



Analysis of Short and Long Term Effect on Government Expenditure Realization and Income Disparity Toward Poverty in Aceh Province, Indonesia

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Abstract

Implementing the Regional Revenue and Expenditure Budget (APBD) policy and, at the same time, reducing income disparity is a tangible manifestation and success of local governments in keeping the poverty level low. This study analyzes the short-term and long-term effects of variables government expenditure realization and income disparity toward poverty in Aceh Province, Indonesia, during the 2010-2019 period using the Auto-Regressive Distributed Lag (ARDL) approach. This study found that both independent variables have no significant effect on the short term but significantly affect the long term. Government expenditure realization is significant at error level 1% while income disparity is found significant at error level 5% toward poverty in the long term. Also, both government expenditure realization and income disparity positively affect poverty in the long term. Based on the study findings, this study can assist the policy maker in formulating a strategic plan to reduce the poverty rate in Aceh Province, Indonesia.

Keywords: Poverty, Government Expenditure, Income Disparity, Auto-Regressive Distributed Lag (ARDL)

1. Introduction

Humans are the main capital in national development towards inclusive and equitable development throughout Indonesia (Dimas, 2022). The National Medium-Term Development Plan (RPJMN) 2020-2024 contains several main national development agendas. It aimed to improve the quality and competitiveness of human resources and form human resources who are intelligent, adaptable, innovative, skilled, and have a good personality to alleviate the high poverty rate in Indonesia (Sofyan et al., 2021). In line with national development goals, the Government of Aceh (Fadliansah et al., 2021), in the Aceh Medium Term Development Plan (RPJMA) 2017-2022, has formulated policies related to poverty with the theme of "stimulating the growth of agro-industry and creative industries, increasing the competitiveness of human resources and developing an integrated infrastructure to create employment opportunities, reducing poverty and disparities between regions." The main objective of the Aceh Government's policy is poverty alleviation with the goals to be achieved, namely increasing food security and improving the welfare of farmers and fishers.

The problem of poverty has become a problem for provinces and urban districts in Indonesia. The national poverty rate is influenced by high poverty in several provinces such as Papua (26.55%), West Papua (21.51%), East Nusa Tenggara (20.62%), Maluku (17.65%), Gorontalo (15.31%), and Aceh (15.01%), (BPS, 2020). In particular, the average poverty rate in Aceh in 2014-2019 is still far above the national average of 16.67%, nationally at 10.30%. The current poverty rate in Aceh Province is very concerning. Even from 2015 (17.08%) to 2019 (15.53%), it could only decrease by 1.91%. Despite the decline, Aceh Province remained the province with the highest poverty rate in Sumatra in 2019 (BPS, 2020).

Implementing the Regional Revenue and Expenditure Budget (APBD) policy is a tangible manifestation and success of local governments in providing public services to the community. Therefore, the APBD is directed to various fields of development, especially community empowerment plans, so that the community can enjoy the benefits of regional development. The ultimate goal is to improve the community's standard of living and welfare.

The inequality that occurs in an area will encourage the region to work hard to improve the quality of life so that it is not far from the surrounding area. As a result, these areas will compete with the surrounding areas to improve the quality of life of their people, thus having a positive impact on the inequality that occurs. In addition to the positive effects, the increase in inequality between regions also negatively impacts. These negative effects are manifested in economic inefficiency, weakened social stability and solidarity, and high levels of inequality which are generally considered unfair (Kurniawan and Managi, 2018).

The development of a country is not always uniform in space, some areas grow fast, and some areas grow slowly (Wintara et al., 2021). Fair distribution of income needs to be considered for regional development because income inequality will negatively impact economic growth, which leads to a decrease in the welfare of people in an area. The development of the income gap between Aceh Province and the national level over the last ten years shows a significant difference (Pusra et al., 2021). During the 2016-2019 period, Aceh's Gini index experienced a positive trend, getting smaller from 0.333 to 0.319. Although higher than Aceh, the national Gini index also improves from 2014 to 2019, declining from 0.413 to 0.382. Overall, disparities in Aceh are lower than national disparities.

Inequality in developing areas encourages improving the quality of life and keeping it commensurate with other areas. The occurrence of inequality also positively impacts the regions because these regions seek to enhance the quality of life. Besides the positive impacts, there are also negative impacts that result in greater inequality between regions. The negative effects include economic inefficiency, weakened social stability, and solidarity. Thus, high inequality is widely regarded as injustice (Kurniawan and Managi, 2018). In addition, regional inequality also results in labor and capital transfers from disadvantaged areas to more developed and developed areas (Cherodian and Thirlwall, 2013).

Research about this issue is already a lot in literature, Amalia et al. (2015) investigate the effects of government spending on poverty in West Sulawesi Province, Indonesia. Also, research by Suwardi (2011) tries to determine the effect of local government spending and agricultural productivity on poverty in Indonesia. Nisa et al. (2020) aim to determine the effect of income disparity on poverty in the Bangka Belitung Islands Province, Indonesia. Also, Ginting (2015) researched the influence of regional disparity on poverty in Indonesia. The poverty conditions in Aceh Province are phenomena from the background of the current problems. It needs a more detailed and thorough formulation to be analyzed. The researcher tries to give more literature regarding this issue in the study about the short and long-term effects of government expenditure realization and income disparity toward poverty in Aceh Province. Hoped findings from this research can give policymakers more ingredients to formulate a strategic plan to reduce the poverty rate in Aceh Province, Indonesia.

2. Literature Review

The poverty line is a reference to explain the amount of expenditure to meet the needs of a person's life. The size of the poverty line from one country to another is different. Therefore, no poverty line is generally applicable. It is due to the location and standard of living needs that differ from one region to another. The cause of poverty is caused by several factors, including economic backwardness in an area. The poor population in a country depends on the sub-system of the agricultural sector, traditional production methods, and apathetic behavior towards the environment (Miranti, 2010). Government spending is instrumental to the results created to benefit many people's lives. Where the government has determined an approach to purchasing goods and services, government spending reflects the costs incurred to realize the arrangement.

The realization of the budget is a report that compares the revenue and expenditure budget with its completion, which shows compliance with the rules and regulations (Erlina and Muda, 2017). The Gini index is the level of equality calculated by comparing the range between the diagonals, the Lorenz curve divided by the triangle area under the diagonal. The Gini index ranges from zero to one. If the Gini index value is close to zero, it indicates a common imbalance, while if the Gini index value is close to one, it means a high inequality (Saudi et al., 2019).

Saputra (2018) uses government variables, human resource investment expenditures, and government material resource expenditures per capita as determinants of poverty levels. From the expenditure side, poverty alleviation and income redistribution can be seen through three sets of government budget allocations, namely (1) direct subsidies or private subsidies for low-income households and (2) price subsidies and commodity subsidies for household needs, especially for households—commodity subsidies for low-income families. Basic needs, and (3) Direct government spending on public services and infrastructure, especially in welfare, health, and education, which is prioritized for low-income families.

Elimination of poverty and increasing inequality in income distribution is one of the important development issues facing developing countries. As for the opinion expressed by Saudi et al. (2019), the impact of income inequality on poverty is influenced by population growth. Population growth often has a negative impact on the poor, especially those who are very poor. Most low-income families have many members, and the economic situation of the poor worsens due to income inequality or increased welfare. One of the causes of poverty is an unequal pattern of resource ownership, leading to an unequal distribution of income.

Some studies about this issue, such as research by Amalia et al. (2015), aim to determine the effect of government spending on poverty in West Sulawesi Province, Indonesia. The objects of this research are district, provincial, and central government expenditures, economic growth, employment opportunities, and poverty. This study uses the SEM

(Structural Equation Modeling) method. The study results indicate that district government expenditures have a positive and significant effect on the poverty level, but indirectly, not significantly on the poverty level. Provincial government spending, either directly or indirectly, has a negative and significant impact on the poverty level. Central government spending on poverty directly has a negative and insignificant effect.

Meanwhile, indirectly, it has a positive and insignificant effect on the poverty level in the West Sulawesi Province, Indonesia. Suwardi (2011) aims to determine the relationship between local government spending, agricultural productivity, and poverty in Indonesia from 2005 to 2008. Using the econometric panel models, this study finds evidence that local government spending on infrastructure and education significantly affects agricultural productivity and poverty. Based on the above problem, the results of quantitative analysis with panel regression research data show that regional disparities and agglomerations show a positive and significant impact on poverty reduction in the country. It is concluded that the poverty rate in Indonesia has decreased, in line with the decline in regional disparities. The Williamson Index shows the reduction in regional disparities. In addition, GRDP and regional investors have a negative and significant effect on poverty alleviation.

3. Materials and Methods

3.1. Materials

This research aims to determine the short and long-term effects of government expenditure realization and income disparity toward poverty in Aceh Province, Indonesia. This study's data type is panel data of 23 districts/cities in Aceh Province, Indonesia, from 2010 to 2019.

3.2. Methods

3.2.1. Auto Regressive Distributed Lag (ARDL)

The ARDL method analyzes whether the independent variable affects the dependent variable both in the short term and long term. The advantage of the ARDL method compared to other methods is that the ARDL method is unbiased and can be applied to research with a small number of observations (Gujarati, 2004). ARDL model in this study is formulated with the following notation:

$$PV_{it} = \mu' + \phi_1 GE_{it} + \dots + \phi_q GER_{it-q} + \phi_2 ID_{it} + \dots + \phi_q ID_{it-q} + e_t \quad (1)$$

which are,

PV_{it}	= Poverty in district/city i at year t
GE_{it}	= Government Expenditure Realization in district/city i at year t
ID_{it}	= Income Disparity in district/city i at year t
μ'	= Constant;
ϕ_1, ϕ_2	= Estimated coefficient;
e_t	= Error term;

4. Results and Discussion

4.1. Estimation Results of Auto-Regressive Distributed Lag (ARDL)

Before estimating the data with the ARDL approach, first, we need to conduct a stationarity test. The test in this study uses the Levin, Lin, and Chu approach. The ARDL method required all variables to be stationary at 1st difference.

. **Tabel 1.** Estimation Results of Stationarity Test

	P-value at level	P-value at 1st difference	Conclusion
Poverty	0.1256	0.0000	Stationer
Government Expenditure Realization	0.0000	0.0000	Stationer
Income Disparity	0.0000	0.0000	Stationer

Table 1 shows that all variables were stationary at 1st difference. These results conclude that the estimation of the effect of government expenditure realization and income disparity toward poverty for the short term and the long term using the ARDL approach can be done.

Tabel 2. Estimation Results of Cointegration Test

	Statistic	Conclusion
Panel ADF-Statistic	-2.295772	0.0108
Group ADF-Statistic	-2.797395	0.0026

Source: Eviews

Table 2 displays the cointegration test to find whether there is cointegration between variables. In other words, the former model has a balance from short to long term using the Dickey-Fuller approach. Based on the estimation results, the probability value is lower than 0.05, indicating a long-term equilibrium of the ARDL model formed. It suggests that the variables of poverty, government expenditure realization, and income disparity have a long-term relationship.

Tabel 3 Estimation Results of Auto-Regressive Distributed Lag (ARDL) Short Run and Long Run

Short Run		
Variable	Coefficient	Prob.
COINTEQ01	-0.027915	0.0121
GER	-0.004862	0.3930
IC	-1.527965	0.3883
C	-3.416299	0.0019
Long Run		
Variable	Coefficient	Prob.
GER	0.911820	0.0073
IC	106.065900	0.0493

Source: Eviews

Table 3 indicates that both independent variables, namely government expenditure realization and income disparity, are not significant in the short term but significant in the long term toward poverty. Government expenditure realization is found significant at level 1%, while income disparity is significant at level 5% toward poverty in the long term. Likewise, the CointEq value was significant at the 1% test level, which indicates a short-term to long-term cointegration in the ARDL model. The CointEq coefficient is -0.027915, which explains that the formed model will be heading towards equilibrium at 2.79% per year.

4.2. Discussion

The government expenditure variable was found not significant in the short term but significant in the long term toward poverty. It follows the theory where the government expenditure variable effect on poverty is usually seen in the long term. However, the coefficient value obtained is positive at 0.911820, which indicates that every 1% increase in government expenditure will also increase the poverty rate by 0.912%. Vice versa, every 1% decrease in government expenditure will also decrease the poverty rate by 0.912%. Nonetheless, these findings align with studies by Amalia et al. (2015) and Suwardi (2011) that also found government expenditure has a significant effect on poverty.

The income disparity variable was also insignificant in the short term but significant in the long term toward poverty. Like government expenditure, income disparity is also one of the variables whose effects are usually seen in the long term toward poverty. The coefficient value also obtained positive is 106.065900, which indicates that every increase in the Gini ratio index as a measure of income disparity by 1 value will also increase the poverty rate percentage by 106.07. This figure is certainly very irrational considering that changes in the Gini ratio index are calculated per 0.001. Hence, the interpretation of the actual estimation results is that every increase in the Gini index ratio 0.001 value will also increase the poverty rate by 0.11%. And vice versa, every decrease in the Gini index ratio 0.001 value will also decrease the poverty rate by 0.11%. This finding is in line with some previous studies, such as research by Nisa et al. (2020) and Ginting (2015), which found that income disparity significantly affects poverty.

5. Conclusion

This study analyzes the short-term and long-term effects of variables government expenditure realization and income disparity toward poverty in Aceh Province, Indonesia, during the 2010-2019 period using the Auto Regressive

Distributed Lag (ARDL) approach. The estimation results found that both independent variables have no significant effect in the short term but have a significant effect in the long term. Government expenditure realization is found significant at an error level of 1% toward poverty, while income disparity is found significant at an error level of 5% toward poverty in the long term. Estimation result shows that both government expenditure realization and income disparity positively affect poverty in the long term. Based on these findings, it is hoped the policy maker will formulate a strategic plan to reduce the poverty rate in Aceh Province, Indonesia.

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