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Fiscal Decentralization and Inequality: An Analysis on Romanian Regions

*Anca Florentina GAVRILUŢĂ (VATAMANU) – Mihaela ONOFREI – Elena CIGU**

Abstract

Efforts to decentralize financially democratically elected local governments is a common theme across Europe because the particularities of each country determine a certain type of fiscal decentralization based on multiple criteria, including fiscal capacity. Over the last 20 years, some Western European countries have succeeded in establishing a form of balanced central government decision and fiscal decentralization that can help to reduce disparities between their own regions. Furthermore, European policies are geared towards reducing disparities both between countries and within the country, especially in the countries of Central and Eastern Europe, which face major disparities, as is the case of Romania. In this paper, we analyse regional-level fiscal disparities in Romania with fiscal and economic data over the period 2004 – 2015, by using Gini index to measure the dispersion of local fiscal capacity and a panel data approach to determine the extent to which decentralization involves inequality and the impact of fiscal decentralization on income inequality. The results of the analyses show that fiscal policy does very little to reduce inequality and poverty overall, finding a certain inequality in the distribution of revenues and an alarm signal regarding the "healing" nature of transfers from the state budget.

Keywords: *fiscal decentralization, regional inequality, intergovernmental transfers*

JEL Classification: D63, H10, H70, H71

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Introduction and Motivation

The international economic literature perspective reveal that fiscal capacity involves the financing capability of subnational governments, rather than the economic well-being of people. Nevertheless, the two are interrelated, because local governments depend mainly for their financing upon own taxes and other revenue sources that tap the income, transactions, or property holdings of people. In the context of recent public reforms with accent on decentralization process, there is a major focalization on local fiscal capacity of subnational governments, local fiscal disparities and on the effect of fiscal decentralization on regional inequality. Low local fiscal capacity is typically a consequence both of underdeveloped political, social and economic conditions in a state, and a wrong fiscal decentralization process. In addition, the well-being of people reflected in income distribution is one of the most important and actual topics debated by economists, heads of states, macroeconomic policy makers and researchers from all over the world. Undoubtedly, all individuals are affected by discrepancies recorded in income distribution to a lesser or a greater extent. The increase of discrepancies over recent years is not only due to new technologies and globalization, but also reflects the policies adopted on the labour, stock markets and fiscality. Thus, the general opinion is that inequalities within regions of the countries are just as important (if not more important) than inequalities between countries, and for this reason the local fiscal capacity must be improved, local fiscal disparities must be reduced and the relationship between inequality and decentralization must be correctly identified or defined.

At European level and, more narrowly, at the level of the European Union, there are discrepancies between states and within states, although harmonization efforts have been intensified in recent years. In this sense, a major contribution at European level is intended to have the 2020 Strategy itself. In the case of Romania, according to statistics, it is one of the most unequal state of the European Union and this inequality have been driven by a complex of historical, economic, cultural and social factors.

By making a brief retrospective of the legal and institutional framework, in 1998 the first act was adopted detailing the local taxation system, guiding the local budgetary process and setting the powers of the decision-making bodies at the local level, Law 189/1998 on local public finance, and in 2003 it entered the first Fiscal Code of Romania and Emergency Ordinance 45/2003 on local public finances declares the rates deducted from the income tax as own revenues to the local budget, together with the taxes and contributions. Law 315/2004 on regional development in Romania has set new directions for the real modernization of the economy and society, establishing also the eight development regions in

Romania, proposed by the Green Charter. Subsequently, in 2015, in the light of the tax reform that relied on the elimination of the globalization of revenues by replacing the progressive taxation system with the single rate taxation, there were new changes in the Romanian administration. In the present case, the empirical evidence showed that although the reform at that time contributed to the achievement of the adherence to the reduction of bureaucracy, the elimination of the globalization of the income subsided in the increase of corruption and tax evasion (Mitrică, 2006; Dinu and Socol, 2006). A package of laws on financial and administrative decentralization was adopted in 2006, thus also preparing the Romania's accession to the EU. Territorial administrative reform, together with its essential instrument, fiscal decentralization has become widely accepted by civil society in Romania, academia and public authorities. However, overcoming regional gaps is one of the main European policies and Romania could now become a target for this specific European economy.

Considering the existing literature on this region, it is difficult to offer a wellorganized and comprehensive view on the matter. However, the paper point the implication of fiscal reforms that came with a remarkable decline in intergovernmental transfers and highlight the factors that accentuate the poverty level of this country. In addition, based on the new fiscal philosophy, which require an increase of fiscal decentralization, it is revealed that there are growing concerns regarding the way to improve local fiscal capacity of subnational governmens, and to solve the incomes and fiscal disparities. The purpose of this study is to analyse local fiscal disparities, in terms of fiscal capacity by per capita local revenue (or expenditure) and to analyse the policy intentions, considering the reforms implemented in this country and the tremendous changes in its political and legal framework over the 2004 – 2015 period. To the best of our knowledge, local fiscal disparities were investigated mainly from the perspective of fiscal decentralization in relation to: income inequality and regional development (Tselios et al., 2012; Rodríguez-Pose and Krøijer, 2009), poverty reduction or income inequality (Sepulveda and Martinez-Vazquez, 2011; Sacchi and Salotti, 2011), equity and poverty reduction (Hofman and Guerra, 2007), political institutions (Beramendi, 2003), or political economy (Lockwood, 2005). We use Gini index to measure the dispersion of local fiscal capacity over the period 2004 – 2015, and also the standard decomposition of the Gini index to distinguish the contribution of per capita local revenues and per capita central transfers to the inequality of local expenditure. We approach a model used by Savitri (2012) to determine the impact of fiscal decentralization on income inequality in Romanian regions, taking into account the role of local authorities in the decentralization process.

This paper also contributes to create a comprehensive view on the way in which each of the analyzed Romanian regions suffered disparities over the 2004 – 2015 period under the fiscal decentralization process. Moreover, it explores a potential connection between inequality and fiscal policy in Romanian regions.

The remaining of this paper is structured as follows: section 1 contains a brief literature review; section 2 refers to data and explains methodology; and section 3 presents the empirical results and their interpretations. Our paper ends with concluding remarks, emphasizing policy recommendations that, in our opinion, should be considered for improving local fiscal capacity and reducing local disparities.

1. Theoretical Considerations and Empirical Experience

Literature on the issue of local fiscal capacity and subnational fiscal disparities consider that high fiscal disparities generate quite different levels of public services provided by local government across regions and a lower fiscal capacity determines insufficient provision of public services, such as public education, infrastructure, health care and social security (Wang, 2002; Heng, 2008). Fiscal capacity is defined as the ability of the local government to raise its own revenues that depends immensely on the strength and capabilities of the tax administration itself, as a result of fiscal decentralization process. Subnational fiscal disparities are mainly caused by differences in economic development levels, among other factors such as sizes of tax base, structures of tax sources and their extents of concentration, natural conditions, levels of urbanization, etc. (Wang, 2002; Heng, 2008).

This correlation between local fiscal capacity and local fiscal disparities not only affects the efficiency of the overall economic system, but also results in a series of social problems, such income inequality. However, income inequality is closely related to economic efficiency, more exactly, we can say that it is desirable that the use of resources, which are limited, to be based on criteria of economic efficiency.

This may lead to benefits for some, but also to disadvantages for others. In any society a degree of inequality is not only unavoidable, but it is also necessary for a healthy functioning of the economy (Welch, 1999). However, we cannot lose sight of that, the causes and consequences of income inequality should be considered, analyzed and mitigated, such as poverty, social exclusion, the level of delinquency, life expectancy, health (Salverda, Nolan and Smeeding, 2009), especially since recent research emphasizes that high levels of inequality could be a barrier to economic growth (Kaja Bonesmo, 2012).

Previous research suggests that there are some conditions to meet if fiscal decentralization is to have significant impact on reducing inequality taking into account fiscal capacity, or that there is a limitation to which fiscal decentralization can reduce inequality. Savitri (2012) considers even though inequality is not the goal of fiscal decentralization, the policies set by subnational governments under fiscal decentralization do have relation with income redistribution, which eventually leads to income inequality. We can note also that that some studies (Prud'homme, 1995) point out the possible detrimental effect of fiscal decentralization on regional income inequality, because in its opinion decentralization measures can adversely affect the distribution of equity. Shankar and Shah (2003) find that regional inequality increases with decentralization, particularly in developing countries. Dollar (2007) argued that the fiscal decentralization that gives the provincial and local governments more power and autonomy with respect to public expenditures and revenues might lead to larger income inequality.

The results analysis of Sepulveda and Martinez-Vazquez (2011) who test the relationship between decentralization and inequality, using five-year-averages over the 1971 – 2000 period for a sample of 56 countries, show that fiscal decentralization may have significant effects on poverty and inequality, respectively fiscal decentralization appears: (i) to reduce poverty as long as the share of subnational expenditures is not greater than one third of total government expenditures, and (ii) to help to reduce income inequality only if the general government represents a significant share of the economy (over 20%). The authors also list several channels through which fiscal decentralization might affect income inequality indirectly, such as economic growth, macroeconomic stability, the convergence of regions, government size and the level of institutional development.

There are, nevertheless, several arguments that, in literature, decentralization may in fact decrease regional inequality. Tselios et al. (2012) investigated the relationship between decentralization and inequality from a panel of 102 European Union regions over the 1995 – 2000 period and find that greater fiscal decentralization is associated with lower interpersonal income inequality, but, as regional income rises, further decentralization is connected to a lower decrease in inequality. Torgler (2007) and Güth et al. (2005), notes that revenue decentralization may reduce income inequality by improving tax collection, especially of the self-employed, therefore increasing redistribution. The authors consider if revenues are known to stay in the region, there might be stronger incentives both for citizens to declare their taxable income fully within the region and for local authorities to control and enforce tax laws. Neyapti (2006) considers that revenue decentralization may lead to increased inequality, but coupled with good governance, revenue decentralization could improve income distribution.

Regarding decentralization on the spending side, local policy-makers have an information advantage on local circumstances and may thus be able to better tailor spending policies to reduce income inequality (Sacchi and Salotti, 2014; Le Galès, 2002; Brenner, 2004) if there is a high quality of local institutions, without corruption (Prud'homme, 1995). Moreover, spending decentralization might affect the overall public expenditure composition (González Alegre, 2010; Sepulveda and Martinez-Vazquez, 2011), which in turn can have an effect on income inequality (Stossberg, Bartolini and Blöchliger, 2016). In their study, Goerl and Seiferling (2014) find that the decentralization of government expenditure can help achieve a more equal distribution of income, if several conditions are fulfilled, such as: (i) the government sector needs to be sufficiently large; (ii) decentralization should be comprehensive, including redistributive government spending; (iii) decentralization on the expenditure side should be accompanied by decentralization on the revenue side, such that subnational governments rely primarily on their own revenue sources as opposed to relying on intergovernmental transfers.

Stossberg, Bartolini and Blöchliger (2016) find a weak, inequality-reducing relationship between decentralization and income inequality, as measured by the Gini coefficient, but the effect is rather small and unstable across specifications. Canaleta, Arzoz and Garate. (2004), analyses the impact of both fiscal and political decentralization on regional inequalities using alternative measures for a sample of 17 OECD countries finding a strong negative correlation between decentralization, especially fiscal decentralization, and regional inequalities, and also a positive influence of decentralization on regional convergence. The study of Lessmann (2009) reveals that a high degree of decentralization is connected with low regional disparities, but poor regions have no disadvantages from decentralization, quite the contrary. In 2012, Lessmann examines the impact of decentralization on inequality within regions using a panel of 54 developed and developing countries from 1980 to 2009, and the general findings are that fiscal decentralization increases inequality at low levels of development.

Income inequality is still high in Romania and has remained almost unchanged during the past fifteen years (IMF Country Report, No. 16/114). On the other hand, it is widely argued that in Romania, the efforts since 90's to reform its fiscal policies towards a more decentralized system of taxation and revenue points to the need to primarily focus on improving efficiency and effectiveness, and in the meantime, create fiscal space to address the growing fiscal pressures (Militaru and Stanila, 2015). Undoubtedly, during the process of post-communist transformation, Romania has been through a severe economic decline accompanied by an important rise in poverty and inequality, which can not be eliminated neither in contemporary period by redistribution through the tax-benefit system.

In terms of fiscal decentralization, we find that this concept has gained considerable attention in many countries with its potential to raise the efficiency of government (Oates, 2008; OECD, 2006; 2009a; 2009b). Where state and local governments gain a significant degree of autonomy in the formation of redistributive policies, the question arises whether, and how decentralization might interact with income inequality (Bahl, Martinez-Vazquez and Wallace, 2000).

The review of existing literature on the local fiscal disparities proves this issue is quite poorly exploited, at least for the case of Central and Eastern European countries, Romania in particular. From this point of view, our analysis is an original one and of absolute novelty for Romania, where, as far as we know, there is no previous study evaluating fiscal decentralization (at the level of regions) on income inequality.

2. Methodology and Data

This paper aims to analyze regional-level fiscal disparities in Romania using fiscal and economic data during the period 2004 – 2015, given that a strong fiscal decentralization process has been taking place during these years. However, at the end of 2003, the Romanian Parliament approved the Fiscal Code of Romania that came up to solve some discrepancies between different fiscal regulations and to simplify the tax administration system. An additional important reform was made at the end of 2004 with the introduction of flat income tax (16%) at both corporate and individual level and because the budgetary classification underwent certain changes, we considered appropriate to analyze this period to see if the trend continues over time and what are the implications for strengthening local financial autonomy. The period of time 2010 – 2011 was affected by changes from the point of the consolidation in fiscal policy and sustainability. In that time fiscal consolidation was made through reforms in the field of salaries of budget staff, public pension systems and budget programming. From the revenue side, it was decided to increase the standard rate from 19% to 24%. At the level of 2013, the administrative reform process underwent changes in the legal framework associated with public investment management, which, through GEO 88/2013, sought to prioritize investment projects better, which did not materialize in visible results. Another change comes from the fiscal reform program approved in April month of the same year, with the support of the World Bank, which is to reform the tax collection system to increase revenue collected and reduce administrative costs. All these measures indicate, of course, not only a reorientation towards fiscal consolidation requirements but also problems regarding the process of managing Romanian public finances.

Throughout the paper, the unit of analysis is the eight development regions from Romania, which corresponding to NUTS II level. Acccording to the fundamental law, Constitution of Romania, territory is organized administratively into communes, towns/municipalities and counties, but the legal framework establishes also eight development regions: North-West, Center, North-East, South--East, South-Muntenia, Bucharest-Ilfov, South-West Oltenia, and West. The fiscal data include per capita local expenditures (PCEXP), per capita local revenues (PCREV) and per capita central transfers (PCGRT) received by a region. Local fiscal capacity is measured primarily by PCEXP, which reflects better local service capacity than PCREV. Other variables include population, area, GDP, the share of primary industry in GDP, and dummy variables denoting North, East, Central, or West regions. All the data (2004 – 2015) were collected from Statistical yearbooks of Romania (National Institute of Statistics 2004 – 2015). We also used data from other sources, such as Human Development Reports, IMF, World Bank. The research questions include: 1. *How does the dispersion of PCEXP change over time and what is the situation of local fiscal capacity?* 2. *How does fiscal decentralization impact income inequality.*

To answer the first question, we used Gini index to measure the dispersion of local fiscal capacity over the period 2004 – 2015. We also used the standard decomposition of the Gini index (Fei, Rainis and Kuo, 1978; Shorrocks, 1982) to distinguish the contribution of PCREV and PCGRT to the inequality of local expenditure. In a general approach, an alternative to defining would be to consider Gini's coefficient as half of the absolute difference in the arithmetic mean, which would be its mathematical equivalence (Sen, 1997):

$$G = \frac{\sum_i \sum_j \left| x_i - x_j \right|}{2 \sum_i \sum_j x_i}$$

According to Fei et al. (1978), the Gini index of income can be decomposed by the sources of revenue that make up the total income. Let Y_i^k denote the income of individual *i* (*i* = 1,…, *n*) from source k (*k* = 1,…, *K*), then the Gini index G(Y) can be transformed to: –

$$G(Y) = \sum_k \frac{\mu_k}{\mu} \bar{G}(Y^k)$$

where

μ – the mean of *y*,

μ_k – mean of Y^k,

$\bar{G}(Y^k)$ – pseudo-Gini for factor *k*.

For total income, we used the model developed by Lerman and Yitzhaki (1985), which relate that Gini coefficient for total income, *G*, can be represented as:

$$G(Y) = \sum_{k=1}^{k} S_k G_k R_k$$

S_k – share of source *k* in total income,

G_k – the source Gini,

R_k – Gini correlation of income from *e* source *k* with the distribution of total income.

For a more precise and reliable estimation of parameters and to obtain a viable response to research questions, we also use validated control variables in the literature (Lessmann, 2009; Rodríguez-Pose and Ezcurra, 2009). On the other hand, the level of local revenues shows us not only the self-financing capacity of local authorities, but also their implications for the size of the success of decentralization. Thus, the variable is composed by summing up the revenue categories foreseen as revenues of the local authorities, in accordance with article No. 5 of Law No. 273 of June 29, 2006 on local public finances, which stipulates that the local budget revenues consist of:

a) own revenues, consisting of taxes, fees, contributions, other payments, other income and quotas deducted from the income tax;

b) amounts broken down from some state budget revenues;

c) grants received from the state budget and from other budgets;

d) donations and sponsorships;

e) amounts received from the European Union and/or other donors on account of payments made and pre-financing.

Thus, in our case, relying on the Savitri-based study (2012) and taking into account the aspects highlighted in the local public finance law, the share of local own revenues is the best instrument, because it includes the sums that make up all local incomes taxes, fees, contributions, other payments, other income and allowances deducted from income tax). In order to answear to the second research question, to determine the extent to which decentralization involves inequality and to test on the profile of Romania the impact of fiscal decentrelization on income inequality, taking into account the role of local authorities in the decentralization process, we approach a model used by Savitri (2012) on the profile of local authorities in Indonesia. To provide essential guide in selecting variables, we conduct the whole research taking into account other models that have been used in previous research (Barro, 1999; 2000; Resosudarmo and Vidyattama, 2006; Sepulveda and Martinez-Vazquez, 2011). The model adopts the following form:

$$GINI_{it} = \alpha_0 + \alpha_1 \ PCGRT_{it} + \alpha_2 \left[CONTROL_{it}\right] + \eta_{it} + \mu_{it}$$

where

$GINI_{it}$ – *Gini index* for country (regions) *i* at time *t*,

$PCGRT_{it}$ – the proxy for fiscal decentralization – intergovernmental grants for country *i* at time *t*,

$\left[CONTROL_{it}\right]$ – control variables (POP, INV, LFSRI, EDU, HDI, IHNUTS2).

Due to the fact that the approach tries to focus on the area where subnational governments have discretion in fiscal decentralization scheme, in the formulation of local policies that can impact income redistribution, the model explains that GINI is a function of a constant and proxy variable for a fiscal decentralization approximation, represented by PCGRT per capita. The use of PCGRT is based on Rodríguez-Pose and Ezcurra (2009) point of view, who noted the use of per capita central transfers received by a region as a proxy for fiscal decentralization.

The literature indicates that excessive centralization and absolute autonomy lead to a lack of communication between the local and central level and the itinerary to consolidate good practices in the field must take into account the cooperation with the local authorities in order to ensure the functioning competence groups (Onofrei, 2007). Thus, since central government transfers often act as a tool to reduce the local government's efforts to increase own revenues, we have chosen to include intergovernmental transfers (PCGRT) in the regression analysis, in which case we take into account also the transfer of administrative skills between the center and the periphery that is required to be dependent on fiscal capacity. Of course, the supplementation of local budget revenues can be done through transfers from the state budget, but this demonstrates not a consolidation of the decentralization process but rather a masked centralization, whereby the central bodies decide on the local level, thus creating a dependency by central authorities. Morover, the lack consolidation of fiscal decentralization can be found in the use of central transfers (grants), which is an instrument that can contributes to the general disparities or an instrument that affects administrative capacity. We also involve control variables, individual effect, and error term.

CONTROL variables are common variables used to assess inequality. The control variables consist of population growth rate (POP), which is an important determinant to income inequality. Population growth reduces the relative average income of those demographic groups growing faster, usually the poor, which in turn worsens the distribution of income (Sepulveda and Martinez-Vazquez, 2011). Also, in order to control for the impact of the rule we choose to include in the analysis local fiscal strength index (FSRI) because is a variable which tests local fiscal discipline and indicate the implication of subnational fiscal rules and fiscal autonomy on the budget balances of sub-national sectors. Human development index is used in order to relate the implication of inequality from the point of healthy and standard of living. Investments % GDP (INV) control for the stability in terms of foreign direct investments and is a variable validated in the specialized literature, which demonstrated that decentralised regimes are associated with lower foreign direct investments for institutional reasons; therefore more centralised countries signal more stability and thus attract more foreign direct investments (Kotsogiannis and Schwager, 2005).

Another control variable is human development index (HDI) which summary measure for assessing progress in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living and the last variable (IHNUTS2), was introduced in the analysis using the average of the sums assigned to NUTS 2 categories, precisely because NUTS 2 are basic regions for the application of regional policies and the quality of management and policies undertaken at this level have implications for economic sustainability.

3. Discussion of Findings

To assess the impact of fiscal decentralization on income inequality and to show how does the dispersion of PCEXP change over time the situation of local fiscal capacity, we use data from the statistical yearbooks of Romania (National Institute of Statistics 2004 – 2015) and from other sources, such as Human Development Reports, IMF, World Bank. The analysis is first conducted using Gini indices formula and after, we use OLS to estimate equation, in this case, we respected OLS requires and we verify if the regressors are exogenous without multicollinearity, and that the errors are homoscedastic, serially uncorrelated, and normally distributed.

Transfers to subnational government are frequently designed to play an equalizing role and to reduce differences in fiscal capacity across jurisdictions (OECD, 2009b) but can also reduce their policy autonomy. So, in our case, the result from Table 1, would be interpreted in past literature as an evidence that the central transfers may have an equalization effect during the period. However, the later analysis comes up with a new point of view, pointing out the opposite effect between the status of regional inequalities and intergovernmental transfers in the form of subsidies. Table 1 and Figure 1 show the Gini indices for PCEXP, PCREV and PCGRT from 2004 to 2015.

T a b l e 1

Romanian Gini Index Evolution in the Period 2004 – 2015, Based on Own Revenues and Transfers

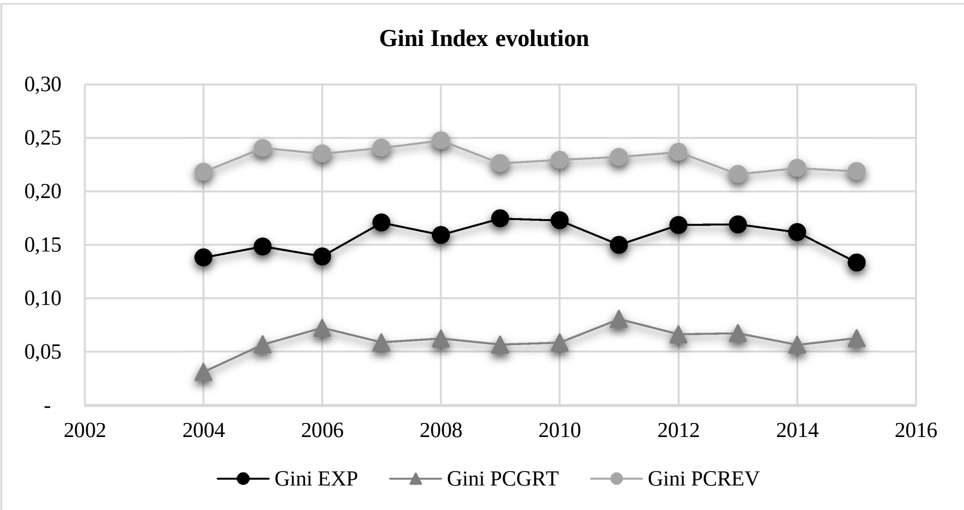
Year		Pseudo-Gini	
	Gini Index	*Gini PCGRT*	*Gini PCREV*
2004	0.15	0.03	0.21
2005	0.19	0.06	0.24
2006	0.19	0.07	0.23
2007	0.18	0.06	0.24
2008	0.19	0.06	0.25
2009	0.17	0.06	0.22
2010	0.17	0.06	0.23
2011	0.17	0.08	0.23
2012	0.18	0.07	0.23
2013	0.16	0.07	0.21
2014	0.17	0.06	0.22
2015	0.17	0.06	0.21

Source: Own calculations using INSSE data.

In Figure 1 it is noticed that the PCREV are significantly more dispersed than per capita local GDPs, an explanation of this phenomenon could be the fact that the local revenue disparities are wider than economic disparities and PCGRT have a direct implication on the dispersions of PCEXP. Appendix 1 relate the income Inequality-Lorenz Curve for Romania 2004 – 2015 for expenditure and indicate the same situation.

F i g u r e 1

Romanian Gini Index Evolution in the Period 2004 – 2015, Based on Own Revenues, Transfers and Expenditures



Source: Own calculations using INSSE data.

In line with this, it is well known that income inequality affects mostly the low-income population and worrying statistic provided by the National Statistics Institute shows that approximately 25% of the population is considered part of the national relative poverty rate. In Romania, in 2014, the poverty threshold was calculated at RON 5,823.

In terms of expenses, the values of the Gini index are supplemented in Appendix 1, in which case the Lorenz Curve reflects the inability of local authorities to act proactively and in relation to legal and institutional requirements. Even though the legal reforms wanted to bring improvements both on the institutional organization chain and on the consolidation of the competences of the administrative bodies, Romania still faces problems regarding the administrative capacity and the quality of the managerial act, which in the public domain, must relies on coordinates of efficiency and effectiveness.

Defined by the value ratio between 0 and 1 and represented as a percentage, Gini's index shows that the lower the coefficient, the smaller the distribution differences. Thus, in order to show the inter-regional disparities, we calculated for 2015 the value of the Gini coefficient for each region of Romania, thus finding that the differences in the distribution of the revenues also belong to each region (Table 2). In this case, the highest value of the Gini coefficient we identify on the profile of some regions like Bucharest-Ilfov, North-West, West and South-East and the lower value in regions like North-East or South-West. Even if few studies have been conducted in relation to income inequality in Romania, across its regions, the availability and lack of units of analysis may be eliminated by the economic explication of our results, most studies highlight the importance of the Bucharest-Ilfov region for example, and its status as the richest region of Romania. Moreover, these results highlighting the implication of demographic forecasts which can make possible that this country be considerably impacted by the population-aging phenomenon-these will most likely affect the country as it will further increase the level of income inequality.

T a b l e 2

Gini Index Values for Romanian Regions, Based on own Revenues 2015

Region	**Gini Index**
North-East	0.09
South-East	0.14
South	0.11
South-West	0.07
West	0.14
North-West	0.15
Centre	0.09
Bucharest-Ilfov	0.19

Source: Own calculations using INSSE data.

In line with the above-mentioned idea, although the analysis performed on the profile of each region had as a sample only year 2015, we chose to calculate the Gini value and based on the grants received from the state budget and from other budgets in order to show how this category of income, which according the to the Law No. 273 of 29 June 2006, can be considered as a part of the local income category affect, contributes to the elimination of inequalities and strengthens the process of decentralization.

T a b l e 3

Gini Index Values for Romanian Regions, Based on Grants and Transfers from the State Budget – 2015

Region	Gini Index
North-East	(0.26)
South-East	(0.09)
South	(0.05)
South-West	(0.05)
West	(0.04)
North-West	(0.06)
Centre	(0.10)
Bucharest-Ilfov	(0.07)

Source: Own calculations using INSSE data.

Table 3 shows an interesting perspective for Gini index values for Romanian regions, based on grants, that the values are negative, because it does not change the situation in the northeast regions of Romania. Even if the coefficient ranges from 0 (or 0%) to 1 (or 100%), with 0 representing perfect equality and 1 representing perfect inequality, we find in literature that values over 1 are theoretically possible due to negative income or wealth and this is deeply discussed by researchers (Zhang and Xian, 2006; Berrebi and Silber, 1985; Lambert and Yitzhaki, 2013). In applied research, we find that the most common approach is based on removing units having negative values from the dataset, trusting that this exclusion will have no substantial impact on the analysis of the attribute (Van de Ven and Creedy, 2005). In our case, we considering that if we do these, we risk to loss relevant information in the study of inequality, this idea being supported by other researchers (Raffinetti, Siletti and Vernizzi, 2015). It is noticed that if some regions do not receive income (grants), their income for that year is equal to zero. If they receive income (grants) and borrow to meet their needs, the net income may be negative (because borrowing more than they earn). More exactly:

$$\text{Variance of } G(x) = \text{variance of } G(x+c)$$

$$\text{var } G(x) = \text{var}(x) + \text{var}(c)$$

$$\text{var of } c(\text{constant}) = o$$

$$\text{var of } G(x) = \text{Var } G(x + c)$$

Furthermore, analysing the INSSE reports, we find that these amounts from the state budget only press on already existing disparities, considering, for example, that Vaslui County, one of the weakest counties in the weakest region of Romania, contributes to the state budget with 100 euros and gets 150 euros. In this case, we can see that the contribution of PCGRANTS to the revenues of local authorities only worsens or sustains the existing inequalities.

The situation of inequality in the distribution of incomes is as clearly presented also in Table 4. Thus, we can observe that 9.94% of the Romanian population accrues 7.03% of the region's total revenue. On the other hand, we can see that most of the revenues are concentrated in the central, northwest, west and south-west regions of Romania, which show clear inequality in the distribution of income. Hence according to the Public Opinion Barometer Survey, the greatest part of the population is thinking that the Romanian society should be an equalitarian one, so, the income inequality in Romania is perceived as very high by most people (Molnar, 2010). From our point of view, the income distribution in Romania is marked by the general low-income level and a relatively low sum in own local revenue, which shows the lack consolidation of fiscal decentralization and the use of central transfers (grants) as an instrument which contributes to the general disparities or an instrument that affects administrative capacity. It can be seen in Table 4 as the Northeast, South-East and South regions, constitute 36.58% of the Romanian population and accrue 28.14% of the total revenues of this country in 2015. While the first six regions accrue 66.26% of Romania's revenues, the Center Region and Bucharest Ilfov accumulate about half of the revenue of the six, respectively, 33.74%. So, even if the redistribution of income has an important contribution in levelling of income distribution, especially by social transfers, corroborating these data with the transfer situation, we could say that that Romania needs a clause for empowering local decision makers and creating sustainable public finances.

Table 4

Distribution of Revenue within the Romanian Region and Gini Index Value in 2015

	Cummulative Pop	Cummulative income	Area	Gini Coefficient
2015	0	0		0.134901
North-East	9.94	7.03	34.9506071	
South-East	19.15	16.77	109.58	
South	36.58	28.14	391.39	
South-West	51.02	40.67	496.88	
West	62.84	53.30	555.62	
North-West	75.63	66.26	764.43	
Centre	88.62	79.86	949.04	
Bucharest-Ilfov	100.00	100.00	1,023.62	

Source: Own calculations using INSSE data.

The same situation we encounter between regions, Table 5, show that Vaslui County represents 11.41% of the population of the North-East region, respectively, accumulating 9.19% of the total revenues of the region, also Vaslui and Botosani represents 23.54% of the North-East region and accumulating 18.54% of the region's total revenues. It is obvious that the current and the potential economic and social problems are different from one region to another, which requires a targeted approach, adapted to the needs in each region, especially targeting the sectors that have a higher potential of growth, but also, we realized that we have the same situation inside of regions. Regional development policy cannot be successful in a depressing economic environment nation, with repressed markets and negative growth, in such a context, there can be no more "developed" regions, but only relative welfare, and only through compared to poor standards. A strong, dedicated economic policy can remove in the short term, territorial economic disparities leading to artificial, political privileges and not only, but disadvantaging the private sector and the public sector alike. This leads to the development of parallel underground economy, impeding the growth of welfare in future, deficits accumulate, public debt increases, investment and growth are reduced revenues, tightens the tax base and increases inflation. Thus, we recommend and point out the need to make the decision-making bodies accountable, through strengthening the fiscal responsibility legal framework and restructuring the status of the Fiscal Council.

Table 5

Distribution of Revenue within the North-East Region and Gini Index Value in 2015

	County	cumm VT %	Cumm pop %	Area	Gini PCREV
		0	0		0.086073612
Regiunea Nord-Est	Vaslui	9.19	11.41	52.46	
	Botoșani	18.54	23.54	168.24	
	Neamț	32.12	38.36	375.35	
	Bacău	51.28	57.03	778.45	
	Suceava	70.72	76.44	1 183.65	
	Iași	100.00	100.00	2 011.49	
				4 569.63	

Source: Own calculations using INSSE data.

In Romania, the principle of decentralization of public services provides for the establishment of some public services in communes and cities and their abolition at county level or at central level. Local government is, therefore, carried out in municipalities and towns by the local councils and mayors, and to the county level by the county council. Local councils and mayors do not have subordination relationships, as there are no relationships subordination between local public authorities and county council. Due to the fact that in first part of our study we tested fiscal capacity and we investigate the relationship between fiscal disparities and variation in local fiscal capacity in Romania, highlighting interregional disparities, in second part, we will test the implication of fiscal decentralization on income inequality. In line with above mentioned, we quantified local fiscal disparities, in terms of fiscal capacity by per capita local revenue (or expenditure) and we analysis if the policy intentions, considering the reforms implemented in this country and the tremendous changes in its political and legal framework, has a direct implication on inequalities (Table 6). The analysis is first conducted using OLS to estimate equation, the dataset consists of annual observations of Statistical yearbooks of Romania (National Institute of Statistics 2004 – 2015), Human Development Reports, IMF and World Bank over the years 2004 – 2015.

Table 6

The Result of the Analysis of the Relationship between Decentralization and Income Inequality Annual Observations

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
VARIABLES	lGINI	lGINI	lGINI	lGINI	lGINI	lGINI	lGINI	lGINI
PCOREV_1	0.445**	0.268*	0.256*	0.256*	0.123*	0.117**	0.0965*	–0.0111
	(0.123)	(0.110)	(0.107)	(0.107)	(0.0511)	(0.0432)	(0.0446)	(0.0502)
LFRSI	–0.0244**	–0.0144**	–0.0140**	–0.0140**	–0.00966**	–0.00927**	–0.0102***	
	(0.00613)	(0.00446)	(0.00435)	(0.00435)	(0.00324)	(0.00268)	(0.00284)	
EDU	–0.00466	–0.00149	0.00148	0.00148	0.00462	0.00414		
	(0.00428)	(0.00516)	(0.00387)	(0.00387)	(0.00339)	(0.00265)		
INV	–0.00147	–0.000751	–0.000657	–0.000657	–0.000158			
	(0.000645)	(0.000689)	(0.000667)	(0.000667)	(0.000607)			
POP	0.0454*	0.0229	0.0189	0.0189				
	(0.0160)	(0.0145)	(0.0135)	(0.0135)				
HDI	–0.0920	–0.0758						
	(0.0654)	(0.0846)						
IHNUTS2_1	0.00261							
	(0.00134)							
Constant	–0.636	–0.213	–0.248	–0.248	0.102	0.109	0.198***	0.231***
	(0.297)	(0.266)	(0.258)	(0.258)	(0.0681)	(0.0582)	(0.0134)	(0.0150)
R–squared	0.626	0.632	0.599	0.599	0.520	0.517	0.418	0.005

Note: Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: Own calculations.

The results highlights the factors used in the regression model, and have what can be considered as the expected significant coefficient signs. Referring to our results, according to table no. 6 the relation between Gini (which is a measure of inequality by means of a ratio analysis) and PCGRT (which is a tool indicating the dependence of local governments at the central level and shows the weaknesses in consolidating the decentralization approach) is positive and significant at 5%, which emphasizes that the higher the PCGRT level, the deepening is Gini value. In our study, considering that the dependent variable – Gini coefficient ranges from 0 (or 0%) to 1 (or 100%), with 0 representing perfect equality and

1 representing perfect inequality, we find that an increase in the PCGRT variable would lead to the deepening of already existing equality. The analysis in this study strengthen the theoretical foundation from the area of fiscal decentralization, showing that even if our approach is the only one on the profile of Romania, is validated by literature. More specifically, Zhao (2009) and Zhang and Xian (2006) relate on the profile of China that that even if during 1980 – 1988 central transfers had significant equalization effects on China, after 1994 period, central transfers contributed much larger to China fiscal disparities. Moreover, our findings consolidate also the point of view from the most recent literature, in which case Tolic et Stojcic (2019) suggest that decentralized systems in which local governments rely more on own revenues are more efficient than those where the emphasis is on the transfers from the central government. Even if in terms of theoretical explanation, the rationale of public budgetary transfers is to increase the disposable income of weaker regions in all Member States, while reducing that of more prosperous regions, we find that decentralization can affect income distribution and can deepening the existing inequalities.

The results are in contrast with Tselios et al. (2012) and Sepulveda and Martinez-Vasquez (2011) point of view, which show that decentralization, lowers income inequality and in line with Neyapti (2006) who considers that revenue decentralization may lead to increased inequality and only coupled with good governance, revenue decentralization could improve income distribution. However, the results indicated by Tselios et al. (2012) on the profile of the European Union (EU), as the authors mentioned, are robust to the measurement and definition of income inequality, as well as to the weighting of the spatial units by their population size.

We also find that Sacchi and Salotti (2014) on the profile of of 23 OECD countries over the period 1971 – 2000, validate our results and highlight that a higher level of fiscal decentralization is associated with a more unequal distribution of income across individuals within a country. The author highlights the importance of local fiscal performance and indicate that the effects of fiscal decentralization are stronger if real autonomy over the decentralized taxes is given to the sub-central governments. In other words, the idea of “masked decentralization” cannot lead local authorities to a degree of real autonomy and affect regional disparities.

According to Oprea, Mehdian and Stoica (2013), the crisis has severely shook economies around the world and raised serious doubts about the long-term viability of public policies, which means that the capacity of the local authorities to generate income, shows an immediate control over them and implicitly, represents an important dimension of the financial performance, together with the capacity of investment and local financial management. In these conditions, we can judge that a “masked decentralization”, cannot lay the foundation for a culture of local financial management.

In line with the idea of “masked decentralization”, the Law on decentralization (Law 195/2006), in article 30, speaks of “ensuring the vertical and horizontal balancing of local budgets”, a concept which, in our point of view, indicates a bottomless form, due to the fact that most of the amounts received as tax revenues go to the state budget. However, this eliminates the essence of decentralization under the aegis of which the state should intervene only if local bodies cannot correct the imbalances. The law of local public finances has undergone about 58 changes since the adoption and those criteria for allocating quotas and amounts broken down for balancing the local budgets are inaccurate, the quotas and amounts being changed almost every year, and by the annual law of the state budget, which intervenes with changes in the Law of local public finances, things get even worse, since it is almost impossible for local authorities to have a vision of the amounts that will be returned to them (as a percentage of income tax, as well as fixed amounts from VAT) for balancing local budgets, thus assisting a masked form of decentralization. This judgment is also validated by the evolution of the index of fiscal decentralization (calculated in Appendix 3 of this paper), which reveals at the level of 2004 a relative fiscal centralization to perfect fiscal centralization, and from 2006, when a new package of laws was adopted. Regarding decentralization, it is located at the upper limit of the relative centralization.

Comparing results obtained with some theoretical arguments supporting the view that regional income inequalities, the degree of fiscal decentralization and the quality of government are simultaneously determined, we can say that decision-making authorities are obliged to recognize the need for sustainable fiscal policy to limit the expansion of this unfavourable phenomenon. Moreover, with the increasing role of local governments in fiscal decentralization, the impacts of local policies should also be considered in programs with nation-wide coverage and all reforms aiming to enforce fiscal discipline shouldn’t strengthened the local budgetary framework or restrained local discretionary power to act towards development.

Referring to our initial test results, the calculation of the coefficients for each region and for the whole country shows a certain inequality in the distribution of revenues and an alarm signal regarding the “healing” nature of transfers from the state budget. Focusing on local governments’ role in decentralization, we can say that fiscal decentralization is a government policy that affects and relates to various sectors and also can have a direct implication on inequality if implemented reforms aiming to enforce fiscal discipline strengthened the local budgetary framework and restrained, therefore, the local discretionary power to act towards development. An interesting point of view can be observed with variables regarding the implications fiscal local rules strength index (LFSRI), which is negatively correlated with Gini Index, we have significant at the 5% level and the explanation is that at the EU level, IMF report shows a folding these rules rather towards the tightening of local financial autonomy, but not towards empowering local authorities, such as normal.

Even if in art. 120, par. (1) of the Romanian Constitution we find that “The public administration in the territorial-administrative units is based on the principles of decentralization, local autonomy and deconcentration of public services” and article 2 paragraph (1) of Law 215/2001, with subsequent amendments and completions, relate that “in the administrative – territorial organizations are organized and operate on the basis of the principles of decentralization, local autonomy, deconcentration of public services”, our results suggest that if the resources are allocated discretionary, politicized and overly centralized, intergovernmental transfers only indicate a dependence on the state level and a masked decentralization, which has a direct implication on income inequality.

Conclusions

The present paper performed an analysis of the local fiscal disparities in Romania, in terms of fiscal capacity by per capita local revenue (or expenditure) and analysed the policy intentions, considering the reforms implemented in this country and the tremendous changes in its political and legal framework for the period 2004 – 2015. By using Gini index to measure the dispersion of local fiscal capacity over the period and a panel data approach to determine the extent to which decentralization involves inequality, the results of the analyses show that fiscal policy does very little to reduce inequality and poverty overall. The paper confirms a certain inequality in the distribution of revenues and an alarm signal regarding the "healing" nature of transfers from the state budget.

Starting with gini indices values, we can observe that PCREV were significantly more dispersed than per capita local GDPs, indicating that local revenue disparities were wider than economic disparities. The specific impulse of PCGRT show that this have a direct implication on the dispersions of PCEXP. It seems that income inequality affects mostly the low-income population and worrying statistic provided by the National Statistics Institute, validate our result and shows that approximately 25% of the population is considered part of the national relative poverty rate. In order to show the inter-regional disparities, we calculated for 2015 the value of the Gini coefficient for each region of Romania, thus finding that the differences in the distribution of the revenues also belong to each region, the highest value of the Gini coefficient we identify on the profile of some regions like

Bucharest-Ilfov, North-West, West and Sowth-East and the lower value in regions like North-East or Sowth-West. The evidence between regions, confirms the same situation, results obtained show for example that Vaslui County represents 11.41% of the population of the North-East region, respectively, accumulating 9.19% of the total revenues of the region, also Vaslui and Botosani represents 23.54% of the the North-East region and accumulating 18.54% of the region's total revenues. In this case, an interesting perspective for Gini index values in Romania regions, based on grants, demonstrate that these amounts from the state budget only press on already existing disparities, considering, for example, that Vaslui County, one of the weakest counties in the weakest region of Romania, contributes to the state budget with 100 euros and gets 150 euros.

This means that the contribution of PCGRANTS to the incomes of local authorities aggravates or supports existing inequalities. In line with this, we recommend considering another dimension of fiscal decentralization based on a new income distribution scheme, namely a reorientation of direct tax revenues (such as income tax and corporation tax) to the budget of local authorities. Under this recital, in the process of complying with the budgetary principles, local authorities could pay equalization quotas to the county budget they belong to and implicitly, to the state budget. In compliance with the legislative provisions in the field, currently, the corporate income tax and income tax is included in the state budget, the latter being paid in the form of "broken quotas" to the local budgets and the former remains to the state budget. Of course, the problem of small and very poor localities that are unable to self-finance persists, but this reason can be remedied even in terms of the implications of the equalization procedures and the solidarity reiterated by the county quota. Overall, we can see that the contribution of PCGRANTS to the revenues of local authorities only worsens or sustains the existing inequalities.

Regarding panel data approach used to determine the extent to which decentralization involves inequality and to the impact of fiscal decentralization on income inequality, this research demonstrated that the higher the level of PCOREV, the higher the Gini value. So, it is clearly that an increase in the PCOREV variable would lead to the deepening of already existing equality. The paper intends to be a starting point in the study of income inequality in Romania. It is currently one of the few academic papers on this topic. More exactly, few analyses in Romania have so far focused on the fiscal policy and income inequality issues, whilst many views in this area of debate, have brought forward cultural and political arguments, losing sight of it the relationship between fiscal disparities and variation in local fiscal capacity.

The results are in contrast with Tselios et al. (2012) and Sepulveda and Martinez-Vasquez (2011) point of view, which show that decentralization lowers income inequality. But as we have mentioned in the paper, results indicated by authors on the profile of the European Union (EU), are robust to the measurement and definition of income inequality, as well as to the weighting of the spatial units by their population size.

However, the results strengthen the theoretical foundation from the area of fiscal decentralization, showing that even if our approach is the only one on the profile of Romania, is validated by literature. More specifically, Zhao (2009) and Zhang and Xian (2006) relate on the profile of China that that even if during 1980 – 1988 central transfers had significant equalization effects on China, after 1994 period, central transfers contributed much larger to China fiscal disparities. Our results are in line with Neyapti (2006) who considers that revenue decentralization may lead to increased inequality and only coupled with good governance, revenue decentralization could improve income distribution and based on Sacchi and Salotti (2014) research on the profile of of 23 OECD countries over the period 1971 – 2000, the study validate that a higher level of fiscal decentrelization is associated with a more unequal distribution of income across individuals within a country and indicate that the effects of fiscal decentralization are stronger if real autonomy over the decentralized taxes is given to the sub-central governments. In other words, the idea of "masked decentralization" cannot lead local authorities to a degree of real autonomy and affect regional disparities.

Moreover, our findings consolidate also the point of view from the most recent literature, in which case Tolic and Stojcic (2019) suggest that decentralized systems in which local governments rely more on own revenues are more efficient than those where the emphasis is on the transfers from the central government. Finally, we recommend and point out the need to make the decision-making bodies accountable, by consolidating the law of fiscal-budgetary responsibility, restructuring the status of the fiscal council and eliminating legislative gaps in the field of public finances, which allow, for example, successive changes to the law of local public finances.

References

BAHL, R. – MARTINEZ-VAZQUEZ, J. – WALLACE, S. (2002): State and Local Government Choices in Fiscal Redistribution. National Tax Journal, *55,* No. 4, pp. 723 – 742. Available at: <www.jstor.org/stable/41789637>.

BARRO, J. R. (1999): Inequality, Growth, and Investment. National Bureau of Economic Research, No. w7038. DOI: 10.3386/w7038.

BARRO, J. R. (2000): Inequality and Growth in a Panel of Countries. Journal of Economic Growth, *5,* No. 1, pp. 5 – 32. DOI: 10.1023/A:1009850119329.

BERAMENDI, P. (2003): Political Institutions and Income Inequality: The Case of Decentralization. [Markets and Political Economy Working Paper, No. SP II 2003-09.] Berlin: Wissenschaftszentrum.

BERREBI, Z. M. – SILBER, J. (1985): Income Inequality Indices and Deprivation: A Generalization. The Quarterly Journal of Economics, *100*, No. 3, pp. 807 – 810.

BRENNER, N. (2004): New State Spaces: Urban Governance and the Rescaling of Statehood. Oxford: Oxford University Press. DOI: 10.1093/acprof:oso/9780199270057.001.0001.

CANALETA, C. G. – ARZOZ, P. P. – GARATE, M. R. (2004): Regional Economic Disparities and Decentralization. Urban Studies, *41*, No. 1, pp. 71 – 94. Available at: <https://doi.org/10.1080/0042098032000155696>.

DINU, M. – SOCOL, C. (2006): Intrarea României în a doua modernitate. Potențialul de convergență. Cercetare şi educaţie, 7.

DOLLAR, D. (2007): Poverty, Inequality and Social Disparities during China's Economic Reform. [World Bank Policy Research Working Paper, 4253.] Washington, DC: World Bank.

FEI, C. H. – RAINIS, J. G. – KUO, S. W. Y. (1978): Growth and the Family Distribution of Income by Factor Components. The Quarterly Journal of Economics, *92*, No. 1, pp. 17 – 53.

GOERL, C.-A. – SEIFERLING, M. (2014): Income Inequality, Fiscal Decentralization and Transfer Dependency. [IMF, WP/14/64.] Washington, DC: International Monetary Fund.

GONZÁLEZ ALEGRE, J. (2010): Decentralization and the Composition of Public Expenditure in Spain. Regional Studies, *44*, No. 8, pp. 1067 – 1083.

GÜTH, W. et al. (2005): Tax Morale and (De-)centralization: An Experimental Study. Public Choice, *125*, pp. 171 – 188.

HENG, Y. (2008): Fiscal Disparities and the Equalization Effects of Fiscal Transfers at the County Level in China. Annals of Economics and Finance, *9*, No. 1, pp. 115 – 149.

HOFMAN, B. – GUERRA, S. C. (2007): Ensuring Inter-Regional Equity and Poverty Reduction. In: MARTINEZ-VAZQUEZ, J. and SEARLE, B. (eds): Fiscal Equalization. Boston, MA: Springer. Available at: <https://doi.org/10.1007/978-0-387-48988-9_3>.

KAJA BONESMO, F. (2012): Less Income Inequality and More Growth – Are they Compatible? Part 6. The Distribution of Wealth. [OECD Economics Department Working Papers, No. 929.] Paris: OECD Publishing. Available at: <http://dx.doi.org/10.1787/5k9h28t0bznr-en>.

KOTSOGIANNIS, C. – SCHWAGER, R. (2005): On the Incentives to Experiment in Federations. [Online.] [CESifo Working Paper 1585.] Available at: <http://www.uni-goettingen.de/en/suche.html>. [Cit. 10 Oct. 2015.]

LAMBERT, P. J. – YITZHAKI, S. (2013): The Inconsistency between Measurement and Policy Instruments in Family Income Taxation. FinanzArchiv: Public Finance Analysis, *69*, No. 3, pp. 241 – 255.

Le GALÈS, P. (2002): European Cities: Social Conflicts and Governance. Oxford: Oxford University Press.

LERMAN, R. I. – YITZHAKI, S. (1985): Income Inequality Effects by Income Source: A New Approach and Applications to the United States. The Review of Economics and Statistics, *67*, No. 1, pp. 151 – 156.

LESSMANN, C. (2009): Fiscal Decentralization and Regional Disparity: Evidence from Cross Section and Panel Data. Environment and Planning A, *41*, No. 10, pp. 2455 – 2473.

LESSMANN, C. (2012): Regional Inequality and Decentralization: an Empirical Analysis. Environment and Planning A, *44*, No. 6, pp. 1363 – 1388.

LOCKWOOD, B. (2005): Fiscal Decentralization: A Political Economy Perspective. Warwick Economic Research Papers, No. 721, pp. 1 – 34.

MILITARU, E. – STANILA, L. (2015): Income Variability in Romania: Decomposing Income Inequality by Household Characteristics. Procedia Economics and Finance, *26*, No. 1, pp. 227 – 233.

MITRICĂ, E. (2006): Politica fiscală a României în perspectiva aderării la Uniunea Europeană. Economie teoretică și aplicată 3.

MOLNAR, M. (2010): Romanian households' income inequality. Romanian Statistical Review, *58*, No. 7, pp. 54 – 77.
NEYAPTI, B. (2006): Revenue Decentralization and Income Distribution. Economics Letters, *92*, No. 3, pp. 409 – 416.
OATES, W. (2008): On the Theory and Practice of Fiscal Decentralization. In: AUERBACH, A. J. and SHAVIRO, D. N. (eds): Public Finance: Economic and Legal Perspectives. Cambridge: Harvard University Press, pp. 165 – 189.
ONOFREI, M. (2007): Public Administration, Scientific Fundamentals and Good Practices. Iaşi: Alexandru Ioan Cuza University Publishing House.
OPREA, F. – MEHDIAN, S. – STOICA, O. (2013): Fiscal and Financial Stability in Romania-An Overview. Transylvanian Review of Administrative Sciences, *9*, No. 40, pp. 159 – 182.
OECD (2006): Intergovernmental Transfers and Decentralised Public Spending. [Working Paper, No. 3.] Paris: Organization for Economic Cooperation and Development.
OECD (2009a): The Fiscal Autonomy of Sub-Central Governments: An Update. [Working Paper, No. 9.] Paris: Organization for Economic Cooperation and Development.
OECD (2009b): Taxes and Grants: On the Revenue Mix of Sub-Central Governments. [Working Paper, No. 7.] Paris: Organization for Economic Cooperation and Development.
PRUD'HOMME, R. (1995): The Dangers of Decentralization. [Online.] The World Bank Research Observer, *10*, No. 2, pp. 201 – 220. Available at: <http://documents.worldbank.org/curated/en/602551468154155279/The-dangers-of-decentralization>.
RAFFINETTI, E. – SILETTI, E. – VERNIZZI, A. (2015): On the Gini Coefficient Normalization when Incomes with Negative Values are Considered. Statistical Methods & Applications, *24*, No. 3, pp. 507 – 521.
RESOSUDARMO, B. – VIDYATTAMA, Y. (2006): Regional Income Disparity in Indonesia: A Panel Data Analysis. [Online.] ASEAN Economic Bulletin, *23*, No. 1, pp. 31 – 44. Available at: <http://www.jstor.org/stable/41316942>.
RODRÍGUEZ-POSE, A. – EZCURRA, R. (2009): Does Decentralization Matter for Regional Disparities? A Cross-country Analysis. Journal of Economic Geography, *10*, No. 5, pp. 619 – 644.
RODRÍGUEZ-POSE, A. – KRØIJER, A. (2009): Fiscal Decentralization and Economic Growth in Central and Eastern. Growth and Change, *40*, No. 3, pp. 387 – 417.
SACCHI, A. – SALOTTI, S. (2014): The Effects of Fiscal Decentralization on Household Income Inequality: Some Empirical Evidence. Spatial Economic Analysis, *9*, No. 2, pp. 202 – 222.
SACCHI, A. – SALOTTI, S. (2011): Income Inequality, Regional Disparities, and Fiscal Decentralization in Industrialized Countries. Collana del Dipartemento di Economia, Universita degli Studi Roma, November, 14 – 15.
SALVERDA, W. – NOLAN, B. – SMEEDING, T. M. (eds) (2009): The Oxford Handbook of Economic Inequality. Oxford: Oxford University Press.
SAVITRI, M. D. (2012): The Impacts of Fiscal Decentralization on Income Inequality in Indonesia. Tokyo: The Okuma School of Public Management, Waseda University, No. 6, pp. 1 – 20.
SEN, A. (1997): On Economic Inequality. Expanded Edition with an Annex „On Economic Inequality after a Quarter Century". [Jointly with James Foster.] Oxford: Clarendon Press/New York: Oxford University Press.
SEPULVEDA, C. F. – MARTINEZ-VAZQUEZ, J. (2011): The Consequences of Fiscal Decentralization on Poverty and Income Inequality. Environment and Planning C: Politics and Space, *29*, No. 2, pp. 321 – 343. Available at: <https://doi.org/10.1068/c1033r>.
SHANKAR, R. –SHAH, A. (2003): Bridging the Economic Divide Within Countries: A Scorecard on the Performance of Regional Policies in Reducing Regional Income Disparities. World Development, *31*, No. 8, pp. 1421 – 1441.
SHORROCKS, F. A. (1982): Inequality Decomposition by Factor Components. Econometrica: Journal of the Econometric Society, pp. 193 – 211.

STOSSBERG, S. – BARTOLINI, D. – BLÖCHLIGER, H. (2016): Fiscal Decentralization and Income Inequality: Empirical Evidence from OECD Countries. [OECD Economics Department Working Papers, No. 1331.] Paris: OECD Publishing. Available at: <http://dx.doi.org/10.1787/5jlpq7tm05r6-en>.

TOLIC, N. – STOJCIC, M. S. (2019): Direct and Indirect Effects of Fiscal Decentralization on Economic Growth. Ekonomický časopis/Journal of Economic, *67*, No. 3, pp. 280 – 306.

TORGLER, B. (2007): Tax Compliance and Tax Morale: A Theoretical and Empirical Analysis. Cheltenham: Edward Elgar Publishing Limited.

TSELIOS, V. – RODRIGUEZ-POSE, A. – PIKE, A. – TOMANEY, J. – TORRISI, G. (2012): Income Inequality, Decentralization, and Regional Development in Western Europe. Environment and Planning, *44*, No. 6, pp. 1278 – 1301. Available at: <https://doi.org/10.1068/a44334>.

Van de VEN, J. – CREEDY, J. (2005): Taxation, Reranking and Equivalence Scales. Bulletin of Economic Research, *57*, No. 1, pp. 13 – 36.

VO, D. H. (2009): Fiscal Decentralization in Vietnam: Lessons from Selected Asian Nations. Journal of the Asia Pacific Economy, *14*, No. 4, pp. 399 – 419.

WANG, R. (2002): Research of Regional Difference in Compulsory Education Tuition in China. In: MIN, W. (ed.): Supplying Sufficient Resource for Education. Beijing: People's Education Publisher.

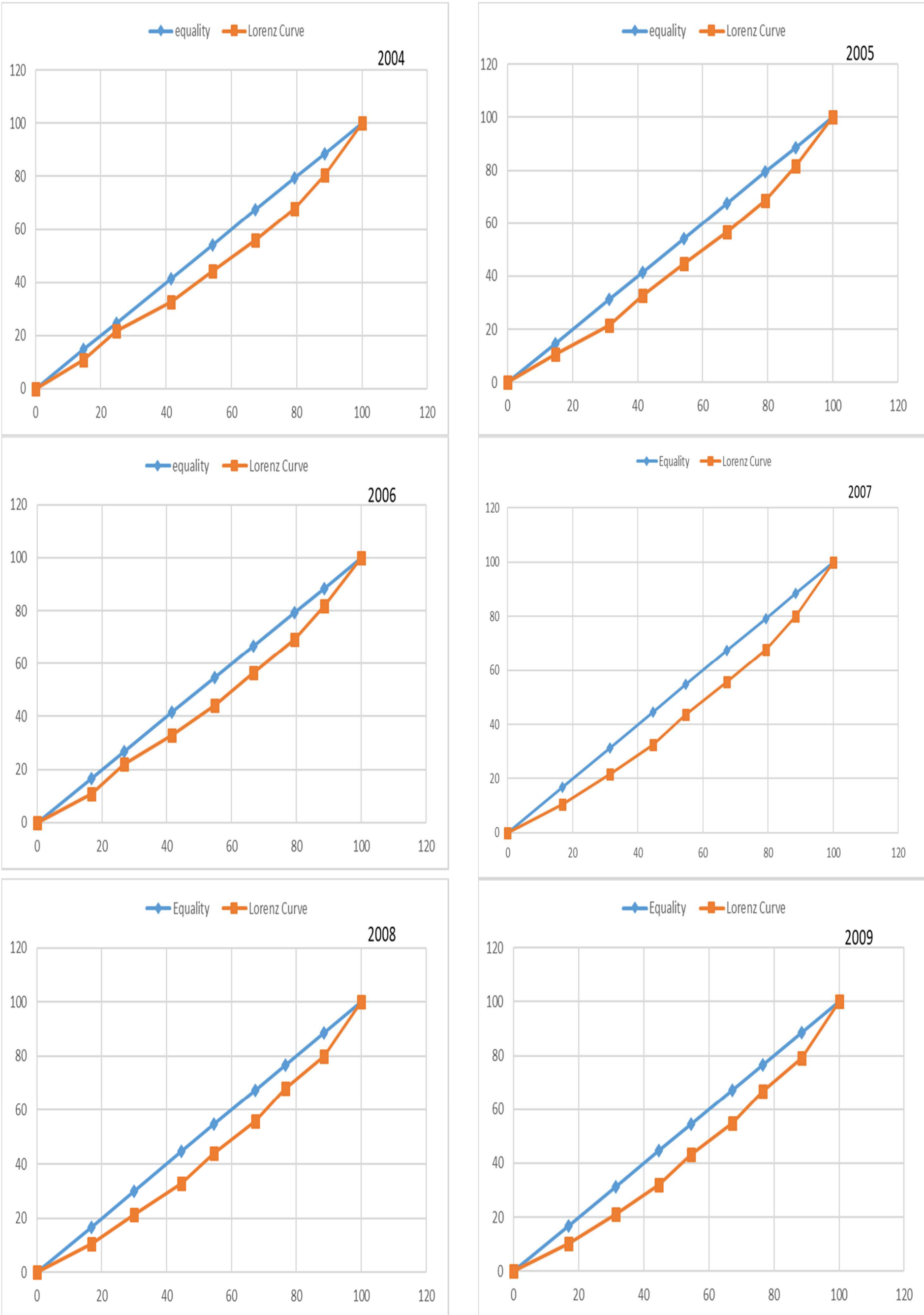
WELCH, F. (1999): In Defense of Inequality. The American Economic Review, *89*, No. 2, pp. 1 – 17. Available at: <http://www.jstor.org/stable/117073>.

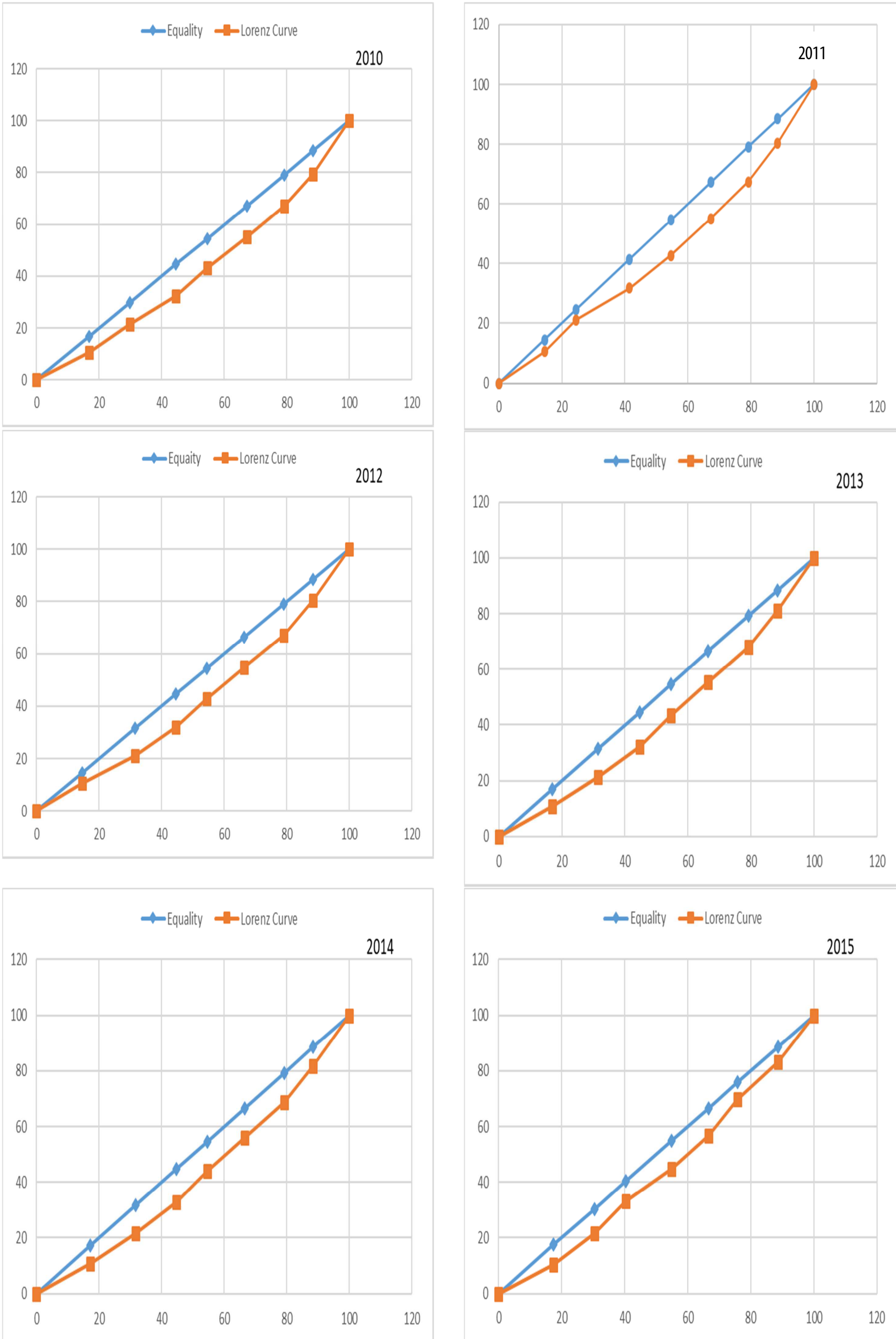
ZHANG, H. – XIAN, C. (2006): Current Status of China's Fiscal Equalization: 1994 – 2004. Zhengyang Caijing Daxue Xuebao, *12*, pp. 12 – 16.

ZHAO, Z. J. (2009): Fiscal Decentralization and Provincial level Fiscal Disparities in China: A Sino-US Comparative Perspective. Public Administration Review, *69*, Suppl. 1, pp. S67 – S74.

A p p e n d i x 1

The Income Inequality – Lorenz Curve for Romania 2004 – 2015 for Expenditure





Source: Computed by authors.

Appendix 2

Correlation

	LFRSI	GINI	EDU	INV	POP	HDI	GDPGR	IHNUTS~2	PCOREV_1
LFRSI	1								
GINI	–0.4799	1							
EDU	–0.5078	0.4987	1						
INV	–0.4208	0.8162	0.4592	1					
POP	–0.3982	0.6416	0.6481	0.4033	1				
HDI	0.3354	–0.1889	–0.6778	–0.2471	–0.1326	1			
GDPGR	–0.019	0.3968	0.1617	0.4944	0.4801	0.0721	1		
IHNUTS2_1	0.689	–0.2902	–0.3954	–0.2844	–0.3642	0.2364	–0.0176	1	

Source: Computed by authors.

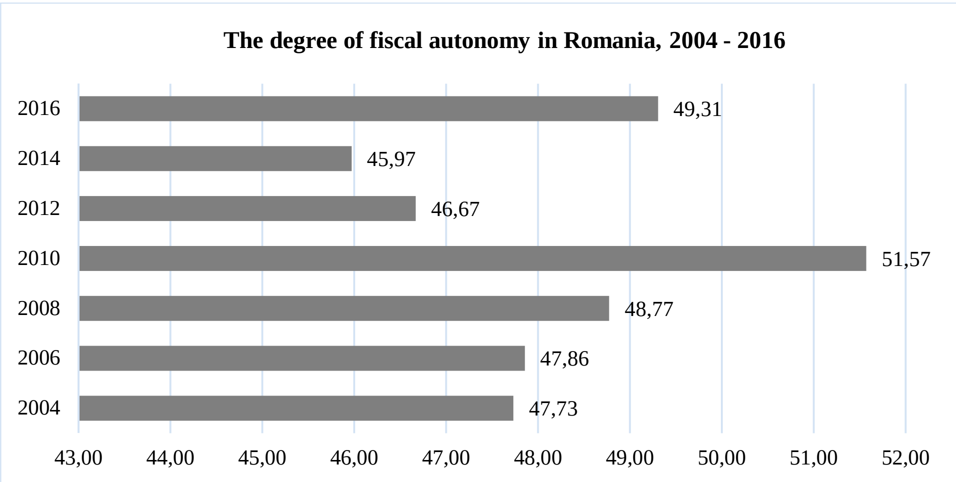
Appendix 3

Fiscal Decentralization Index

According to VO (2009) fiscal decentralization index is the geometric mean of the fiscal autonomy (FA) and fiscal importance (FI) of subnational governments (SNGs).

Figure 1

Degree of Fiscal Autonomy



Source: Computed by authors.

The degree of fiscal autonomy is calculated as the share of own local revenues in total local expenditures and shows the degree of financing of public services offered by the local authorities from own revenues.

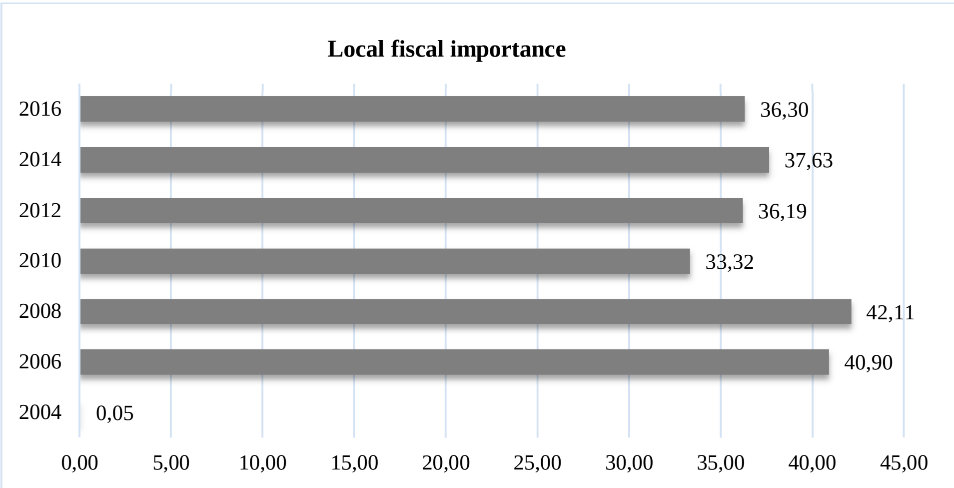
$$FA = \frac{\sum_{i=1}^{n} OR_i}{\sum_{i=1}^{n} E_i} * 100$$

where

OR_i – are total revenue from the local budget of subnational governments (SNGs);
(i) – subnational governments;
(*n*) – the number of subnational governments;
E – total public expenditure of subnational governments (SNGs).

F i g u r e 2

Local Fiscal Importance



Source: Computed by authors.

$$FI = \frac{\sum_{i=1}^{n} E_i}{(E_{SB} + \sum_{i=1}^{n} E_i) - T} * 100$$

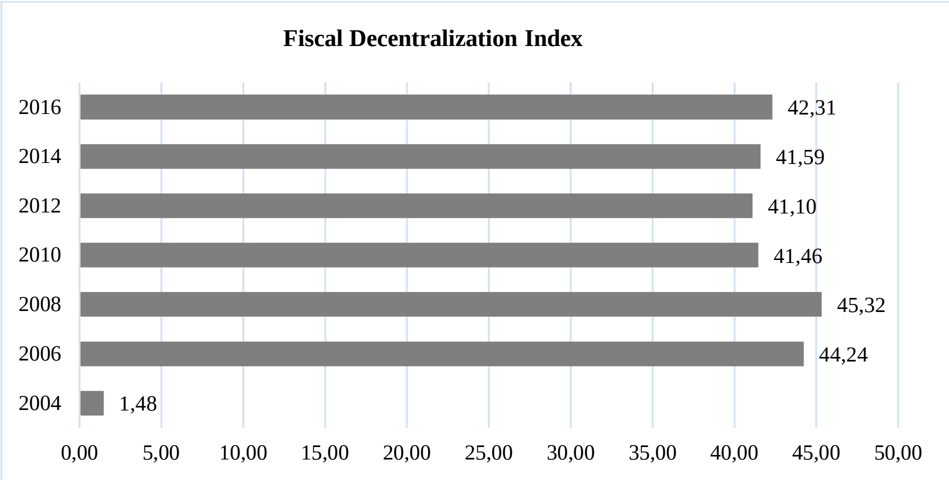
where

E_i – total expenditure from the local budget of the administrative-territorial units;
(i) – subnational governments;
(*n*) – the number of subnational governments;
E_{Bs} – total public sector spending at all levels of government in the country.

These include expenditures entered in the state budget and all local budgets, from which tax transfers from one government to another are deducted (transfers and subsidies from the state budget to local budgets).

F i g u r e 3

Fiscal Decentralization Index



Source: Computed by authors according to the methodology developed by Vo (2009).

The fiscal decentralization index *(FDI*) is based on the *fiscal autonomy and fiscal importance* approach and is the geometric average of the measures of the two elements (Vo, 2009):

$$FDI = \sqrt{FA * FI} = \sqrt{\frac{\sum_{i=1}^{n} OR_i}{\sum_{i=1}^{n} E_i} * \frac{\sum_{i=1}^{n} E_i}{(E_{SB} + \sum_{i=1}^{n} E_i) - T}}$$

where

50 < FDI < 100 = *relative fiscal decentralization;*

0 < FDI < 50 = *relative fiscal centralization;*

FDI = 0 – perfect fiscal centralization, whereby subnational expenses are fully financed by tax transfers from the national government (Own revenue = 0);

FDI = 100 – perfect fiscal decentralization, whereby total public spending is fully funded by subnational governments.