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Fiscal Decentralization and Redistribution: Considering Inclusive Growth

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Abstract

The importance of inclusive growth, which includes both economic growth and mitigation of inequality, is being discussed in many countries. Notably, some studies have actively shown the relationship between fiscal decentralization and income redistribution based on the decentralization theorem that fiscal decentralization affects the competitiveness of the economy and the performance of government. This paper empirically analyzed the effect of fiscal decentralization on inclusive growth focused on income redistribution. The analysis showed that fiscal decentralization had a statistically significant impact on inclusive growth, particularly on redistribution indicators such as the Gini coefficient level, labor income share. As a result, fiscal decentralization, which transfers not only financial resources but decision-making authority to local governments, can contribute to reducing inequality by increasing the level of welfare for the people.

Keywords: *Fiscal decentralization, Inclusive growth, Redistribution, Laffer curve*

1. Introduction

Recently, international organizations such as the World Bank, IMF, OECD approach the relationship between economic growth and inequality from a new perspective and suggest 'inclusive growth' as a solution. Inclusive growth is a concept that comprehensively pursues economic growth and mitigation of inequality, and until recently has focused on the study between individuals' income redistribution and economic growth [1][2][3][4]. However, there may be gaps in income between regions within a country, such as the financial conflict between northern and southern Italy, the claim of independence in Spain's Catalonia region, and inequality among Seoul metropolitan areas and other regions in South Korea. Thus, some studies analyzed the relationship between fiscal decentralization and inclusive growth policies in terms of income redistribution [5][6][7][8][9][10].

The problem is that there is a need for further discussion on how this fiscal decentralization affects not only the regional gap but also the social welfare level of residents, and in particular, the inclusive growth, such as income redistribution. Based on the discussion of previous studies,

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this study aims to show the effects of fiscal decentralization policy on achieving inclusive growth based on income redistribution.

2. Relations between fiscal decentralization and redistribution

Most of the early researches on fiscal decentralization and income redistribution focused on examining the relationship between fiscal decentralization and economic development or economic growth [11][12][13][14][15][16][17]. Recently, however, the concept of inclusive growth has been proposed in terms of easing inequality through income redistribution, and some studies have empirically analyzed the relationship between fiscal decentralization and income inequality directly [5][7][8][10]. These empirical studies suggest different results according to the research model and methodology, such as the target countries of analysis, data covering time period, and variables.

First, research shows that fiscal decentralization contributes to regional economic development and the provision of social infrastructure, thereby consequently alleviates income inequality [10]. These findings explain the decentralization theorem that local governments improve the efficiency of public service provision [18]. On the other hand, research has also shown that fiscal decentralization negatively affects income distribution and can deepen inequality [8][9]. These findings support the classical fiscal federalism theory that the central government can more effectively implement and redistribute income and macroeconomic stabilization policies than local governments [19].

There is also research showing that decentralization affects economic inequalities, depending on the income level of the country. Some studies have shown that decentralization contributes to the reduction of inequality in high-income countries, while it intensifies inequality in low and middle-income countries [5][7]. Income inequality can also be alleviated until the size of the public sector reaches a certain threshold (20% of GDP), but the larger the public sector, the less effective it is to ease income inequality [9]. There is also research showing that the welfare and income distribution levels of residents improved when the fiscal authority of local governments remains at an appropriate level through the Laffer curve [20]. Eventually, the relationship between fiscal decentralization and income redistribution may differ depending on the quality of the government’s fiscal system and financial structure.

3. Empirical set-up and data

3.1. Econometric procedure

This study conducted an empirical analysis of panel data collected from OECD countries from 1995 to 2017 to examine the long-term relationship between fiscal decentralization and inclusive growth. Based on the previous studies, this study hypothesizes that fiscal decentralization would contribute to inclusive growth up to a certain level, and it will start to fall once it exceeds a certain internal threshold [20]. Thus, it is necessary to check if the relationship is increasing at lower values and decreasing at higher values within the interval. This paper used PCSE (Panel Corrected Standard Error) estimation method and the Lind-Mehlum method of testing U or inverse-U shapes [21] with STATA 14.2. The estimated regression equation is as follows.

$$Y_{it} = \alpha + \beta_1 DREV_{it-1} + \beta_2 DTAX_{it-1} + \beta_3 DEXP_{it-1} + \beta_4 ECO_{it-1} + \beta_5 POLI_{it} + \beta_6 CIRCUM_{it} + \varepsilon_{it} \quad (1)$$

Y represents inclusive growth, DREV represents revenue decentralization, DTAX represents tax revenue decentralization, and DEXP represents expenditure decentralization. ECO are economic factors that affect inclusive growth, POLI are political and social factors that affect the dependent variable, and CIRCUM are other environmental factors. α and β are constants and coefficients, and ε means random error. i and t represent the country and year, respectively.

3.2. Measuring key variables

This study set the Gini gap, labor income share, and the ratio of social welfare expenditure as dependent variables as performance indicators for redistribution policies that measure inclusive growth, considering the importance of easing and fair distributing income inequality. The independent variable of this study is the level of fiscal decentralization, which can be quantitatively measured by surrogate indicators according to OECD guidelines based on previous studies. Lastly, control variables can be divided into economic, political and social, and environmental factors. The contents and sources of data used as dependent, independent, and control variables are shown in [Table1].

Table 1. Definitions and sources of variables

Classification			Definition	Source of data
Dependent variables (DV)	Individual income distribution	Gini-gap	Gini coefficient based on disposable income after tax and transfer expenditure (the higher the Gini gap, the greater the inequality)	OECD Income Distribution Database
	Functional income distribution	Labor income share	(Employee's remuneration + Overseas workers remuneration) / National Income * 100	OECD Income Distribution Database
	Redistribution policy	Social welfare expenditure	Social welfare expenditure share of total public expenditure	OECD stats
Independent variables (IV)	Revenue Decentralization	DREV	SREV(Total revenues of local governments) / GREV(Total revenues of general governments)	IMF Government Finance Statistics
		DTAX	STAX (Local tax revenues) / GTAX (Total tax revenues of general governments)	IMF Government Finance Statistics
	Expenditure decentralization	DEXP	SEXP (Total expenditure of local governments) / GEXP (Total expenditure of general governments)	IMF Government Finance Statistics
Control variables (CV)	Economic factors	Employment rate	The proportion of the Employed in Population 15-65	OECD stats
		Pre-intervened poverty	Percentage of the population whose income falls below the poverty line (before taxes)	OECD Income Distribution Database
		GDP growth rate	GDP growth per year	OECD stats
	Politico-social factors	National competitive ness ranking	Global competitiveness report Ranking	World Economic Forum
		Government type	Presidential = 1 Parliamentary system (president) = 2 Parliamentary system (monarch) = 3	OECD Government at a glance
		Local government type	State government = 1 Local government = 2	IMF Fiscal Decentralization Database

			Mixture of state and local government = 3	
		Political leaning of policymaker s	Conservative = 1 Moderate = 2 Liberal = 3	Election Commission and political parties homepage by country
		Democracy level	Combination index of Political right and civil liberties (The lower the number, the higher the level of democracy)	Freedom House
	Other factors	Ratio of elderly population	Share of population aged 65 and over	OECD stats
		Population density	Population density	World Bank Database
		Urbanizatio n	Proportion of urban population to the total population.	World Bank Database

4. Results

The results of PCSE analysis are shown in [Table 2]. The tax and expenditure decentralization have negative effects on the Gini Gap. These findings can be understood that the higher the local government's own income, the less inequality in the region. The revenue decentralization, including non-tax revenue, does not have a statistically significant effect on the Gini Gap, but it also has a positive impact on the labor income share. In other words, it can be seen that revenue decentralization contributed to securing jobs for local residents and regional development. The tax decentralization has a positive effect on social welfare expenditure. It can be understood as providing better service jobs and welfare services to residents as the higher the local government's financial strength. The expenditure decentralization has a negative effect on the Gini Gap. However, it is not statistically significant on social welfare expenditure and has a negative on labor income share. This can be understood that local governments need to overhaul the local government's fiscal spending system in a way that can alleviate inequality.

Table 2. PCSE Estimations

DV	Model 1			Model 2		
	GINI	LIS	SER	GINI	LIS	SER
IV	-	-	-	-	-	-
DREV	.0006026	.272051***	.227760***	.001264	.2378834***	.0352705
DTAX	.0000905	.0218753	.0228442	-.0005808***	.035297	.0770871***
DEXP	-.001999***	-.226762***	-.174530***	-.0022438***	-.2140297 ***	.0351242
CV	-	-	-	-	-	-

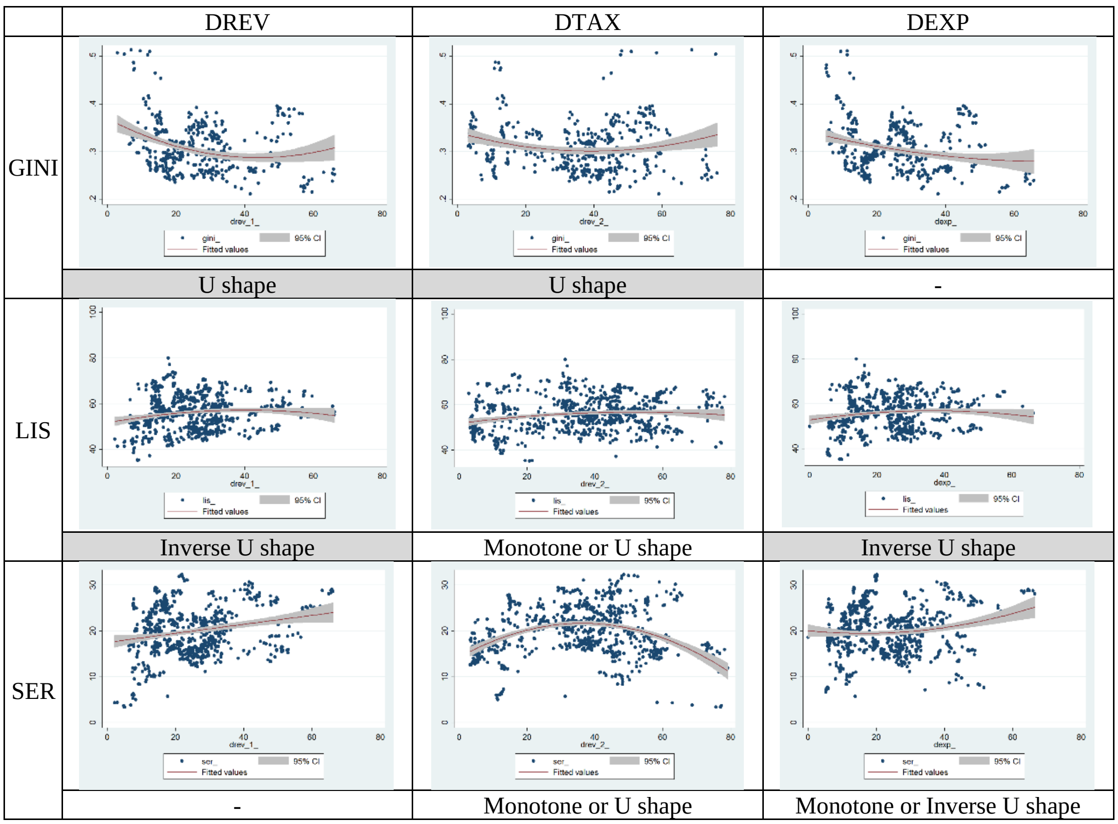
Employment rate	-	-	-	-.000925	.3026568***	-.1560161***
Pre-tax poverty	-	-	-	-.0733395	5.51373	33.09568***
Ratio of elderly population	-	-	-	-.0000803	-.3056084 ***	.1739246***
GDP growth rate	-	-	-	-.0000563	-.1938236***	-.1347745***
Government type	-	-	-	-.0407844***	-3.708263***	3.001156***
Local government type	-	-	-	-.0093122	3.154538***	.6409648
Political leaning of policymaker	-	-	-	-.0016562	.1156118	.0175905
Democracy level	-	-	-	.005378	-.2534894	-.7470204***
National Competitiveness level	-	-	-	-.0002166	-.0117523	-.0031235
Population density	-	-	-	-.0000558***	.0224611***	.0002714
Urbanization level	-	-	-	.0021492***	.110518**	-.0465184
R^2	0.9097	0.7819	0.5209	0.9327	0.9662	0.8307
N	420	723	729	336	371	380
N(group)	34	34	34	34	33	34

*$p<0.1$, **$p<0.05$, ***$p<0.01$.*

The relationship between the redistribution and the fiscal decentralization index shows that up to a certain level, the higher the level of revenue and tax decentralization, the lower the Gini coefficient, thereby resolving inequality. The fiscal decentralization also has a reverse U-shaped relationship with the labor income share, which shown in [Figure 1]. The expansion of revenue and expenditure decentralization contributes to the improvement of labor income share up to a certain threshold, but if it goes beyond a certain level, it appears to be a factor that will worsen the labor income share. Unlike the Gini coefficient and the labor income share, which were found to have a U or reverse-U-type relationship with fiscal decentralization based on statistical verification, the social welfare expenditures showed different types of results. It is seen as a result of applying a complex hypothesis to identify certain types of non-linearity [21], unlike the traditional method of checking general forms of non-linearity, including quadratic terms within a typical regression equation.

5. Conclusion

The analysis showed that tax decentralization has the most positive impact on inclusive growth. Tax decentralization works in a way that improves the Gini coefficient and affects the proportion of social welfare spending in a positive direction, which can be seen as contributing to inclusive growth. The revenue decentralization had a positive effect on the labor income share, but it had no statistically significant effect on the Gini coefficient and social welfare expenditure. The expenditure decentralization also had a negative effect on the Gini Gap, but it does have a negative effect on the labor income share. These contradicted expectations could be explained by the impact of the non-tax revenue for boosting the social overhead capital projects those are capital intensive or spending not directly for exclusive residents. Lastly, economic factors among the control variables such as employment rate, pre-intervened poverty rate, elderly population rate, and GDP growth rate had significant effects on inclusive growth. Meanwhile, the type of central government, the population density, and urbanization level among political and environmental factors showed statistically significant results as well.



** p<0.05, ** See the appendix1 for U-test results*

Figure 1. Fiscal decentralization-inclusive growth Laffer curve with quadratic prediction plots

Based on the above findings, this study derives the following policy implications:

First, this study found that tax decentralization by increasing the proportion of local taxes to total tax revenue of the general government can reduce inequality. It could be interpreted as decision making authority matters. Second, the relationship between fiscal decentralization and inclusive growth was changed based on specific thresholds, and it was verified through a Laffer curve. In other words, while fiscal decentralization contributes to inclusive growth in countries with low levels of institutionalization of fiscal decentralization, it has been confirmed that decentralization policy needs to be utilized in a balanced way in countries with expanded fiscal decentralization.

As a limitation, we tried to find the data-driven evidence of fiscal decentralization policy on redistribution, however, this study utilized the OECD countries from 1995 to 2017. For stronger support of our Laffer curve impact hypothesis of fiscal decentralization policy on redistribution, expansion of data set to include underdeveloped countries is needed. In addition, we utilize three proxies to measure the level of redistribution, Gini, labor income, and social welfare expenditure share, cluster or factor analysis for more balanced measure finding is worthwhile for next step studies.

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