The Effect of Regional Government Expenditures and Government Transfers on Income Inequality: Study in Districts/Cities in West Java

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Abstract. This paper examines the effect of local government spending and central government transfer on income inequality. The study was conducted using a panel data model with Fixed Effect model with data samples from 20 cities/districts in West Java during 2013-2017. The results of this study indicate that total local government expenditures in West Java has the effect of increasing the Gini coefficient, which means an increase in income inequality, while government spending in the economic function can reduce the Gini coefficient. This results shows that Local government expenditure allocations in West Java have not been able to support inclusive growth. To encourage inclusive growth, government spending needs to be appropriately allocated, especially prioritized in the economic function, not in other functions such as administrative and service functions

Keywords: Gini ratio · Government spending · Income inequality

1 Introduction

The state budget as a form of state financial management is determined every year by law and implemented for the greatest prosperity of the people. This becomes the main foundation in the management of gvernment finances, that the main purpose of managing state finances is to achieve the welfare of the people. The implementation of the State Budget includes the transfer of funds to the Regional Budget, which has also increased from year to year, where by 2018 it has reached more than 800 trillion rupiah. Increased government spending is expected to be able to influence the improvement of people's welfare achieved by reducing disparities in the level of welfare between groups in society due to differences in the level of ownership and opportunities for the use of economic resources for the private sector (Badrudin, 2012).

Prior studies have found a positive relationship between fiscal decentralization and economic growth (Iimi, 2005) and (Yilmaz, 1999), while others establish no direct relationship (Martinez-Vazquez & McNab, 2003). however, it cannot be denied that government spending in developing countries is an economic stimulus that has an important role in economic growth. economic growth discussed in the last few decades is fair and equitable economic growth (Aoyagi & Ganelli, 2015). The results of the study indicate that redistributive fiscal policy and monetary policy aimed at effective macro stability in promoting inclusive growth. The coefficient of fiscal redistribution

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is significant and positive, which means that the government's redistribution policy is able to drive inclusive growth.

In addition to being classified in the economic classification of government expenditures such as personnel expenditure, goods expenditure and capital spending are also classified based on function. Many public policies are treated as expenditures but actually should be considered as investments, especially those that invest in human resources, both at the individual level and at the level of the individual group. These expenditures include health care, education, and security (Boarini, Causa, Fleurbaey, Grimalda, & Woolard, 2018). the example shows that some redistributive policies, especially health spending and higher education, benefit the poor while at the same time increasing growth through increasing human capital (Benabou, 2000).

The largest example of redistribution was found for Belgium, while Colombia and Peru showed a rather limited overall redistributive effect. Transfers on average reduce income inequality by more than 85 percent, while taxes are responsible for redistribution of 15 percent. in that country, transfers still play a dominant role in reducing the initial income gap. Among all welfare countries, Continental European countries achieved the highest level of reduction in initial income inequality (Wang & Caminada, 2011).

In the short term, higher inequality helps economic performance but reduces the rate of GDP per capita growth further in the future (Halter, Oechslin, & Zweimüller, 2014). Policy reforms that promote growth that tend to reduce income inequality are needed: among them 1) Improving the quality and reach of education, 2) Promoting equality in education, 3) Reducing the gap between work protection on temporary and permanent work (Hoeller, Joumard, & Koske, 2014).

At the local government level, APBD has an important function for the creation of community welfare. Public welfare in general can be measured by increasing per capita income of the population, decreasing poverty and unemployment rates and increasing human development index. Aside from being a stimulus for economic growth, government spending must also be directed at creating an equitable distribution of income for all elements of society. This means that economic growth is not only beneficial for certain groups but must be evenly beneficial for all levels of society. A recent study concluded that the direct and indirect combined effects of income redistribution are 'pro-growth' averages. In this study it was found that the treatment for inequality - redistribution - is no worse for growth than inequality, because some policymakers might worry (Ostry, Berg, & Tsangarides, 2014).

Income inequality is a condition where the income distribution received by the community is unequal. Inequality describes the gap between those who have a high income and those who have a low income. Gini index is the most widely used measure to measure inequality. This is because there is a direct relationship with the Lorenz curve where the gini index measures the extent to which the Lorenz curve departs from the egalitarian line. This is defined as twice the area between the Lorenz curve and the egalitarian line. The Gini index value lies between zero for complete equality and one for complete or most extreme inequality (Shah, 2005). Gini index value of 0 indicates the existence of a perfect income distribution.

Based on data from BPS as of September 2018 the province of West Java has a gini index of 0.405 higher than the average index in Indonesia of 0.384. This condition places West Java province in the top 3 provinces with the highest level of income inequality. BPS data also shows that in the period March 2015 to September 2018, the Gini ratio in West Java Province was still stagnant, even the position in September 2018 increased

compared to the same period the previous year. This shows that the government's efforts in not overcoming the inequality of public income have not been optimal.

On the other hand, the regional government budget in West Java Province continues to increase from year to year. This raises the question whether the local government spending has not been able to overcome the problem of poverty and welfare disparities in the people of West Java Province. This study wants to see empirically whether regional government spending and transfer income from the central government in the Regional Government in West Java has an influence in reducing income inequality as measured by a declining Gini ratio.

2 Theory and Hypothesis Development

Politically, a country with increasing economic growth, where the average income in the economy exceeds the average income, the majority vote tends to support the redistribution of resources from rich to poor. This redistribution may involve explicit transfer payments but can also involve public expenditure programs, such as education and child care, and regulatory policies (Perotti, 1996). in governments that carry out decentralization, the central government transfers to local governments and local governments treat it as transfers of income in their budgets. Redistribution will be carried out by local governments with public expenditure.

Researches try to answer the question how income distribution can influence output growth. In these studies, the possible reverse causes of the level of development towards inequality are recognized but ignored (Perotti, 1996) and (Benabou, 2000). Theoretical models linking income inequality with economic growth through the three channels (Benabou, 2000). The first is the balance of power in the political system. The second channel is socio-political instability, which leads to a decrease in security of property rights. The third channel is the rationing of human capital investment loans due to imperfections in the capital market. Are specialized channels able to get empirical support. The conclusion is that the socio-political instability argument is strongly supported and the interaction between lending constraints and investment in human resources also provides some support while there seems to be less empirical support for explanations based on the effects of redistribution through fiscal policy (Perotti, 1996).

In fiscal policy, a high level of income inequality leads to higher demand for redistribution. this in turn affects growth through the allocation of resources from investment or through taxes that distort the incentives needed to fund redistribution (Tanninen, 1999). Studies show that in poor countries, higher inequality tends to inhibit growth but in rich countries it can actually encourage growth. According to the Kuznets Curve, inequality first increases and then decreases during the process of economic development - emerging as a clear empirical order (Barro, 2000). What effect do various government activities have on inequality? These activities include expenditure programs, especially education and health, transfers, and non-proportional taxes. The level of inequality of the country also determines the income redistribution program through government expenditure, because governments in a more unequal society tend to spend on redistribution programs. This may not be as efficient as an instrument for reducing poverty and reducing inequality because the benefits of public spending can be captured by nonpoor (De Mello & Tiongson, 2006).

In this study, researchers will examine whether local government spending has a positive effect on reducing income inequality

H1: Total local government spending has a positive effect on the Gini Ratio

In terms of government expenditure classifications, does the type of capital expenditure have a positive effect on reducing income inequality

H2: Capital expenditure has a positive effect on the Gini Ratio

In terms of the expenditure function, does spending in the economic and education sectors respectively have a positive effect in reducing income inequality

H3: Spending on Economic function has a positive effect on Gini Ratio

H4: Spending on Education function has a positive effect on the Gini Ratio

In terms of the source of income, does income from transfers have a positive effect on reducing income inequality

H5: Income from transfer has a positive effect on the Gini Ratio

3 Research Method

3.1 Sample and Survey Procedure

The data used in this study are secondary data obtained from the Central Statistics Agency (BPS) of West Java Province and the Directorate General of Fiscal Balance. The data collection method in this study was carried out with documentation, i.e. gathering records / data needed according to the research to be carried out. The data needed is in the form of district / city Gini Ratio in West Java Province as well as data on revenue realization and expenditure of city districts in West Java Province.

The data analysis method used in this study is the panel data model, which is a combination of cross section data from 20 local government and time series from 2013 to 2017. There are three methods that can be used for data processing using panel data, namely: Common effect model, estimating panel data with the OLS method; Fixed effect (FE), adding a dummy model to the panel data; and Random effects, taking into account errors from panel data with the least square method.

3.2 Measures

The panel data regression analysis used in this study requires a model specification test to determine which model is considered appropriate in the function model regression process. From the results of the tests conducted, the right model is the fixed effect model based on the results of the Chow test and Hausman Test which results in both probabilities of less than the 5% significance level (0.05).

The regression function model that will be used is as follows:

$$GINI_{it} = \beta_1 + \beta_2\ TOTBEL_{it} + \beta_3\ CAPEX_{it} + \beta_4\ BECON_{it} + \beta_5\ BEDU_{it} + \beta_6\ TRANS_{it} + e_{it}$$

GINI = Income Inequality
TOTBEL = Total local government spending
CAPEX = Capital Expenditures
BECON = Spending on Economic function

BEDU = Spending on Education function
TRANS = = Income from Central Government Transfers

4 Empirical Result

On average, the city of Bandung had the highest Gini index of 0.440, followed by the city of Tasikmalaya, while the lowest index is in Indramayu Regency. Based on observational data, in general the Gini index in urban areas is indeed higher than the Gini index in rural areas, its mean that in urban areas income inequality is more pronounced than in income inequality in rural areas.

Table 1. Descriptive Statistics.

	GINI	L_CAPEX	L_TRANS	L_EDU	L_ECON	L_TOTBEL
Mean	0.363540	26.79881	27.93679	27.26403	25.52806	28.45559
Median	0.356015	26.82130	28.02988	27.50975	25.59531	28.49431
Maximum	0.477236	28.06399	28.73285	28.42144	27.62151	29.55902
Minimum	0.279878	25.47274	26.77368	23.03965	21.50634	27.18485
Std. Dev.	0.041067	0.604204	0.470165	0.880707	0.881229	0.541704
Skewness	0.326486	0.089586	-0.575630	-1.953733	-1.318869	-0.275653
Sum	36.35399	2679.881	2793.679	2726.403	2552.806	2845.559
Sum Sq. Dev.	0.166964	36.14122	21.88443	76.78890	76.87989	29.05090
Observations	100	100	100	100	100	100

Table 2. The estimation results with Fixed Effect Model.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.066697	0.638900	-3.234777	0.0018
L_CAPEX	0.007266	0.017970	0.404318	0.6871
L_TRANS	0.008655	0.022086	0.391881	0.6963
L_EDU	0.013071	0.007048	1.854520	0.0676
L_ECON	-0.015466	0.006528	-2.369314	0.0204
L_TOTBEL	0.071416	0.027269	2.618930	0.0107

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.763575	Mean dependent var	0.363540
Adjusted R-squared	0.687919	S.D. dependent var	0.041067
S.E. of regression	0.022942	Akaike info criterion	-4.499391
Sum squared resid	0.039475	Schwarz criterion	-3.848098
Log likelihood	249.9695	Hannan-Quinn criter.	-4.235801
F-statistic	10.09271	Durbin-Watson stat	2.547051
Prob(Peterson)	0.000000		

The adjusted R-square value is 0.68% so that simultaneously the independent variable can explain 68% of the dependent variable. From the significance test results, it can be seen that not all independent variables are significant in the model, where Prob. t-statistic> a as the degree of confidence of the estimate used (a = 5% = 0.05). In the regression model above the independent variable Spending on Economic function (L_ECON) and total local government spending (L_TOTBEL) has a significance <0.05 this means that these two variables have a significant effect on the income inequality variable (GINI). While the Capital Expenditure variable (L_CAPEX) and Income from Central Government Transfers (L_TRANS) have not significant to income inequality (GINI).

4.1 Total Local Government Spending

Intercept value of 0.07 means that an increase in government spending by 1 percent will increase the gini index by 0.07 so that H1 is rejected. Based on these results, overall government spending in the districts / cities of West Java actually led to an increase in the gini index, which means increases the income gap. Government spending, which is expected to be a stimulus for economic growth in the regions, has increasingly empirically created a income disparity. This can happen if the output of government spending has not been able to reach the lower classes of society. So we need better spending priorities to create inclusive economic growth.

4.2 Spending on Economic Function

Intercept value of -0.015 means an increase in economic function expenditure of 1 percent will reduce the gini index by 0.015 so that H2 is accepted. Economic function expenditure is government expenditure whose impact is on economic growth and community welfare so that it is expected to create employment opportunities, reduce poverty levels and reduce the public income gap.

As for transfer income from the central government as well as spending in education it has not shown a significant effect on the gini index. In contrast to some previous studies which provide evidence that spending in education can reduce income inequality, the results of this research have not found the same role in West Java. this needs to be further investigated how the role of spending in education in West Java so that it can be more directed towards the results as expected.

5 Conclusions

Previous studies have shown the effect of government spending on economic growth, but how it affects the income gap. does government spending have a role in reducing the income gap or vice versa. The results of this study indicate that total regional government expenditure has an effect on increasing the Gini index, which means that the income gap in the community is higher. This can be understood because in general, government spending does not only benefit the lower class, but even the middle and the upper class have more benefit from government spending. Meanwhile, government

spending in West Java that specifically allocated to economic functions has the opposite effect, which can reduce the Gini index. This is a positive result in encouraging inclusive growth in West Java Province

Based on these empirical results, the government needs to prioritize budget allocations for economic functions compared to budget allocations for service and administrative functions. Appropriate budget allocation is expected to encourage regional economic growth that is inclusive and equitable and can be felt by all citizens in the region.

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Appendix

Appendix 1. Gini Index per District / City in West Java.

District/City	2013	2014	2015	2016	2017	Average
Kota Bandung	0,415	0,477	0,441	0,438	0,428	0,440
Kota Tasikmalaya	0,394	0,371	0,485	0,416	0,422	0,418
Kota Bogor	0,405	0,363	0,473	0,425	0,410	0,415
Kota Cirebon	0,378	0,404	0,413	0,404	0,411	0,402
Kab Bogor	0,382	0,385	0,418	0,401	0,384	0,394
Kota Cimahi	0,404	0,388	0,395	0,416	0,365	0,394
Kota Sukabumi	0,341	0,359	0,428	0,417	0,403	0,390
Kota Depok	0,394	0,365	0,400	0,401	0,352	0,382
Kab Bandung	0,344	0,374	0,397	0,399	0,391	0,381
Kab Purwakarta	0,388	0,369	0,352	0,356	0,389	0,371
Kota Bekasi	0,354	0,329	0,410	0,392	0,351	0,367
Kota Banjar	0,341	0,320	0,419	0,367	0,381	0,366
Kab Sumedang	0,337	0,328	0,349	0,367	0,387	0,354
Kab Bandung Barat	0,309	0,326	0,339	0,357	0,405	0,347
Kab Majalengka	0,322	0,342	0,353	0,356	0,351	0,345
Kab Kuningan	0,325	0,370	0,344	0,332	0,320	0,338
Kab Ciamis	0,332	0,310	0,332	0,333	0,364	0,334
Kab Subang	0,331	0,314	0,333	0,348	0,344	0,334
Kab Garut	0,309	0,330	0,306	0,347	0,369	0,332
Kab Karawang	0,319	0,303	0,341	0,344	0,348	0,331
Kab Bekasi	0,329	0,328	0,345	0,309	0,336	0,329
Kab Cirebon	0,321	0,284	0,328	0,356	0,355	0,329
Kab Sukabumi	0,301	0,321	0,356	0,329	0,334	0,328
Kab Cianjur	0,285	0,280	0,281	0,361	0,348	0,311
Kab Tasikmalaya	0,317	0,294	0,304	0,304	0,319	0,307
Kab Indramayu	0,27	0,281	0,288	0,262	0,291	0,280