

## GOVERNMENT SPENDING (ECONOMY, SOCIAL PROTECTION, HEALTH, EDUCATION) ON INCOME INEQUALITY IN WEST JAVA

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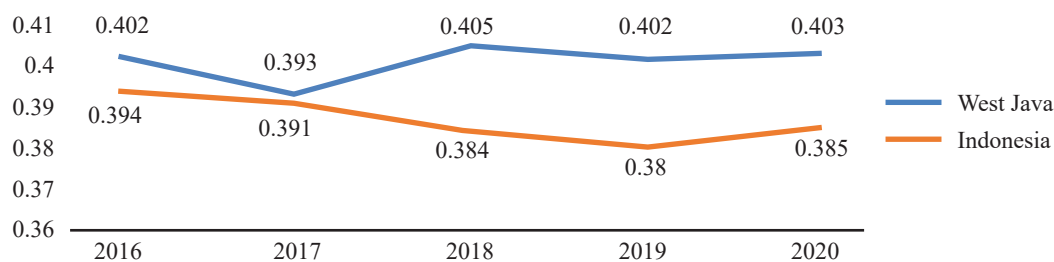
### Abstract

*This study aims to examine the effect of government spending on the economy, social protection, health, and education on income inequality in West Java during 2015-2020. Income inequality in this study uses the Gini ratio. The estimation uses a fixed effect panel data model using the cross-section weight (EGLS) method. The results show that government spending contributes to reducing income inequality in West Java in 2015-2020. Meanwhile, control variables such as GRDP per capita and poverty have a significant effect on increasing income inequality and investment variables have a significant effect on reducing income inequality.*

**Keywords:** income inequality; government spending; GRDP per capita; investment; poverty; panel data

### INTRODUCTION

Development in every country can be successful if it has good economic growth indicators. Economic development in every country has the goal of achieving a high level of welfare and being able to reduce income inequality with fast and better economic growth. Economic growth, poverty, and income distribution are indicators of interrelated economic development (Todaro, 2000). Rapid economic growth is followed by widening income inequality between households and regions, this is due to the absence of a trickle-down effect (Kurniasih, 2017). The distribution of income is perceived from the total income in a country which is distributed among its inhabitants. According to Mahesh (2016), there is no perfectly balanced income distribution because each individual has different abilities, levels of education, and skills. Extreme income inequality can have an impact on economic inefficiency, increase poverty rates, and undermine social stability and solidarity in presenting injustice to society (Kurniasih, 2017). According to Yang and Greaney (2017) explained that high-income inequality can motivate low-income people to work harder to earn high incomes. According to Todaro (2011), the Gini ratio is one of the measuring tools for calculating income inequality. The Gini ratio is categorized into three groups, namely the Gini ratio that has a value between 0.20-0.35 is included in the low inequality category, besides the Gini ratio which has a value of 0.36-0.49 which is included in the medium inequality category, and the last is the Gini ratio which ranges from 0.50-0.70 is included in the high inequality category. Figure 1 shows the Gini ratio value in Indonesia and West Java in 2015-2020 including the category of moderate inequality level and West Java Province is one of the provinces that have a Gini ratio value that exceeds Indonesia's Gini ratio.



Source: Central Bureau of Statistics, data processed

Figure 1. Gini Ratio in Indonesia and West Java

According to the Central Bureau of Statistics (2019), the Gini ratio which is included in the category of moderate inequality is caused by the existence of output results that are not felt by all levels of society. The decline in the gini ratio was due to the expenditure made by the lowest strata of society which experienced a higher increase compared to the upper strata of society. Expenditures on the lower class community reached 2.83%, the middle-class community reached 0.71%, and the upper-class community reached 0.95% (Central Bureau of Statistics, 2019).

One of the efforts to reduce income inequality is the existence of government policies. According to Zakaria and Fida (2016), government spending has an indirect influence on income equality, such as spending on education, and health care, increasing the productivity of low-income people and providing them with job opportunities to increase their income. According to Danawati et al (2016) explaining government spending policies that are carried out properly are expected to be able to create job opportunities to increase economic growth, so that an evenly distributed distribution can reduce income inequality.

An empirical study by Fatihudin and Mauliddah (2019) found that government spending on the education and health sectors influenced increasing the Gini ratio. This condition requires the local government to increase government spending on education and health so that the entire community can benefit from the allocation. Research from Jain-Chandra et al (2016) explains that the variable government spending on health is not significant to income inequality. While the variables of government spending on education, social protection, and the economy have a positive and significant effect on income inequality. In addition, a study by Senol and Orhan (2020) shows that education and health spending contribute to reducing income inequality. An empirical study by Adewumi et al (2018) found that government economic spending did not affect the reduction in income inequality.

Meanwhile, income inequality can also be affected by GRDP per capita, investment, and poverty. Todaro (2006) explains that the character of economic growth is a determinant of whether economic growth can improve the standard of living of the lower middle class or not. Research from Fatihudin and Mauliddah (2019) explains that GRDP per capita influences increasing the Gini ratio. An empirical study from Josifid et al (2021) explains that investment can contribute to reducing income inequality. According to Mushtaq et al (2014), Income inequality can decrease with more significant investment, one of which is economic growth that can be driven by investment and create additional sources of income. The investment can support the transfer of more modern technology, thus having a positive impact on efficiency and technological capabilities. Niyimbarina's empirical study (2017) found that poverty has an impact on increasing income inequality. According to Arsyad (2017), the poverty rate that cannot be reduced results in an increase in inequality in income distribution other than in developed countries. The study according to Syawie (2011) explains that poverty is related to income inequality, but a reduced poverty rate does not mean it can reduce income inequality.

In this study, we will explore the different sides of the relationship between government spending and income inequality, where government spending focuses on functional spending in the economic, social protection, health and education sectors. Then the West Java region became the main focus of research because West Java Province is one of the regions that has higher income inequality than income inequality in Indonesia. The purpose of this study is to examine government spending in the economic, social protection, health, and education sectors on income inequality in West Java. Then are there other influences such as GRDP per capita, investment, and poverty on income inequality.

## METHODS

This research covers 27 West Java Districts/Cities for the 2015-2020 period with data obtained from the Central Bureau of Statistics (BPS) and the Directorate General of Fiscal Balance (DJPK). This research used a panel data regression method with a fixed effect model approach and used cross-section weight (EGLS) on eviews. This study uses a model that refers to the Fatihudin and Mauliddah (2019) model which is modified based on previous empirical studies. The panel data regression model estimated in this study is as follows:

$$G_{it} = \beta_0 + \beta_1 \text{LnBE}_{it} + \beta_2 \text{LnBPSos}_{it} + \beta_3 \text{LnBKes}_{it} + \beta_4 \text{LnBPen}_{it-1} + \beta_5 \text{PDRBPC}_{it} + \beta_6 \text{Inv}_{it-1} + \beta_7 \text{LnPov}_{it} + e_{it} \dots (1)$$

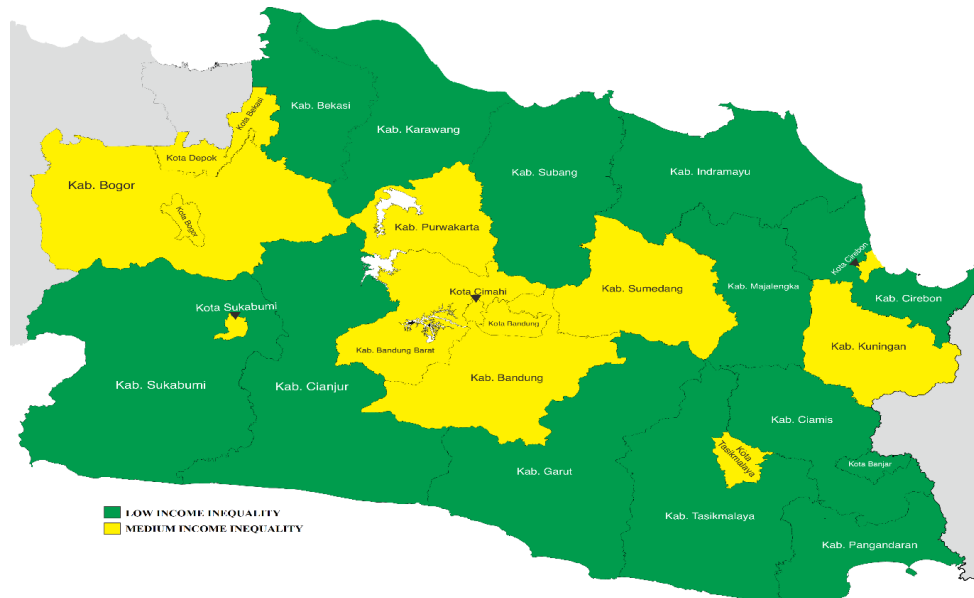
Where G represent Gini ratio, BE stands for Economic spending, BPSos represent Social protection spending; BKes represent Health shopping, BPen stands for Education spending, GRDPPC represent Gross Regional Domestic Product Per Capita, Inv represent Ratio of gross fixed capital formation to GRDz, Pov stands for Poverty (poverty), Ln stands for Natural logarithm,  $\beta_0$  represent Constant,  $\beta_1 \dots \beta_7$  stands for Variable parameters (intercept/slope), e represent term error, i represent 27 districts/cities in West Java, while t stands for 2015-2020.

In addition to the model used referring to the model (Fatihudin & Mauliddah, 2019), several variables refer to other empirical studies, namely the social protection variable in the study (Ulu, 2018) of economic spending referring to research from (Ogbodo et al., 2018), the investment variable is seen from research (Josifidis et al., 2021), and the poverty variable (poverty) is obtained from research (Niyimbanira, 2017). The income inequality

variable is expressed by the gini ratio published by the Central Bureau of Statistics. Government spending variables (economy, social protection, health, and education) use the actual value of government spending published by the Directorate General of Fiscal Balance. The GRDP per capita variable uses the ratio of GRDP to population. The investment variable is proxied by the ratio of gross fixed capital formation to GDP expenditure. In addition, the poverty variable uses the number of poor people.

### RESULTS

The average income inequality in West Java districts/cities during 2015-2020 is in the low inequality category and some are in the moderate inequality category, these conditions can be seen in Figure 2. The Gini ratio which tends to be high indicates that the income distribution of the population in West Java districts/cities is still uneven (RPJMD West Java 2018-2023). The West Java Provincial Government always makes efforts to reduce the Gini ratio, one of which is the development of economic potential in regions with a low economy (Ministry of Finance Directorate General of Treasury West Java Regional Office, 2020). The main factor for the uneven distribution of income in West Java districts/cities is due to differences in natural resources and demographic conditions, economic activity is concentrated in several regions, and the allocation of development funds is uneven (Silviana & Tallo, 2020). In addition, in 2020 almost all districts/cities of West Java experienced an increase in the Gini ratio. According to the Ministry of Finance, Directorate General of Treasury, Regional Office of West Java (2020), the income inequality that has occurred in West Java is due to the Covid-19 pandemic.



Source: Central Bureau of Statistics, data processed

Figure 2. Average Gini Ratio of West Java Districts/Cities in 2015-2020

Based on the results of research on the model, it shows that testing the best model chosen based on the Hausman test shows that the fixed effect model is the most appropriate model to be used in this study. This is shown in Table 1 with the probability value of a random cross-section smaller than  $\alpha = 0.05$ , which is 0.0250. Furthermore, to reduce heteroscedasticity and autocorrelation problems in the panel data model, the Generalized Least Square (GLS) method is used to provide unbiased estimation results.

Table 1. Hausman Test Estimation Results

Test Summary	Prob.
Cross-section	0.0250

Source: Data Processing Results E-views 9.0

The regression results in Table 2 show that the Fixed Effect is the best model in this study. This can be seen from the variable government spending (economy, social protection, health, and education) and investment have a negative and significant effect on income inequality. Meanwhile, the GRDP per capita and poverty variables have a positive and significant effect on income inequality

Table 2. Regression Results of CE, FE and RE Models

Variable	CE	FE	RE
C	0.2504 (0.0000)	0.6484 (0.0000)	0.3789 (0.0000)
LNBEK	0.0113* (0.0011)	-0.0091* (0.0000)	-0.003*** (0.5598)
LNBPSOS	-0.0185* (0.0000)	-0.0246* (0.0000)	-0.0158** (0.0450)
LNBKES	0.0249* (0.0000)	-0.0126** (0.0137)	-0.0016 (0.6894)
LNBPEN(-1)	0.0040 (0.3121)	-0.0126*** (0.0550)	-0.0018*** (0.5505)
PDBCAP	5.92E-10* (0.0000)	1.68E-09** (0.0493)	8.97E-10** (0.0123)
INV(-1)	0.0003 (0.3514)	-0.0036* (0.0013)	0.0008 (0.4479)
LNPOV	-0.0185* (0.0000)	0.0127*** (0.0748)	0.0068 (0.2105)
R-squared	0.1544	0.8598	0.0538
F-statistic	3.3124	18.7740	1.0323
Prob(F-statistic)	0.0029	0.0000	0.4119

Source: Data Processing Results E-views 9.0

Information: Probability in brackets. CE = Common Effect, FE = Fixed Effect, RE = Random Effect

Significant: \* : 0.01, \*\*: 0.05, \*\*\*:0.10

## DISCUSSIONS

The estimation results of the economic expenditure (LNBEK) variable have a coefficient value of -0.009105, meaning that every 1% increase in economic spending will reduce income inequality by 0.009105 index units. The research results are in line with empirical studies (Cevik & Correa-Caro, 2020) and (T Pradnyadewi & Pubadharmaja, 2017) which explain that government spending has a negative and significant effect on reducing income inequality. A more even allocation of economic spending in each district/city in West Java resulted in a change in the distribution of people's income for the better. The allocation of economic spending is reflected in the government's ability to support accelerated economic growth which can be applied through the form of infrastructure and transportation development as well as the development of various businesses carried out by the community such as micro and medium and above businesses to become people's access to income. Economic spending contributes to accelerated economic growth which is marked by increased employment opportunities so that residents are not trapped in poverty and can boost the regional economy. The acceleration of economic growth is accompanied by improvements in income distribution to reduce income inequality.

The coefficient value of social protection spending (LNBPSOS) in this study is -0.024649, this explains that every 1% increase in social protection spending will reduce income inequality by 0.024649 index units. The results of this study are in line with research that has been conducted (Ulu, 2018) that the effect of social spending carried out by the government can reduce income inequality. Social protection spending by the government is an expenditure on resources that are redistributed from people who have high incomes or incomes to people who have low incomes. According to (Verberi & Yaşar, 2021) spending on social protection that is used effectively can reduce income inequality by redistributing the income of the rich to the poor and increasing people's living standards. The social spending program has an economic function and a social utility function because social spending financing comes from tax revenues for high-income groups being transferred to low-income groups so that income is redistributed in the economy (d'Agostino et al., 2020). The role of social protection spending in West Java Province in reducing income inequality based on the regression results shows that the problem of income inequality can be overcome by the allocation of social protection spending. Social protection spending has the objective of overcoming social vulnerability due to loss of income which causes income inequality. The increasing allocation of social protection spending can contribute to reducing income inequality.

The estimation results on the health expenditure (LNBKES) variable have a negative and significant effect on income inequality, this condition can be seen from the coefficient value obtained of -0.012636. An increase in health spending by 1% will reduce income inequality by 0.012636 index units. These results are by research conducted (Senol & Orhan, 2020) which explains that government spending on health has contributed to



reducing income inequality. According to (O'Donnell et al., 2013) shows that a person's income distribution can be affected by health, if a person suffers from an illness will get lower productivity. According to (Fadliyah & Triani, 2019), that health is a basic need for society. The provision of health services is one of the government's programs, so that health facilities and insurance need to be improved because a low level of health will result in low productivity and people's income. Health spending in West Java Province, which has a negative effect on income inequality, reflects that the allocation of health spending can reduce the problem of people's income inequality. Health spending that is evenly distributed in West Java has a function to improve access and health services. The increase in income is inseparable from high productivity supported by good health levels. Healthy human resources will be productive and easy to earn income to reduce income inequality. Therefore, an increasing allocation of health spending can contribute to overcoming the problem of income inequality in West Java.

The estimation results show that the previous year's education (LNBPEN) spending variable has a negative and significant effect on income inequality. Every 1% increase in education spending will reduce income inequality by 0.012629 index units. This condition is in line with research from (Senol & Orhan, 2020) which explains that education spending can reduce income inequality, because greater government spending is allocated for education which makes a major contribution to reducing income inequality. Studies from (Sukmaadi & Marhaeni, 2021) explain that human resources have abilities and qualities that are different from one another, with the government's contribution in allocating spending in the education sector it can increase the skills possessed by human resources thereby contributing to reducing income inequality. According to (Adisasmita, 2013), increasing human resources and productive capacity can be encouraged by the government through the allocation of education, these conditions will have an impact on reducing income inequality. The effect of education spending in West Java on reducing income inequality is that the problem of income inequality faced in the West Java region can be resolved by increasing the allocation of education spending. Allocation of education spending has a function in improving the quality of human resources to have the skills and expertise to get jobs that can improve income distribution. Quality human resources are an investment in every region of West Java in reducing income inequality, this can be supported by an increase in the allocation of education spending in West Java.

The coefficient value for the education variable has a lower value than the coefficient value for the health variable. This condition explains that the mandatory spending value given to the education sector of 20% is not fully optimal in reducing income inequality, while the health sector, which has a lower mandatory spending of 10%, has a greater coefficient value in influencing a reduction in income inequality. According to the Ministry of Finance, the Directorate General of Fiscal Finance explained that from the existence of mandatory spending in the education sector, there are still many outputs that need to be improved. Studies conducted by the World Bank show that various problems are causing the quality of education in Indonesia to be low, namely the authority of the central and regional governments, the quality of teachers is still inadequate, monitoring evaluation is not optimal, accountability is low, and there are disparities in the quality of education between regions and low quality of teachers.

The GRDP per capita (PDBCAP) variable has a positive influence on income inequality. The regression results show a coefficient of 0.00000000168 which is significant for income inequality. This value indicates that every increase in GRDP per capita of 1 million rupiahs will increase income inequality by 0.00000000168 index units. This research is in line with research that has been conducted by (Fatihudin & Mauliddah, 2019) that GRDP per capita influences on increasing income inequality. According to (Hakim et al, 2021) explains that developing countries show conditions of optimal economic growth but people's conditions are deteriorating. This condition can occur because there is a wrong paradigm of economic development in discussing poverty, unequal distribution of income, and unemployment. Research studies (Istiqamah et al, 2018) explain that increasing per capita income is expected to be able to solve problems such as income inequality, but the reality that occurs shows that at the beginning of development in developing countries, income inequality has increased. GRDP per capita in West Java Province has a positive influence on income inequality which indicates that income inequality is higher from the increasing GRDP per capita. The higher GRDP per capita shows that the people in West Java are increasingly prosperous, but with increasingly prosperous people it does not rule out the possibility that there has been no improvement in income distribution. This condition can explain U Kuznets' hypothesis that increasing economic growth gives a correlation to inequality that increases temporarily up to a certain point, because income distribution is not evenly distributed. Over time, economic growth can make a good contribution to the equal distribution of income in several districts/cities of West Java.

The previous year's investment (INV) variable showed a negative and significant relationship to income inequality. The coefficient value of the previous year's investment has a value of -0.003550, which means that every 1% increase in the investment variable will reduce income inequality by 0.003550 index units. The results of this study are in line with research (Josifidis et al., 2021) that income inequality decreases as investment increases. Arsyad's research (1999) explains that investment is expected to increase economic development, and this is used as a driving factor in improving the production process. The existence of high investment can encourage employment

opportunities and increase community welfare so that people's income will improve and reduce income inequality (Sun'an & Astuti, 2008). Research (Wahyuni et al, 2014) explains that to increase the sector in each region, investment plays an important role in regional development, resulting in increased economic growth and equal distribution of income which can reduce income inequality. The negative influence of district/city investment in West Java has contributed to reducing the problem of income inequality. The existence of investment that is evenly distributed in every district/city of West Java has had a positive influence on the distribution of income distribution. High investment can encourage economic growth and increase productivity which leads to levels of income for workers so that investment is one of the efforts to reduce the problem of income inequality that occurs in West Java.

The estimation results on the poverty (LNPOV) variable show a positive and significant relationship to income inequality with a coefficient value of 0.012671. This condition explains that if the increase in poverty is 1%, it will increase income inequality by 0.012671 index units. This condition is in line with research conducted by (Niyimbanira, 2017) explaining that poverty can increase income inequality. Arsyad's research (2017) explains that the problems that occur in the equal distribution of income are related to efforts to alleviate the problem of poverty. This condition explains that income inequality will increase if the poverty rate does not provide a significant reduction. According to (Zulkifli, 2016) poverty a function as a picture between high-class residents and low-class residents, so it can be seen that the more poor people are, the higher income inequality becomes. Poverty has a positive influence on income inequality in West Java, this explains that there is a close relationship between income inequality and poverty. Poverty reflects that people cannot fulfill their daily needs, so income inequality will continue to increase. The existence of these problems is very important information for the community and government in West Java so that it can provide a policy to reducing income inequality.

## CONCLUSIONS

The results of the estimation of income inequality in West Java in 2015-2020 show that government spending (economy, social protection, health, and education), as well as investment variables, have a negative and significant effect, while GRDP per capita and poverty variables have a positive and significant influence. These results have implications for the need for allocating government spending (economy, social protection, health, and education) which is expected to optimize the allocation of spending as a source of financing in implementing various program activities that can contribute to reducing income inequality. Planning a government budget that has the goal of driving the economy and increasing the income of the people of West Java can be achieved if the realization of government expenditure is greater so that income inequality decreases. Government budget planning is the key to the success of development programs in the every districts/city of West Java. Government budget planning is inseparable from the conditions of economic growth in each region of West Java, so government budget planning is adjusted to previous developments in economic activity so that the goals and targets for reducing income inequality can be achieved.

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