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## SOCIAL SCIENCE AND EDUCATION | RESEARCH ARTICLE

## Direct and Indirect Effect of Macro Economic Factors in the West of Indonesia

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**Abstract:** This study aims to examine the effect of investment, expenditure on unemployment, income inequality, and economic growth in the west of part of Indonesia. The research approach is quantitative with structural equation model as a statistical approach. The number of provinces taken in the west of region as many as 18 provinces consisting of Nanggroe Aceh Darussalam, North Sumatra, West Sumatra, Riau, Jambi, South Sumatra, Bengkulu, Lampung, Bangka Belitung, Riau Islands, DKI Jakarta, West Java, Central Java and East Java, Yogyakarta, Banten, West Kalimantan and Central Kalimantan. Result of this study indicates that economic growth has a similar effect produced by investment on the unemployment rate in the west of Indonesia. Investments made by the government are significantly negative, most of which are centered on supporting welfare and developing the human index. There are new findings in the study, namely the different effects caused by government spending on reducing the unemployment ratio. In the west of Indonesia area, this does not show a significant impact whether tested between government spending on unemployment rates or economic growth in east or west of Indonesia. This means that government spending still needs to be converted into various work programs to absorb labor permanently.

**Keywords:** Investment, Expenditure, Unemployment, Inequality Income, Economic Growth.

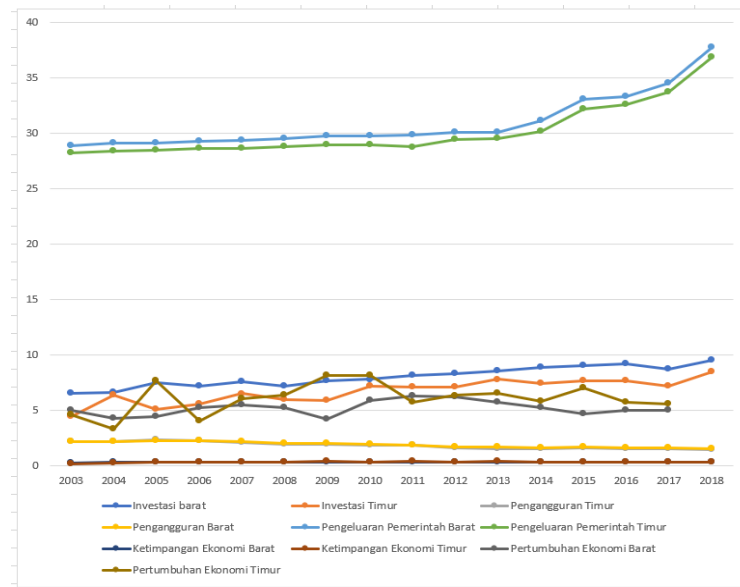
**JEL Code:** A10, A12, B20, B16

### 1. INTRODUCTION

Appropriate state spending is an aspired goal based on efficiency and effectiveness, which can also have a tangible impact on reducing the ratio of social inequality and reducing unemployment through a more coherent allocation of funds on investment aspects Raišienė, Bagdonienė, and Bilan (2014); Qiong and Junhua (2015); Bouwmeester and Scholtens (2017). Apart from that, policies on government expenditure that aim to support government administration are pursued through government administration policies to maintain government officials' welfare and the bureaucracy's effectiveness. Anticipation of risks related to government expenditure policies is also allocated to anticipate economic uncertainty through the support of fiscal risk reserves and disaster mitigation. Therefore, in the 2018 Indonesian State Budget, the Indonesian government budgeted 347.4 trillion rupiahs of funding to meet the public service sector, 157.6 trillion rupiahs for the social protection sector, and 143.1 trillion rupiahs for the education sector ([www.kemenkeu.go.id](http://www.kemenkeu.go.id), 2018). These efforts are to support efforts to accelerate quality economic growth by strengthening the economy's driving force while reducing the effects of unemployment. The unemployment problem will have a universal impact on improving the quality of life; this can also intersect with the economic growth and even a country. This causality is closely related, considering that labor is one of the fundamental aspects of production (man, capital, and land) in classical economics. The main unemployment problem is suspected by adequate education to shape the demand for skilled labor in the labor market (Kudasheva et al., 2015). So that an essential aspect of government policy issues requires the education aspect as one of the direct investments to meet a skilled workforce to reduce unemployment and overcome income inequality (Halvarsson et al., 2018). Halvarsson's opinion is in line with the Indonesian Central



Statistics Agency has released the unemployment rate figure of 7 million people and is dominated by high school / vocational graduates (Damianus Andreas, 2018).



**Figure 1. Data on Investment Trends, Government Expenditures, Unemployment Rate of Economic Growth, and Indonesia's Income Inequality in 2003-2018**

Figure 1. Shows the trend of government investment, government spending, the unemployment rate of economic growth, and income inequality in Indonesia. The Indonesian government's efforts to reduce the income inequality ratio in the west of and eastern parts of Indonesia increase government spending. From 2003 to 2018, the level of government spending experienced a significant increase. The story of government spending then has a substantial effect on economic growth, especially for the eastern part of Indonesia. As described in Figure 1. The level of government spending and the rate of government investment is increasing from year to year, especially in the eastern part of Indonesia, causing a spread-effect for economic growth in the east of Indonesia, which in turn has an impact on the decline in the unemployment rate in the eastern region which is increasingly significant. In line with the results of empirical studies regarding the relationship between the unemployment rate and income inequality as proposed by Gächter et al. (2017) and Shao et al. (2016), which states that a strong correlation can occur if the unemployment rate can be suppressed, it will cause income inequality also to be stopped.

The government's efforts to improve the quality of human resources through the education sector are by allocating 20% of the APBN. This is around 508.1 trillion rupiahs targeted to fund the education sector, divided based on their respective priorities, for example, Rp. 11.1 trillion rupiahs for KIP, Rp. 4.5 trillion for operational assistance for PAUD level education, Rp. 6.7 trillion rupiahs for college KIP, Rp. 64 trillion for school operational assistance, Rp. 1.8 trillion for S2/S3 scholarships, Rp. 8 trillion for constructing and rehabilitating classroom buildings. 4.4 trillion for university development and rehabilitation and Rp. 284.1 billion for research by LPDP. As it is known that Indonesia is the largest country in Southeast Asia, where its achievements have shown a significant change in terms of reducing poverty levels since 1999 (Yenny Tjoe, 2018). Indonesia is also a country with the fourth-largest population after China, India, and the United States (Putra, Said, and Hasan, 2017). However, reducing poverty has not been accompanied by a significant decrease in the ratio of income inequality. Data shows that there is still income inequality in Indonesia, where economic growth is enjoyed by the wealthiest population with a percentage of 20% compared to other communities (www.worldbank.org, 2015) and even income inequality between the rich and poor in Indonesia is still relatively high. Inequality is reflected in the accumulation of wealth that is only enjoyed by a handful of people. Indonesia itself ranks fourth highest with a percentage of 49.3% of nine countries (Russia, Thailand,

India, Brazil, China, the United States, South Africa, and Mexico), 49.3% indicating that national wealth is owned by 1% of citizens just rich (Widyanita, 2017).

In this regard, of course, poverty reflects the significant level of income inequality that can result in fundamental aspects of meeting basic human needs and services. Such as food, health, and education (Ram, 1982; Ram, 1992; Di Domenico & Fournier, 2014). have a significant impact on the process of accelerating human development (HDI). Inequality is indicated by the Gini ratio to measure the inequality of population distribution with a range of 0 for perfectly evenly distributed income to 1 for perfect income inequality. In Indonesia, eight provinces have inequality rates above the national Gini ratio, namely DI Yogyakarta (0.423), Gorontalo (0.407), West Java (0.402), Southeast Sulawesi (0.399), DKI Jakarta (0.394), Papua (0.394), South Sulawesi (0.389), and West Papua (0.386). The provinces of West Nusa Tenggara (NTB) and East Java have lower levels of inequality than the national average, with a Gini ratio of 0.379 and 0.370, respectively. The provinces with the lowest inequality are Bangka Belitung at 0.269, North Kalimantan at 0.295, and West Sumatra at 0.306. In Indonesia, government policies to address income inequality problems can be pursued through several strategic steps such as improving public services, strengthening social protection aspects (Gächter et al., 2017), training for workers, providing employment opportunities, increasing public awareness through tax collections. (www.worldbank.org, 2015). According to Gächter et al. (2017), the Equilibrium Theory approach explains that differences in socioeconomic status impact the level of welfare. However, there is a gap in the results of a different study proposed by Han, Zhao, and Zhang (2015), which states that the Gini ratio and total income per capita do not significantly impact income inequality.

In macroeconomic theory, human development (HDI) depends on two main aspects, namely, economic growth and decreasing inequality between populations (Sargent, 2009; Davidson, 2011). A systematic increase in the Human Development Index requires government efforts in terms of equitable growth in the education sector because income inequality is caused, among other things, by the high unemployment rate. In 2016, research results from Lavrinovicha et al. (2016), Kim and Shao et al. (2016), Kudasheva, Kunitsa, and Mukhamediyev (2015) state that social inequality caused by income inequality stems from unequal access to education. In addition, income inequality, which directly affects high unemployment, will also impact health and social welfare inequality (Kim, 2016; Shao et al., 2016). So that the hope to be achieved is equality from all aspects to prevent inequality in society (Gächter et al., 2017). Therefore, the research study sees a critical gap from several previous studies that have explained that the disclosure of the unemployment ratio correlation is only measured based on economic growth. So the novelty developed in this study is to add investment variables and government expenditure variables to measure the level of effectiveness to reduce the unemployment ratio, which then calculates the significance of unemployment, and economic growth is also measured its impact on income inequality. On the other hand, in the empirical evidence in several studies, there are different results indicated by the results of several studies as stated by Strat et al. (2015); Khodeir (2016); Ghoshray et al. (2016), which says that investment has no impact on economic growth. The differences in the results of studies presented by several studies are mediated by differences in government decision-making processes contained in government policies in covering investment, so it can be stated that policy does play a vital role in supporting a conducive and adequate investment climate (Roşoiu, 2015).

## 2. Literature Reviews

### 2.1. Income Inequality Theory Overview

Adelman and Morris, (1973) suggest 8 factors that cause inequality in income distribution in developing countries, namely: High population growth which has an impact on decreasing income per capita; Inflation is an increase in money income but not with an increase in the production of goods; Inequality of development between regions (Candemir & Zalluhoglu, 2011); The number of investments in capital intensive projects, so that the percentage of capital income from additional assets is greater than the percentage of income derived from work, so unemployment increases; Low social mobility; Implementation of the import substitution industrial policy which causes the prices of

industrial goods to increase in order to protect the businesses of the capitalist group; The inelasticity of demand for export goods from developing countries, which causes a worsening of the terms of trade for developing countries in dealing with developed countries, and people's handicraft industries such as carpentry, home industry, and others are destroyed (Adriana, 2014). Income distribution is a concept that discusses income distribution for each person or household in society (Hu, 2019). There are two main concepts regarding the measurement of income distribution: absolute inequality and relative inequality. The idea of absolute inequality measures inequality that uses a parameter with a total value (Sukirno, 2006). In comparison, the concept of relative inequality measures the inequality of income distribution, which compares the amount of income received by a person or group of community members with the total income received by the community as a whole. Income distribution is one aspect of the poverty problem that needs to be considered because income distribution measures relative poverty (de Bercegol & Monstadt, 2018). There are two categories of poverty levels, namely absolute poverty and relative poverty. Absolute poverty is a condition where the level of income received by a person is not sufficient to meet basic needs. Relative poverty is a calculation of poverty based on the proportion of regional income distribution (Nurwati, 2008).

## 2.2. Theoretical Relationship of Investment to Income Inequality

Inequality of income distribution is income inequality in developing countries where only about 3-5 percent of high income are not investing in productive channels causing low fixed capital formation. The market is narrow because of the ability to absorb the offer of a new product, causing a lack of enthusiasm for the growth of business and community initiatives so that capital formation efforts remain low (Turkyilmaz et al., 2020). Lack of financial institutions Due to the lack of development of money markets, capital markets, credit institutions, and banks in developing countries, the mobilization of savings funds in sufficient quantities for investment purposes is low (Haltenhof et al., 2014). Economic and technological backwardness that limited and neglected economic activity, low labor efficiency, traditional values, social structures, and outdated production techniques have hampered capital formation. According to Haryanto (2013), several theories can explain how much investment can be made to accelerate the economic growth of a country or region, first, the Gradualist Theory. Industrialization quickly because the risks and mistakes would be too significant to bear (Castle, 2001). The injection of a lot of capital is not suitable until the economy can absorb it. The selection of production and investment techniques based on relative costs rather than factors of production should be sought to promote small industries, the development of rural communities using excess labor (Li et al., 2011). Activities that require a lot of capital will be pursued if the profits exceed those of labor-intensive activities. Second, the Big Push Theory This theory briefly says that if there is little effort to increase income, this will only encourage population growth, hindering the increase in per capita income (Easterly, 2006). Therefore, efforts must be made on a large scale to cope with population changes (Easterly, 2006). The implication is that large-scale investments must be made to eliminate poverty, maximizing output using the most productive techniques, which sometimes require significant capital (Nam, 2019b). Concentration on investment which in turn produces capital tools to maintain income and output growth. On the other hand, consumption is suppressed so that investment can continue. The emphasis is on the "economy of scale" in the form of mass production (large scale production) and, of course, also requires a lot of capital (Clark, 1996). Third, Balanced Growth Theory Rosenstein-Rodan first put forward this theory (1953) in (Hoff 2000), emphasizing that the economy can develop. Suppose there is a good balance between the various sectors in the economy. Economic development will not succeed with balanced growth if the investment is only limited to specific "growing points" or developing sectors because other sectors are closely related (Nath, 1962).

## 2.3. Theoretical Relationship of Government Expenditures to Income Inequality

In the Government Expenditure Theory, there are several views according to experts. Keynes's theory explains that the national income balance equation is  $Y=C+I+G$ . Where (Y) is national income, (C) is consumption expenditure, and (G) is government expenditure. By comparing the value of (G) to Y and observing from time to time, it can be seen how much the contribution of government spending

is in the formation of national income. According to Keynes, to avoid stagnation in the economy, the government seeks to increase the amount of government spending (G) with a higher level of national income to offset the tendency to consume (C) in the economy (Davis et al., 1974). Taxation and government spending are interrelated in a fiscal sense or the overall government revenue and expenditure budget. Total spending in the economy minus the multiplier effect of increasing taxes and cutting taxes is a policy where the government implements a surplus budget in suppressing government spending (Bose & Jetter, 2010). If the goal is to increase spending, the government operates a budget deficit by reducing taxes and increasing government spending. A decrease in government spending and an increase in taxes from the circulating flow of national income will reduce aggregate demand and, through a multiplier effect, decrease inflationary pressure when the economy experiences an increase in excessive activity (over-heating) (Shen et al., 2018). On the other hand, if there is an increase in government spending and a decrease in taxes, an injection into the circulating flow of national income will increase aggregate demand and create additional jobs through a multiplier effect (Corbet et al., 2020). Furthermore, the theory put forward by Rostow and Musgrave is based on their views through observations of economic development in several countries. This model connects the stages of economic growth with government spending, which consists of an early stage, an intermediate stage, and an advanced stage (Rostow & Rostow, 1990). In the early stages of economic development, the percentage of government investment to total investment is significant because, at this stage, the government must provide facilities and infrastructure such as education, health, transportation, and so on (Ministry of National Development Planning, 2016). In the middle stage, government investment is still needed, but private investment is getting bigger. This increasingly significant role of the private sector causes market failures also to increase, which in the end makes the government have to provide more and better public goods and services. At an advanced stage, government activities shift from providing infrastructure to social activities such as old-age welfare programs, public health services, and so on (IN Pradani, 2016). Lavrinovicha et al. (2015) state that government spending affects fighting income inequality through improving human capital through education. Education and public spending have a harmonious causality to overcome the problems of quality of life & income inequality (Kim, 2016).

#### 2.4. Theoretical Relationship of Economic Growth to Income Inequality

Adam Smith, David Ricardo, Malthus, and John Stuart Mill pioneered classical economic growth theory. According to this theory, four factors influence economic growth: the population, capital goods, land area and natural wealth, and the technology used (Olilingo & Putra, 2020). They pay more attention to the effect of population growth on economic growth. They assume the land area and natural resources, and technology have not changed. The theory that explains the relationship between per capita income and the population is called the optimal population theory (Olilingo & Putra, 2020). According to this theory, initially, population growth will lead to an increase in per capita income. However, suppose the population continues to grow. In that case, the law of diminishing returns will affect the production function. Namely, marginal production will decrease and lead to a state of per capita income equal to marginal production (Olilingo & Putra, 2020). In this situation, per capita income reaches its maximum value. The population at that time is called the optimal population. If the population continues to increase beyond the optimal point, population growth will cause a decrease in the value of economic development (Olilingo & Putra, 2020). Growth theory was also developed almost simultaneously by Roy F. Harrod (1984) in England and Evsey D. Domar (1957) in the United States. They use a different calculation process but give the same results, so they are considered the same idea and are called the Harrod-Domar theory (Olilingo & Putra, 2020). This theory complements Keynes' approach, where Keynes sees it in the short term (static conditions), while Harrod-Domar sees it as long (dynamic conditions). Harrod-Domar's theory is based on the assumptions: 1) The economy is closed. 2) The desire to save ( $MPS = s$ ) is constant. 3) The production process has a fixed coefficient (constant return to scale). 4) The labor force growth rate is constant and equal to the population growth rate (Olilingo & Putra, 2020) and (Dahlia et al., 2020).

### 2.5. Theoretical Relationship of Unemployment to Income Inequality

The theoretical relationship between unemployment and income inequality is explained by Halvarsson's research which says that many entrepreneurs help overcome income inequality through employment (Halvarsson et al., 2018). Inequality of development and welfare will significantly affect income inequality (Gächter et al., 2017) and (Shao et al., 2016). According to Sjafrizal (2014), the open unemployment rate is one of the essential indicators to measure the level of welfare of the local community. A high unemployment rate indicates that the community's level of interest and income is still low, and vice versa. This indicator is crucial for Indonesia as a country with a large population so that the provision of more employment opportunities is the main target of strategic regional development (Muslim, 2014). In an empirical review, the researcher tries to see the results of previous research related to the variables used, namely investment, government spending, unemployment, and economic growth on income inequality. Among them are the results of Liyanaarachchi's research (2016). With the research title Impact of trade liberalization on the labor market and poverty in Sri Lanka. An integrated macro-micro modeling approach. This research was conducted in Sri Lanka with the results of study stating that income inequality is a concept that explains differences in prosperity, the standard of living, and income received or generated by individuals or households in society, resulting in uneven distribution between regions caused by differences in factors. Production and available resources.

### 3. Research Method and Materials

This study is designed to develop an empirical research model through direct or indirect relationships of each variable such as investment, government spending, economic growth, unemployment, and income inequality variables in Indonesia. The research approach is quantitative. The object of research is the west of region and the eastern region of Indonesia. The number of provinces taken in the west of region as many as 18 provinces consisting of Nanggroe Aceh Darussalam, North Sumatra, West Sumatra, Riau, Jambi, South Sumatra, Bengkulu, Lampung, Bangka Belitung, Riau Islands, DKI Jakarta, West Java, Central Java, Java East, DI Yogyakarta, Banten, West Kalimantan and Central Kalimantan. Meanwhile, in the eastern part of Indonesia, it consists of 12 provinces, namely West Nusa Tenggara, East Nusa Tenggara, South Kalimantan, East Kalimantan, North Sulawesi, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, Maluku, North Maluku and Papua during the period 2003 to 2018. This study uses panel data by combining cross-section data from 30 provinces and time-series data from 15 years. The type of data used in this study is quantitative data. Sources of data used in this study are: Secondary data in this study were obtained from macroeconomic data from the Indonesian government for 2003 – 2018, which includes data on the level of development of government investment, data on government spending levels, data on economic growth, data on unemployment rates and data on income inequality ratios. In the west of and eastern parts of Indonesia for the period 2003 - 2018. The data used in this study is secondary data in the form of a panel tool that combines time series data 15 Years (2003-2018) with Cross-Section data for the west of and eastern regions. Indonesia consists of 30 provinces in the Indonesian Territory. As many as 450-panel data are obtained, which are considered to meet the statistical requirements of the analytical model used. Hypothesis testing in this study was carried out using the path analysis method, which aims to examine the relationship between one variable and another. Variables that are affected are called endogenous variables, while variables that influence are called exogenous variables. The primary analysis carried out is to test the path construct whether it is empirically tested or not. Further analysis was carried out to determine the direct and indirect effects of a set of independent variables on the dependent variable. In addition, path analysis is a type of multivariate analysis to study the direct and indirect impact of several variables that are hypothesized as causal variables on other variables called effect variables. The causality relationship between variables has been established with a model based on the theoretical basis. The data in this study will be processed using the Statistical Package for Social Sciences (SPSS) program. Path analysis is an extension of multiple linear analysis. Path analysis uses

regression analysis to estimate causality relationships between variables (causal models) that have been previously determined based on theory (Ghozali, 2013).

#### 4. Results and Discussion

The government of Indonesia focuses on increasing public and private investment to promote Indonesia's economic expansion. In particular, investment in infrastructure and the manufacturing industry is welcomed to improve connectivity across the archipelago (to reduce logistics costs and improve the quality of the investment climate and national competitiveness) and reduce Indonesia's traditional dependence on (raw) commodity exports. Measures used by the government in supporting investment improvement are cutting bureaucracy, deregulation, and offering tax incentives in specific sectors to investors who meet certain criteria to attract private investment. First, the level of investment in the Indonesian region from 2003 to 2018, according to province, it can be seen that DKI Jakarta, West Java, and East Java are the largest compared to other regions both in the west of part of Indonesia. And in the eastern part of Indonesia, by looking at 2018, DKI Jakarta with an investment-value of 49,097.42 billion, West Java of 42,278.21 billion, and East Java of 33,333.13 In general, these three provinces in the west of region provide more investment than other regions due to attractiveness such as the availability of adequate facilities and infrastructure. Productive labor force, relatively better transportation and information lines, and more significant population growth in the region (Demographic Bonus). During the period 2003-2018. It is noted that eight sectors are the focus of government investment realization. Infrastructure is the sector with an enormous total investment cost. Furthermore, the financing sector/MSMEs, the energy sector, the transportation, logistics, and food sectors, and investment in the Education and Health sectors, human resource development can be carried out by improving the quality of human capital. Human capital can refer to education, but it can also describe another type of human investment that leads to a healthy population, namely health. Education and health are fundamental development goals in a region. Health is the essence of well-being, and education is essential to achieving a decent life. Education has a vital role in shaping the ability of a developing country to absorb modern technology and develop the capacity for sustainable growth and development. Government investment in education, health, and infrastructure will increase human capital and physical infrastructure; this will also spur economic investment. The financial investment will further affect economic growth because of the large amount of money available for development. The Indonesian government's investment comes from domestic and foreign investment.

##### 4.1. The results of the statistical analysis of West of Indonesia

In answering the formulation of the problem, linear regression analysis was carried out in Structural Equation Modeling (SEM) to determine the direct or indirect effect. And analyze the influence of the determinants of income inequality in Indonesia; regression analysis was carried out linearly, simultaneously estimating the magnitude of the direct or indirect effect. In this simultaneous linear regression analysis, the endogenous variables are unemployment rate ( $Y_1$ ), economic growth ( $Y_2$ ), and income inequality ( $Y_3$ ). In comparison, the exogenous variables consist of investment ( $X_1$ ) and government spending ( $X_2$ ). Based on simultaneous linear regression analysis using structural model equations, the calculation results are obtained as shown in Table 1. The value of R square  $y_1$  ( $R^2y_1$ ) of 0.001 means 0.1 percent of variations in the change in the unemployment rate variable can be explained simultaneously by variations in changes in investment variables. And government spending. The remaining 99.9 percent is determined by variables or other factors outside the model. The following is the output of the research hypothesis testing table using the AMOS test tool in the form of Regression Weights output, as shown in Table 1 below.

**Table 1: Estimated Regression Weights**

Direction of influence between variables	Regression Coefficient	t-Statistic	Probability	Info
Investment → Unemployment	0,067	0,466	0,641	Not Support
Investment → Economic Growth	-0,094	-1,264	0,206	Not Support
Investment → Inequality Income	-0,002	-1,149	0,304	Not Support
Gov. Expenditure → Unemployment	-0,103	-0,421	0,674	Not Support
Gov. Expenditure → Economic Growth	0,291*	2,295	0,022	Support
Gov. Expenditure → Inequality Income	0,020*	7,309	***	Support
Unemployment → Economic Growth	0,089*	2,860	0,004	Support
Unemployment → Inequality Income	-0,001	-1,149	0,250	Not Support
Economic Growth → Inequality Income	0,005*	4,014	***	Support

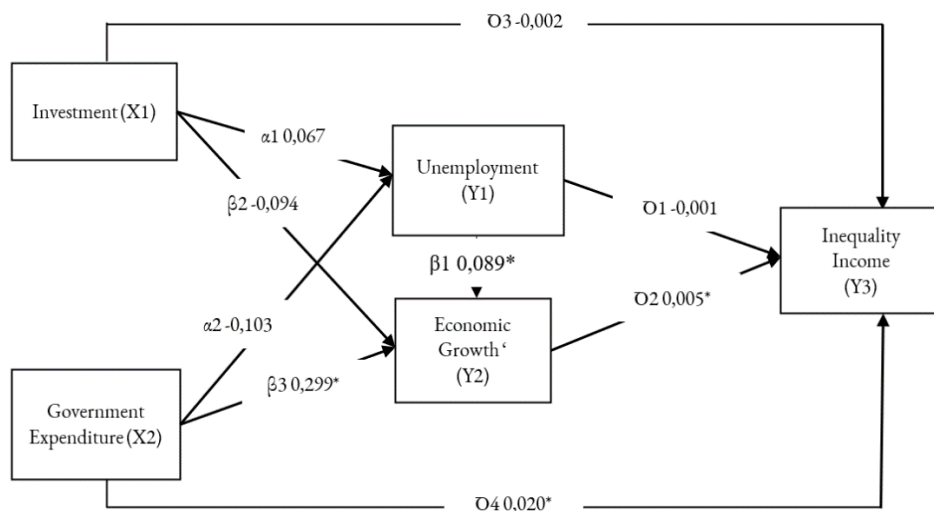
) Significant to  $\alpha = 5\%$ ;  $R^2_{y_1} = 0,001$ ;  $R^2_{y_2} = 0,047$ ;  $R^2_{y_3} = 0,307$

In Table 1, explains the relationship between the dependent variables that are influenced by the independent variables. For example, in the results of the estimation of the unemployment rate in the west of region, the variable that shows an insignificant effect is government spending. In contrast, the one that offers a significant impact is an investment with a significance level of 5 percent.

**Table 2. Variable Coefficient Estimation and Total Effect**

	Direction of Influence Between Variables / Research Hypothesis	Estimated Coefficient Numbers for Variable Effects		
		Direct	Indirect	Total Effect
X1	Investment ==> Unemployment	0,067		0,067
	Investment ==> Economic Growth	-0,094		-0,088
	Investment ==> Inequality Income	-0,002	-0,001	0,002
X2	Gov. Expenditure ==> Unemployment	-0,103		-0,103
	Gov. Expenditure ==> Economic Growth	0,291*		0,282
	Gov. Expenditure ==> Inequality Income	0,020*	0,002	0,021
Y1	Unemployment ==> Economic Growth	0,089*		0,089
	Unemployment ==> Inequality Income	-0,001		0,000
Y2	Economic Growth ==> Inequality Income	0,005*		0,005

This section describes the results of the variable coefficients that describe the direct, indirect, and total effects between investment variables, government spending, unemployment rates, economic growth, and income inequality in west of Indonesia. The relationship between variables described in structural equation modeling (SEM) is also presented in the model estimation results in Figure 2.



**Figure 2: Research Estimation Results Framework for the West of Region of Indonesia**

A detailed explanation of the relationship between variables, either directly (direct effect) or indirectly (indirect effect) on the variables of investment and government spending on income inequality through unemployment and economic growth. Based on the estimated coefficient-value, it is further explained and analyzed based on the sequence of hypotheses that have been developed—previously stated.

### **1. The direct effect of the investment variable on income inequality and the indirect impact of the investment variable on income inequality through the unemployment rate and economic growth in the west of region of Indonesia.**

The direct effect of investment on income inequality in west of Indonesia shows an insignificant negative impact (t-value of -1.149 and coefficient-value of -0.002). This indicates that every 1 percent increase in investment will reduce income inequality in west of Indonesia by 0.002, although not significantly. Vice versa. The relationship between investment variables and income inequality in Indonesia west states that there is no significant effect. This means that the size of a one-unit increase in investment only contributes little to efforts to reduce income inequality. The results of this hypothesis are in line with the initial idea, which states that there is an influence between investment and income inequality in west of Indonesia. Furthermore, the indirect effect of investment on income inequality in the west of part of Indonesia through the unemployment rate shows an insignificant negative impact. It comes from the little positive relationship between investment and unemployment (t-value of 0.466 and coefficient-value of 0.067). The relationship negative, not significant unemployment rate on income inequality (t-value of -1.149 and coefficient-value of -0.001). Furthermore, the indirect effect of investment on income inequality in the west of part of Indonesia through economic growth shows an insignificant negative impact between investment and economic growth (t-value of -1.264 and coefficient-value of -0.094). then continued with a significant positive relationship between economic growth and income inequality. (t-value of 4.014 and coefficient-value of 0.005).

### **2. The direct influence of government expenditure variables on income inequality and indirect investment variables on income inequality through unemployment rates and economic growth in west of Indonesia.**

The direct effect of government spending on income inequality in west of Indonesia shows a significant positive impact (t-value of 7.309 and coefficient-value of 0.020). This means that the size of a one-unit increase in government spending still contributes to efforts to directly reduce the potential for income inequality. The results of this hypothesis are in line with the initial idea, which states that there is a significant relationship between government spending and economic growth in west of Indonesia. Furthermore, the indirect effect of government spending on income inequality in the west of part of Indonesia through the unemployment rate shows a significant positive impact. It comes from an insignificant negative relationship between government spending and the unemployment rate (t-value of -0.421 and coefficient-value of -0.103), then continued with a significant positive indirect relationship between unemployment and income inequality (t-value -1.149 and coefficient-value -0.001). Meanwhile, the indirect effect of government spending on income inequality in the west of part of Indonesia through economic growth shows a significant positive impact between government spending and economic growth (t-value of 2.295 and coefficient-value of 0.291). It then continues with a meaningful positive relationship between economic growth and income inequality (t-value).  $t = 4.014$ , and the coefficient-value is 0.005).

## **4.2. Discussion**

In the discussion of research that has been studied previously, namely in the data analysis chapter. The argument contains a review of the relevance of the problem, research gaps, research objectives, hypotheses, and analysis of research results to produce valid findings and implications for the

development of knowledge theoretically and managerially by implication. The discussion of this study includes four points that generally refer to the research hypotheses, including: The demonstration that illustrates the relationship between investment and unemployment explains that the effect of investment on the unemployment rate in both the western and eastern parts of Indonesia in this study is equally negative and significant. This means that government investment is a domestic investment (PMDN) and foreign investment (PMLN). It is proven to have an indirect effect on reducing the unemployment rate ratio; in several previous studies, the results we find are different from those of previous studies. Which mainly states that directly increasing government investment will constantly reduce the high unemployment rate. Government investment can mean capital formation, where investment is one of the leading solutions to every country's problem and is the primary key to sustainable economic development. Government investment through PMDN and PMDN can be a general requirement for the economic development of a country that is capital accumulation. Investment and its linkage to reducing the unemployment rate can be extracted through the allocation of physical equipment and human resources; and technology setup. The results of this study are in line with a survey by Trejo García et al. (2017) entitled Analysis of the hysteresis of unemployment in Mexico in the face of macroeconomic shocks, which states that the monetary level has a positive and significant effect on the availability of the labor market. Besides that, investment also gives importance to opportunities to create labor market availability. Then it is clarified in a study from (Guerrazzi 2015; Qiong and Junhua, 2015; Omri and Kahouli, 2014; Sadikova et al., 2017) which states that investment costs will affect productivity. The domino effect created by increasing productivity is directly proportional to the decrease in the unemployment rate (Elshamy, 2013). As illustrated in Figure 2 in this appendix, when investment increases, it also reduces the unemployment rate.

1. Construction; Transportation, Warehouse and Telecommunication; Housing, Industrial Estate, and Offices; Electricity, Gas, and Water; and Chemical and Pharmaceutical Industry. When all industrial sectors are combined, this sector contributes 18.9% of the total PMDN. Meanwhile, the top five realizations of domestic investment based on project locations are western Indonesia, such as Banten, Riau; West Java; East Java, East Kalimantan; and Java.
2. Realization of FDI investment based on business sector (top 5) are: Basic Metal, Metal, Non-Machinery and Equipment Industry; Transportation, Warehouse, and Telecommunication; Electricity, Gas, and Water for Residential, Industrial and Office Estates; and Chemical and Pharmaceutical Industry. When all industrial sectors are combined, this sector contributes 49.7% of the total FDI. Realization of FDI investment based on project location (top 5) in West Java, Special Capital Region of Jakarta; North Maluku; Banten; and the Riau Islands.

The dominant Indonesian government expenditure is for ministry and non-ministerial spending, while regional expenditure is chief for transfers to regions and village funds. The allocation of government expenditure includes public services, defense, order and security, economy, environment, housing and public facilities, health, tourism and culture, religion, education, social protection. This means that the function of government spending is for development, both tangible and intangible. The assumption of economic growth is the dominant variable determining the amount of the component of state revenue that will be used again for the process of economic growth and government spending. Economic growth is a macroeconomic essential assumption variable positively related to domestic payments, domestic tax revenues, and state revenues. If economic growth is estimated to increase, domestic revenue will increase and vice versa. If economic growth is estimated to slow down, domestic revenue growth has the potential to slow down. This relationship can also be explained from a financial point of view, considering that domestic revenue is highly dependent on the condition of a region's domestic economy, which is reflected in the growth of the gross domestic product. Development planning carried out by a region is a complement to development planning carried out by the central government, namely making a program to spread projects to the various areas with the aim that the distribution will provide an optimal contribution to the government's efforts to develop. The results of this study are in line with the survey conducted by Bouwmeester and Scholtens (2017), which states that government spending has a positive and significant effect on economic growth. A growing

economy also has an impact on reducing unemployment. Investment and government spending positively and significantly impact economic growth (Mihaiu and Opreana, 2013). Likewise, expenditures at the micro-level and R&D (Candemir & Salihoglu, 2011). On the other hand, the comparative study also states that differences in economic growth in objects of a region significantly affect income inequality (Han et al., 2015). Investment can be realized through government regulations that are pro-production. By definition, economic growth is one of the most critical indicators in analyzing the economic development that occurs in a country. Economic growth shows the extent to which economic activity will generate additional income for the community in a certain period. Unemployment is a macroeconomic problem that affects humans directly and is the most severe. For most people, losing a job means a decrease in the standard of living and psychological stress. So, it is not surprising that unemployment is a topic that is often discussed. Unemployment is generally caused because the number of workforce or job seekers is not proportional to the number of existing jobs that can absorb it. With the increase in the unemployment rate in Indonesia, the value of people's income also decreases. If the payment is adjusted, the purchasing power of the people also begins to decline. This is a problem of the delay in economic development in Indonesia. The high unemployment rate also impacts the issue of income inequality and economic growth both regionally and nationally.

The analysis results in this study state that the relationship between economic growth is positive/direct to the decrease in the ratio of income inequality. The results of this study are in line with the comparative study by Han et al. (2015), which states that differences in economic growth in objects of a region have a significant effect on income inequality. Economic growth will also trigger equitable income to decrease income inequality (Saari, Dietzenbacher, and Los, 2015). It can be seen in Figure 6, which explains the relationship between economic growth and income inequality. It is illustrated that when economic growth increases or decreases, it will trigger the income inequality ratio. Meanwhile, in terms of state spending, economic growth has a positive effect on government spending on goods and capital and the number of transfers to the regions. How much goods and capital expenditures are allocated will be positively related to economic growth. To encourage economic growth at a certain level, one can be through government spending support, both goods and capital in the form of government investment. The results of this fourth hypothesis confirm that the difference in government spending between the two regions will have a different impact on the results achieved. For example, in the western part of Indonesia, the government spending factor has a significant positive effect on efforts to reduce income inequality mediated by the unemployment rate. However, a large amount of government spending in Eastern Indonesia does not impact reducing income inequality mediated by the unemployment rate. The results of this study are in line with the results of research which states that the effectiveness and efficiency of government spending has a positive and significant effect on decreasing the unemployment rate through effective allocation of funds (Raišienė et al., 2014; Qiong and Junhua, 2015; O'Campo et al., 2015).

## 5. Conclusion

Orientation of investment policies, both domestic and foreign, and government spending should be more directed to sectors that have regional and national potential. To further improve economic competitiveness, which helps reduce the unemployment rate and income inequality ratio in Indonesia. It is necessary to improve various fields such as infrastructure, improve the quality of human resources, and optimize natural resources used as capital in developing investment and a more competitive economy. The realization of government investment and government spending to reduce the impact of the unemployment rate and income inequality has been well realized. However, attention needs to be paid to improve it further. So that attention to sectoral aspects of the economy is essential to get attention and optimization technically and administratively and supervisory and regulatory functions.

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