



LOCAL GOVERNMENT EXPENDITURE, ECONOMIC GROWTH AND INCOME INEQUALITY IN SOUTH SULAWESI PROVINCE

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Abstract

This paper investigates the effect of local government expenditure on economic growth and the effects of local government expenditure and economic growth on income inequality over the period (2008-2013). We used cross-section and time series data (pooled data) in 24 regencies/ cities in South Sulawesi. To achieve this, were used Simultaneous equations with recursive model. The results suggest that the local government expenditure has a positive and significant effect on economic growth and income inequality. While, economic growth has a negative and significant effect on income inequality. Therefore, its recommended government should direct its expenditure toward the productive sectors such as agricultural sector because this sector more absorbed than other sectors.

Key words

Local Government Expenditure; Economic Growth; Income Inequality; Recursive Model.

INTRODUCTION

Government expenditure is an important instrument for a government to control the economy. Economists argued that increases in government expenditure be effective instrument for increasing the economic growth. Therefore, government expenditure in the form of capital expenditure can give positive contribution to economic growth. Endogenous growth model (Barro, 1990), a productive Government expenditure will affect the rate of long-term growth. Government expenditure in the form of capital expenditures included the provision of infrastructure such as electricity, transportation, education and health. For example, the government expenditure on health and education raises the productivity of labor and increase the growth of national output. However, some scholars did not support the statement that the increase of government expenditure will create economic growth. They stated that the

increase on government expenditure will reduce the economic performance overall. For instance, in the attempt to finance rising expenditure, government may increase taxes. Higher income tax discourages individual from working for long hours or even searching for jobs. This will then reduce income and aggregate demand. Thus the government actions sometimes resulted in misallocation of resources and hinder the growth of national output. In fact, studies by Barro (1991), and Engen and Skinner (1992), suggested that large government expenditure have negative impact on economic growth.

The relationship between government expenditure and economic growth continues to results in the series of controversy among economic. Some authors argue that the impact of government expenditure on economic growth is negative or no significant (Loto, 2011; Ndjokou, 2013; Taban, 2010; Vu Le & Suruga, 2005). Others believe that impact is positive and significant (Alexiou, 2009; Chude & Chude, 2013; Nasiru, 2012; Okoro, 2013; Olulu et al, 2014).

Government expenditure is the means of government intervention in the economy who are considered most effective. During this time, the effectiveness of government expenditure was be measured by how much economic growth. Successfully advisability of economic development of a region, can be seen from the level of the community welfare marked by increasing consumption due to increased income. Results of research and statistical data, shows that despite the economic growth increased rapidly, but it still happens that high disparities.

In other cases, the discussion of inequality and economic growth issue continues and the main consensus comes from the idea that the income distribution in a country is traditionally assumed to shift from relative equality to inequality and back to greater equality as the develop country. Therefore, inequality will rise as some people move away from prevailing traditional activities, which yield a low marginal product, into more productive venture, i.e. as well known Kuznets hypothesis (Kuznets, 1955).

Based on the problems above, the focus of this study is the effect of local government expenditure in the form of capital expenditure to economic growth and income inequality regency/city in South Sulawesi Province.

THEORETICAL AND EMPIRICAL REVIEW

Linkage between Government expenditure and Economic Growth

Economic theory has shown how government expenditure may either be beneficial or detrimental for economic growth. In traditional Keynesian macroeconomics, many kinds of public expenditure, can contribute positively to economic growth through multiplier effects on aggregate demand. From the Keynesian thought, public expenditure can contribute positively to economic growth. Hence, the increasing the



government consumption was likely leading to an increase in employment, profitability and investment through multiplier effects on aggregate demand. As a result, government expenditure augments the aggregate demand, which provokes an increased output depending on expenditure multipliers (Chude & Chude, 2013).

From an empirical perspective of the evidence generated becomes more confusing as a number of studies favor one or the other approach. The main focus of this paper will be briefly reviewed the existing empirical literature rather than explicate the intricacies of theoretical issues. A number of studies have been focused on the relation between government expenditure and economic growth in developed and developing countries like Indonesia. The results varied from one study to another. Barro (1991) in the cross section study of 98 countries for a period spanning from 1960 to 1985, used average annual growth rates in real per capita GDP and the ratio of real government consumption to concluded real GDP that the relation between economic growth and government consumption was negative and significant. Additional evidence suggested that growth rates were positively related to measures of political stability and inversely related to a proxy for market distortions. Further estimates provided by Engen and Skinner (1992) for 107 countries over the period 1970-1985, suggested that the increasing a balanced-budget in government expenditure and taxation is predicted to reduce output growth. The same thing, Taban (2010) examined government expenditure and economic growth for the period 1987:Q1 to 2006:Q4 and applied bounds testing approach and MWALD Granger causality test. The author found that the share of government expenditure and share of investment to GDP are negative impacts on economic growth in the long term.

Moreover, Ndjokou (2013) evaluated the link between fiscal policy and growth. For this purpose, he evaluated the influence of the level of public expenditures and revenues as well as the composition of the budget on economic growth. Relying on data provided by African Development Indicators, our sample is taken of 9 countries of the CFA Franc Zone over the period 1990-2010. By using focus on panel data analysis use general least square (GLS) technique, his analysis leads to the following the public expenditures significantly reduced growth.

The findings above, however, have been challenged by numerous other works. Alexiou (2009), investigated the relationship between economic growth and government expenditure in the South Eastern Europe. For the first time two different panel data methodologies has been applied to seven transition economies in the South Eastern Europe (SEE), generating significant results, which, if considered, may enhance the economic performance of the countries in the region. More specifically, the evidence generated indicate that four out of the five variables used in the estimation i.e. government expenditure on capital formation, development assistance,

private investment and trade-openness all have positive and significant effect on economic growth.

Vu Le and Suruga (2005) investigated the simultaneous impact of public expenditure and foreign direct investment (FDI) on economic growth from a panel of 105 developing and developed countries for the period 1970 to 2001 and applied fixed effects model and threshold regression techniques. Their main findings were categorized into three: FDI, public capital and private investment play roles in promoting economic growth. Secondly, public non-capital expenditure has a negative impact on economic growth and finally, excessive spending in public capital expenditure can hinder the beneficial effects of FDI.

The study by Loto (2011), investigate the growth effect of government expenditure on economic growth in Nigeria over the period of 1980 to 2008, with a particular focus on sectorial of expenditure. He investigates the growth effects of government expenditure in Nigeria over the period of 1980 to 2008, with a particular focus on sectorial expenditures. Five key sectors chosen were (security, health, education, transportation, and communication and agriculture). The variables be tested for Stationary-ties and Co-Integration analysis also the carried out using with the Johansen Co-Integration technique, Error-Correction test also performed. The results showed that in the short-run, expenditure on agriculture found negatively related to economic growth. The impact of education though also negative was not significant. The impact of expenditure on health also found positively related to economic growth. Though expenditures on national security transportation and communication were positive related to economic growth, the impacts were not statistically significant.

Moreover, Chude and Chude (2013), investigates the effects of public expenditure in education on economic growth in Nigeria over a period from 1977 to 2012, with particular focus on disaggregated and sectorial expenditures analysis. Government expenditures are very crucial instruments for economic growth at the disposal of policy makers in developing countries like Nigeria. The objective of this study is to determine the effect of public expenditure on economic growth in Nigeria using Error Correction Model (ECM). The study used Ex-post facto research design and applied time series econometric technique to examine the long and short run effects of public expenditure on economic growth in Nigeria. The results indicate that Total Expenditure Education is highly and statistically significant and have positive relationship on economic growth in Nigeria in the long run. The result has an important implication in terms of policy and budget implementation in Nigerian.

Okoro (2013), using time series data of 32 years period (1980-2011), investigated the impact of government expenditure on the Nigerian economic growth. Employing the ordinary least square of multiple regression analysis to estimate the model specified. Real Gross Domestic Product (RGDP) was adopted the dependent variable while government capital expenditure (GCEXP) and government recurrent expenditure (GREXP) represents the independent variables. With the application of Granger



Causality test, Johansen Co-integration Test and Error Correction Mechanism, the result shows that there exists a long-run equilibrium relationship between government expenditure and economic growth in Nigeria. The short-run dynamics adjust to the long-run equilibrium at the rate of 60% per annum.

Nasiru (2012) investigates the relationship between government expenditure (disaggregated into capital and recurrent) and economic growth in Nigeria over the period (1961-2010). It employs the Bounds Test approach to co-integration based on unrestricted Error Correction Model and Pair Wise Granger Causality tests. The results from the Bounds Test indicate that there exists no long-run relationship between government expenditure and economic growth in Nigeria only when real GDP as dependent variable. In addition, the causality results reveal that government capital expenditure granger causes economic growth. While, no causals relationship was be observed between government recurrent expenditure and economic growth.

Another study by Olulu et al, (2014) investigates the empirical relationship between government expenditure and economic growth in Nigeria. The ordinary least square (OLS) was be applied to ascertain the short-run relationship between variables, however, the Augmented Dickey Fuller (ADF) test, was used to examine long-run relationship between variables in the equation. Government expenditures disaggregated unto total expenditures, public debt expenditure, expenditure on health and government expenditure on education. Results of the test show that there is an inverse relationship between government expenditures on health and economic growth; while government expenditure on education sector, is seen to be insufficient to cater for the expending sector in Nigeria. It also discovered that government expenditure in Nigeria could increase foreign and local investments.

Linkage between Economic Growth and Inequality

In recent decades, economists are very interested to see the relationship between growth and inequality. However, there are different views on these linkages. Most economists, views that the relationship between the two is a causal relationship reciprocal: inequality affects o the growth and reversed the growth was also affects inequality (Jha, 1999; Barro, 2000). Starting with the Galor and Zeira (1993), followed by Alesina and Rodrik (1994), Perotti (1994), Persson and Tabellini (1994), Li and Zou (1998), Forbes (2000), Arjona et al, (2001), Lundberg and Squire (2003), Helpman (2004), Tachibanaki (2005), Sukiassyan (2007), Aghion and Howitt (1998), Huang et al, (2009), further supports the view that inequality affects growth. The theoretical basis is the income inequality will affect the amount of investment, both physical and human, which will influence the rate of growth.

Despite the extensive existing literature in income inequality and economic growth, there remains considerable disagreement on the effect of inequality on economic

growth. Existing literatures find either a positive or a negative relationship. There is a voluminous theoretical literature on the impact of inequality on economic growth. In accordance with the theoretical literature, the empirical literature also produces ambiguous findings. For instance, Alesina and Rodrik (1994), Perotti (1994), Persson and Tabellini (1994), Lundberg and Squire (2003); Helpman (2004), Tachibanaki (2005), and Sukiassyan (2007) that is, the relationship between inequality and growth results to be negative. However, the above findings have consensus opposite (Li & Zou, 1998; Aghion & Howitt, 1998; Forbes, 2000; Arjona et al, 2001; Huang et al, 2009), inequality stimulates economic growth.

Barro (2000) concludes that the effect of income inequality on economic growth is different contingent on the state of economic development. Income inequality in poor countries retards economic growth, but income inequality in rich countries encourages economic growth. Using the panel data, Barro (2000), shows that the effect of income inequality on economic growth was negative in countries with GDP per capita below 2070, and is conversely positive in countries with GDP per capita over 2070. Examining the two pairs of samples mentioned above, if we regard South American countries and Asian countries as examples of developing countries and the France and United State as examples of developed countries, the case of these samples is consistent with Barro (2000)'s conclusion. Moreover, Chan et al (2014) examines the simultaneous evolution of income inequality and economic growth using the provincial data from China. The VAR and system-GMM (ala Arellano–Bond) statistical methods are employed. They find that inequality reduction from faster provincial growth is statistically insignificant. But, high income inequality within the province raises the provincial growth rate.

Another study by Risso and Carrera (2012), study the long-run relationship between economic growth and income inequality in China during the pre-reform (1952-1978) and post-reform (1979-2007) periods, it will be done via cointegration analysis. The result show that significant and positive long-run relationship between inequality and economic growth in both periods was found. Holzner (2011), analyses the joint determinants of inequality and growth with a special emphasis on public spending structures in transition. He find especially government expenditures on subsidies to be negatively correlated with both inequality and growth, as more generally government expenditures seem to act counter-cyclically and inequality reducing.

However, on the other hand economists most argued precisely the opposite. They further believe that growth that creates inequality (Kuznets, 1955; Ravallion, 1995; Deininger & Squire, 1998; Dollar & Kraay, 2002; Adams, 2003). Their theoretical argument is the growth would lead to any community groups have benefited, but the group that controls the factors of production and capital usually benefit relatively larger than the other groups (workers).

Peters (2010) examined how sectoral growth in India affects inequality with an extended analysis of the Social Accounting Matrix (SAM). The results show that only



agricultural growth reduces inequality, while growth in heavy manufacturing and services sectors raises inequality. His study supports Ravallion and Datt (1996) show that growth in the primary and tertiary sector reduced poverty, while growth in the secondary sector did not. They relate this to growth of the capital-intensive production in manufacturing, which was not beneficial to the poor. Similar conclusions was drawn in Khan and Thorbecke (1989) and James and Khan (1997). Their study confirmed that traditional labor-intensive technologies are more egalitarian than modern capital-intensive technologies. The reason is the production under traditional technology creates more employment, directly and indirectly, and more income for rural households.

Acemoglu and Robinson (2002) found that growth may results in an “East Asian Miracle” with high output and low inequality or with low output and high inequality. Different findings Huang et al, (2009), investigated the long-run effect of growth volatility on income inequality using a comprehensive panel of annual US state-level data during 1945-2004. Using the pooled mean group (PMG) estimator, they find evidence supporting the hypothesis that larger growth volatility positively and significantly associated with higher income inequality.

Burtless (2003) compared economic growth and inequality between the US and other G7 countries and found that the US has more economic growth and more inequality than these countries. He attributed the US situation to less regulation in the market place and less assistance to the needy.

METHODOLOGY AND DATA

This study was conducted to determine the relationship of local government expenditure, economic growth and inequality by using panel data in 24 regencies / cities in South Sulawesi Province during 2008-2013. To investigate that, the study uses Simultaneous equations with recursive model (Gujarati, 2003). The general specifications equation models used in this study are:

$$Y_1 = \beta_1 + \beta_2X + \mu_1 \tag{1}$$

$$Y_2 = \beta_3 + \beta_4X + \beta_5Y_1 + \mu_2 \tag{2}$$

Where, X is the government expenditure (GS), Y₁ is the economic growth (EG) and Y₂ is the income inequality (INEQUALITY). With, cov (μ₁, μ₂) = 0, that error to the same period in different equations are uncorrelated (zero contemporaneous correlation).

To avoid differences in understanding the variables studied, the operational definition of each variable in this study is as follows:

1. Local Government expenditure referred to in this research is the realization of capital expenditure regencies and cities in South Sulawesi province. Capital

expenditure measured from ratio of capital expenditure to local government expenditure.

2. Economic growth is the relative change in the real value of gross domestic product by counties and cities within a given period. The magnitude of the economic growth be expressed in terms of percent.
3. Income inequality is the gap of income per capita between regencies / cities were be measured using Entropy Theil Index (Ying, 2000) as follows:

$$I(y) = \sum \left(\frac{y_j}{Y} \right) \times \text{Log} \left(\frac{\frac{y_j}{Y}}{\frac{x_j}{X}} \right) \quad (3)$$

Where:

- I(y) = Entropy Theil Index
- Y_j = Income per capita of the regency/city j
- Y = Income per capita Province
- X_j = Total population of the regency/city j
- X = Total Population Province

EMPICAL RESULT AND DISCUSSION

Refers to a system of equations and econometric estimation results in the Table 1. The discussion in this study is divided into two parts: the effect of local government expenditure on economic growth and the effect of local government expenditure and economic growth on income inequality.

TABLE 1. RESULT OF RECURSIVE MODEL

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	6.699909	0.359805	18.62093	0.0000*
C(2)	0.024248	0.014236	1.703319	0.0496**
C(3)	17.10242	3.969957	4.307960	0.0000*
C(4)	0.468801	0.085527	5.481344	0.0000*
C(5)	-1.867106	0.499091	-3.741014	0.0002*
Determinant residual covariance		142.1621		
Equation: EG=C(1)+C(2)*GS				
Equation: INEQUALITY=C(3)+C(4)*GS+C(5)*EG				

Note: (*) are indicates 1% level of significant (0.001) (**) are indicates 5% level of significant (0.005)

The Effect of Local Government Expenditure on Economic Growth

The estimation results influence of local government expenditure on economic growth as shown in Table 1, shows that local government expenditure has a positive and significant effect on economic growth regencies / cities in South Sulawesi province. This is shown by the local government expenditure estimated coefficient is 0.0242 and statistically significant at the 5% level (probability 0.0496). This value indicated that



each increase in local government expenditure by 10% would increase economic growth regencies / cities with 0.242% in South Sulawesi Province.

The estimation results of the influence of local government expenditure on economic growth was shown in Table 1, show that local government expenditure has a positive and significant effect on economic growth in the regencies / cities in the province of South Sulawesi. This is shown by the coefficient estimates of local government expenditure is 0.024 and significantly statistically significant at 5% level (probability 0.0496). This value implied that any increase in local government expenditure by 10% would increase economic growth regencies/city by 0.24% in South Sulawesi Province.

These findings support the results of a study conducted by Vu Le and Suruga (2005), Alexiou (2009), Chude and Chude (2013) who found that the increase in government expenditure will boost economic growth. The findings fit the theory Keynesian, public expenditure can contribute positively to economic growth. Hence, the increasing the government consumption is likely to lead to an increase in employment, profitability and investment through multiplier effects on aggregate demand. As a result, government expenditure augments the aggregate demand, which provokes an increased output depending on expenditure multipliers.

However, these results differ from the findings of Barro (1991), Engen and Skinner (1992), Taban (2010) and Ndjokou (2013) which states that the government expenditure has a negative impact on economic growth. While the results study by Nasiru (2012) do not support them since he did not found correlation between government expenditure and economic growth.

The Effect of Local Government Expenditure and Economic Growth of Income Inequality

The estimation results of the influence of local government expenditure and economic growth on income inequality was shown in Table 1. The estimation in Table 1 show that local government expenditure has a positively and significant effect on inequality. This was indicated by the regression coefficient of local government expenditure amounting to 0.4688 with statistical significance at 1% level (probability 0.0000). This value indicates that each 10% increase in local government expenditure will increase 4,688 % of income inequality. It was indicates that the regional development financed from local government expenditure cannot be enjoyed by all segments of society. One reason is the local governments tend to pursue economic growth without regard to inequality, as an example of local government expenditure to support development in the agricultural sector was still be relatively small compared to other sectors. While the agricultural sector to absorb more labor compared to other sectors. Resulting in income inequality occurred in people who live in towns and villages as well as those working in the agricultural sector with other sectors.

While the estimation results influence of economic growth on income inequality (Table 1), it shows that economic has negative and significant effect on income inequality regencies / cities in South Sulawesi province. This is shown by the economic growth estimated coefficient (-1.867) which is statistically significant at 1% level (probability 0.0002). This value indicates that each increase in economic growth by 1% would reduce income inequality regencies / cities with 1.867% in South Sulawesi Province. This study supports the results of Peters (2010) who examined how the growth affects income inequality and showed that only agricultural sector growth reduces inequality. So did Ravallion and Datt (1996) showing that the growth in the primary and tertiary sector reduced poverty. Given the economic structure of South Sulawesi province is dominated by the agricultural sector with a 35.84% contribution to Gross domestic regional product. So did the labor force in the province of South Sulawesi more absorbed in the agricultural sector than in other sectors. Activities in the agricultural sector more use of labor- intensive than capital intensive. Thus, the results of this study are also in accordance with Khan and Thorbecke (1989) and James and Khan (1997), confirms that traditional labor-intensive technologies are more egalitarian than modern capital-intensive technologies. The reason is the production under traditional technology creates more employment, directly and indirectly, and more income for rural households. With increasing of production in the agricultural sector will lead to increase of people's income, so the inequality will reduce.

CONCLUSION

In this paper, we examined the relationship between local government expenditure, economic growth and income inequality. Existing literature results, both positive and negative, are reported. There remains a disagreement on effect of local government expenditure on economic growth and inequality and effect of the economic growth on in economic growth.

The main results of this paper are the following:

- (i) The local government expenditure has positive and significant effect on economic growth regency/city in South Sulawesi Province. The findings fit the theory Keynesian that public expenditure can contribute positively to economic growth;
- (ii) The local government expenditure effect on income inequality was positive and significant; and
- (iii) There is negative and significant effect of economic growth on income inequality.

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