countries included in the study were Austria, Belgium, Czech Republic, Denmark, Finland, Germany, Hungary, Iceland, Japan, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. OECD (1999), used a classification of local tax revenues ranging from (a) to (e). According to OECD (1999), (a), represents the local authority which can set both the tax rate and the tax base, and (e) represents the local authority which can set both the base and the tax rate. OECD study divided tax sharing schemes into four categories from (d.1) to (d.4) (Thornton, 2007). According to Thornton (2007) the (d.1) category shows the case where the local authority can determine the revenue split and (d.4) category shows the case where the government can decide the revenue split. OECD (1999) found that just in 4 out of the 19 countries, local authorities had full discretion over own revenues, nine countries had discretion over less than two thirds of their revenues, and five countries had discretion less than 15 percent of own tax revenues. According to these findings Thornton (2007), investigated the link between economic growth and fiscal decentralization. Thornton (2007), used as a dependent variable average real GDP growth per capita for each country and the independent variables used were the average tax revenues of local authorities stemming from the tax base and tax rates over which they have full discretion, own source revenue and quadratic indicator of own source revenue. Ordinary least square was the methodology used by Thornton (2007). Those chosen data, make us understand that Thornton (2007) took in consideration independent taxing powers available to local authorities. Thornton (2007), pointed out that independent taxing powers available to local authorities have substantially overstated the degree of effective decentralization. Thornton (2007) found that when the measure of fiscal decentralization is limited to the revenues over which local authorities have full autonomy, its impact in economic growth is not statistically significant.

Cantarero & Perez Gonzales (2009), studied fiscal decentralization and economic growth from the perspective of Spanish regions. They followed Davoodi & Zou (1998), to analyse the effect of expenditure decentralization on regional growth. The null hypothesis of the study was that regional decentralization benefits growth. As a dependent variable used for the study was the per capita GDP at market prices growth rate in each region and as explanatory variables used on the study were investment in physical capital, human capital, population growth and the initial per capita GDP. Results showed that tests made by Cantarero & Perez Gonzales (2009), rejected the null hypothesis of a significant relationship between growth in per capita GDP and expenditure distribution among fiscal administrations. Nonetheless, Cantarero & Perez Gonzales (2009), find empirical support for a relationship between revenue decentralization, far less advanced than the expenditure one, and growth. In both cases Cantarero & Perez Gonzales (2009), rejects the null hypothesis of a nonlinear linkage between fiscal decentralization and growth in per capita GDP.

Gemmell, Kneller & Sanz (2013), examined whether fiscal decentralization generates higher economic growth in more decentralized economies. They applied pooled mean group regression techniques to a panel dataset of 23 OECD countries, for the period 1972–2005. Econometric analysis of Gemmell, Kneller & Sanz (2013), followed the approach of Davoodi & Zou (1998) and Xie, Zou, & Davoodi (1999) who consider a production function with two inputs: private capital and public spending. The data used in their econometric analysis was based on various editions of OECD General Government Accounts and authors used annual Government Finance Statistics data of International Monetary Fund (2001). Gemmell, Kneller & Sanz (2013), found that spending decentralization has tended to be associated with lower economic growth while revenue decentralization has been associated with higher growth. They also pointed out that since OECD countries are substantially more spending than revenue decentralized, their study consistent with Oates' (1972) hypothesis that maximum efficiency gains require a close match between spending and revenue decentralization.

Yushkov (2015), brought Russian experience in the relationship between fiscal decentralization and economic growth. He used data from 78 Russian regions over the period 2005-2012. Data used on this study were retrieved from the Russian Federal State Statistics Service (Rosstat), the Ministry of Finance of the Russian Federation and the Federal Treasury of the Russian Federation. Yushkov (2015), followed Davoodi & Zou (1998), but with some improvements made. He used the growth rate of the gross regional product per capita as dependent variable and as explanatory variables used were intraregional revenue decentralization, intraregional expenditure decentralization, dependence of a region on intergovernmental transfers from the federal budget and the municipal autonomy indicator. Yushkov (2015), used a model with fixed effects and time dummies to measure the role of fiscal decentralization on economic growth. He found that in Russian regions, government expenditures are excessively decentralized, which causes a negative relationship between expenditure decentralization and regional economic growth. His results showed that regional dependence on central authorities is positively linked with economic growth.

Szarowska (2015), with her study aimed to test and quantify impact of fiscal decentralisation in economic growth in the European Union over the period 1995-2012. The empirical evidence is presented on a panel which contains 21 EU countries (Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and United Kingdom). Author mentioned that this sample selection is limited by a membership of countries in OECD and the availability of data. The analysis used data taken from OECD Fiscal Decentralisation Database and OECD. Szarowska (2015), to test the relationship between fiscal decentralization and economic growth in the empirical analysis has used following indicators: expenditure decentralisation, revenue decentralisation and tax revenue decentralisation. The empirical tests were made with Dynamic Panel Data Model Wizard. Szarowska (2015), found that in her sample of countries there is a positive impact of expenditure decentralisation, negative effect of revenue decentralisation and negative but statistically insignificant impact of tax decentralisation on economic development.

Yang (2016), came up with a study about the impact of fiscal decentralization associated with tax reform in economic growth in 29 provinces of China. Yang (2016), analysed the period 1990-2012 and used fixed effect method. For the purpose of the analysis, Yang (2016), classified the aggregate economy in China into three main industry sectors primary, secondary, and tertiary industries. The author mentioned that the growth of economic activity (measured by real GDP) in each main sector is estimated as a function of variables of interest and control variables. Yang (2016), found that the effects of revenue and expenditure decentralization in economic growth is positive but vary across the three main sectors, with the largest impact on the secondary sector.

Slavinskaite (2017), analysed the fiscal decentralization impact in economic growth in unitary countries of European Union for the period 2005–2014. In the paper was not included Luxemburg and Malta. Author pointed out that Luxemburg was not included because of its higher economic growth in comparison with other EU countries and Malta was not included because its decentralization is too low. Empirical analyse used on this study was based on the multiple regression-fixed effect model. Two hypotheses were tested on the study of Slavinskaite (2017). First hypothesis was fiscal decentralization effects economic growth and second hypothesis was fiscal decentralization has a different effect on the countries' economic growth depending on the level of economic development. Slavinskaite (2017), according to her tests found there is positive link between fiscal decentralization and economic growth in low level of economically developing countries and no relationship in high level of economically developed countries.

This part of the paper reviewed some studies about the impact of fiscal decentralization on economic growth. Through the years a lot of studies have been published which tried to have on focus this linkage. On this part of the paper, were shown different dimensions and different approaches of different authors who in some cases for the same countries have found different results. As was mentioned in the whole paper, empirical studies about the impact of fiscal decentralization in economic growth all the time have provided mix results. As was concluded by almost all authors in their sections of literature review, mix results about the impact of fiscal decentralization in economic growth are caused because this relationship is depended from different dimensions:

- Number of countries analysed – which panel of countries is analysed, is a cross country analyse or an analyse of a specific region
- Period of time analysed – it is very important which period of time is analysed, what politics and reforms were followed from countries during the time of analysis
- Data used – panel data set from different countries
- Scale of decentralization – it is important to know are too decentralized or too centralised the countries which are analysed.
- Methods used for empirical models and measure of fiscal decentralization – which variables are used, data used and which indicators are taken in account.

As Yushkov (2015), pointed out that "the multidimensional nature of decentralization should be considered, and the major determinants of economic growth should necessarily be included in the econometric model", it is the multidimensional face of fiscal decentralization that has provided all the time mix results. An important element about the linkage of fiscal decentralization and economic growth that was also mentioned from Martinez-Vazquez & McNab (2001) and Breuss & Eller (2004) is the scale of decentralization. In the literature that was reviewed in this paper, scale of decentralization was studied as an important dimension that has a crucial impact in the link between fiscal decentralization and economic growth. Every study in this field had a focus in this part and the scale of decentralization plays and important role about the impact of fiscal decentralization in economic growth. At the end of this part we can say that every country is unique in the way it is organized and this is the reason why measuring the impact of fiscal decentralization in economic growth is problematic.

CONCLUSION

This paper followed the studies of Martinez-Vazquez & McNab (2001) and Breuss & Eller (2004) and aimed to offer a better view about the linkage of fiscal decentralization in economic growth. This paper reviewed, analysed and compared findings of studies with a focus on this linkage and highlighted and explained differences on the dimensions studied from the authors about this phenomenon. Studies chosen for review represent cross countries analysis, analysis on OECD countries, EU countries, developed countries and developing countries over the different periods of time. On these studies are applied empirical methodologies which present concrete findings. This study discussed papers both from the theoretical aspect and empirical aspect. From the papers reviewed we can mention the fact that fiscal decentralization is a complicated phenomenon with a lot of dimensions (Davoodi & Zou, 1998), and this is the reason why there are different results on empirical studies about its impact in economic growth. This study similar to other studies in this field pointed out an important element about the impact of fiscal decentralization in economic growth which is scale of decentralization. Studies on this field take in account this dimension and further studies should focus to study in the broader way the effect of scale of fiscal decentralization in economic growth. In the end we can say that every country is unique in the way it is organized and this is the reason why measuring the impact of fiscal decentralization in economic growth is problematic.

Table 1. *Fiscal Decentralization and Economic Growth – Review of Papers*

Authors & Year	Sample/Region	Time	Method	Results
Tiebout (1956)	N/A	N/A	Theoretical Approach	Fiscal Decentralization has a positive impact in economic growth.
Musgrave (1959)	N/A	N/A	Theoretical Approach	Fiscal Decentralization has a positive impact in economic growth.
Olson (1969)	N/A	N/A	Theoretical Approach	Fiscal Decentralization has a positive impact in economic growth.
Oates (1972)	N/A	N/A	Theoretical Approach	Fiscal Decentralization has a positive impact in economic growth.
Oates (1995)	40 countries	1974-1989	N/A	Fiscal Decentralization has a positive impact in economic growth.
Davoodi & Zou (1998)	46 developed and developing countries	1970-1989	Equation of growth regression based on average of five and ten year periods to estimate a cross country data using the ordinary least square technique.	Negative relationship between fiscal decentralization and economic growth for developing countries and they found none relationship for developed countries.

Zhang & Zou (1998)	28 provinces of China	1980-1992	General least squares and least squares dummy variables.	In China exists a significant and robust negative relationship between fiscal decentralization and economic growth
Xie, Zou & Davoodi (1999)	U.S.A	1948-1994	Ordinary least square technique.	In U.S.A. the existing spending shares for local and state authorities are consistent with growth maximization. If efficiency gains and growth are the main objectives for further fiscal decentralization in the U.S.A. results suggest that this move may be harmful for growth.
Lin & Liu (2000)	China	1970-1993	Regression analysis framework of Mankiw, Romer & Weil (1992).	The fiscal decentralization has a significant positive impact in economic growth.
Zhang & Zou (2001)	China & India	1987-1994 1970-1994	Cross province estimations. Cross-state estimations.	In China fiscal decentralization has negative impact in economic growth and in the other hand they found that fiscal decentralization has a positive impact in India.

Akai & Sakata (2002)	U.S.A	1992-1996	Panel regression model using ordinary least square technique.	Fiscal decentralization has a positive impact on economic growth.
Thiessen (2003)	High income OECD countries	1973-1998	Ordinary least square and regressions of cross sectional growth based on averages of annual data.	The relationship of fiscal decentralization and economic growth is positive when fiscal decentralization is increasing from low levels, but then reaches a peak and turns negative.
Iimi (2005)	51 countries	1997-2001	Ordinary least square and Instrumental variables.	Significant positive relationship between per capita growth rate and fiscal decentralization measured by the local share of the expenditure to total government expenditure.
Thornton (2007)	19 OECD countries	1980-2000	Ordinary least square and Instrumental variables.	When the measure of fiscal decentralization is limited to the revenues over which local authorities have full autonomy, its impact in economic growth is not statistically significant.

Cantarero & Perez Gonzales (2009)	Spanish Regions	N/A	Equation of growth regression to estimate data using the ordinary least square technique	The null hypothesis of a nonlinear linkage between fiscal decentralization and growth in per capita GDP is rejected
Gemmell, Kneller & Sanz (2013	23 OECD countries	1972-2005	Pooled mean group regression technique.	Spending decentralization has tended to be associated with lower economic growth while revenue decentralization has been associated with higher growth.
Yushkov (2015)	78 Russian Regions	2005-2012	Fixed effects and time dummies.	In Russian regions, government expenditures are excessively decentralized, which causes a negative relationship between expenditure decentralization and regional economic growth.
Szarowska (2015)	21 EU Countries	1995-2012	Dynamic Panel Data Model Wizard	A positive impact of expenditure decentralization, negative effect of revenue decentralization and negative but statistically insignificant impact of tax decentralization on economic development.

Yang (2016)	29 Provinces of China	1990-2012	Fixed effect method.	Effects of revenue and expenditure decentralization in economic growth are positive.
Slavinskaite (2017)	EU Countries – Luxemburg & Malta	2005-2014	Regression-fixed effect model	Positive link between fiscal decentralization and economic growth in low level of economically developing countries and no relationship in high level of economically developed countries

Source: Compiled by author

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