Macroeconomic Factors Effect on Inequality Income: Evidence from Indonesia

by Jafeb Aditya

Macroeconomic Factors Effect on Inequality Income: Evidence from Indonesia

Andi SESSU[1]*, Yulia Tri SAMIHA[2], Maya LAISILA[3], Nurul CHAMIDAH[4], Imaduddin MURDIFIN[5], Aditya Halim Perdana Kusuma Putra[6],

[1] First Author & Corresponding Author. Associate Professor, Faculty of Economic and Business, Department of Management, Universitas Muhammadiyah Prof. Dr. Hamka, Jakarta, Indonesia. [Postal Address: Limau II, South Jakarta, Jakarta City, 12130, Indonesia] Tel: +62 82191128157, Email: sessuandi03@gmail.com

[2] Associate Professor, Faculty of Education and Teacher Training, UIN Raden Fatah, Palembang, South Sumatera, Indonesia. Email: yuliatrisamiha_uin@radenfatah.ac.id

[3] Assistant Professor, Faculty of Economic, Department of Mangement, Universitas Kristen Indonesia Maluku, Ambon City, Maluku, Indonesia. Email: laisilamaya@gmail.com

[4] Associate Professor, Faculty of Social Science & Political Science, Department of Communication, Universitas Muhammadiyah Cirebon, Cirebon, West Java, Indonesia. Email: nurul.chamidah@umc.ac.id

[5,6] Associate Professor, Faculty of Economics and Business, Department of Management, Universitas Muslim Indonesia, Makassar City, South Sulawesi, Indonesia. Email: adityatrojhan@gmail.com

Abstract

The purpose of this study is to measure and analyze the relationship and influence of variables both directly and indirectly (e.g., Investment, government expenditure, unemployment rate, economic growth, and inequality income). The data testing phase is the first to transform the data using the Ln method. The second phase is the normality and multicollinearity of data. Third, test direct variables (i.e., government expenditure and investment effect on the unemployment rate and economic growth; investment on government expenditure; economic growth on unemployment rate; economic growth and unemployment rate on inequality income). Fourth, indirect tests use Sobel-test, which involves UR and EG as intervening. Fifth is hypothesis test with p-value < 0.05. The empirical study results state that of the 12 demonstration relationships, statistical forms that 11 variations of the association have a significant positive and negative effect. Theoretically, the different characters and goals of GE and INV in each country will impact EG and UR goals. The study certainly provide an overview, especially for the government; to create optimal EG through GE and INV, it is necessary to allocate budgets to industrial sectors that can absorb massive labor or give budgets to new economic growth sectors.

Keywords: Government Expenditure, Investment, Unemployment, Economic Growth, Inequality Income

JEL Classification Code: E12, E22, E24, O47, D63

1. Introduction

The current Indonesian government's investment activity focuses on increasing access to capital, both foreign and domestic. In particular, Investment in the manufacturing and infrastructure industries is welcomed to improve connectivity throughout Indonesia. Of course, the Indonesian government's investment projection aims to reduce logistics costs and increase national competitiveness. Amid the current opportunities, given the direction of the world economy moving to the Asian continent. Indonesia has several great opportunities to create an investment climate conducive to both macro and micro scales so well in the long term, one of which is an investment in infrastructure, investment in the creative and digital economy. Even so, the classic obstacles to investment problems in Indonesia also continue to roll. One of the main obstacles in investing is the flow of bureaucracy and licensing, which is considered to have not optimal coordination between the center and the regions, and weaknesses in meeting the industry's energy supply and the concentration of investment distribution that is only centered in one particular area. Therefore, improving regulations and government investment effectiveness is critical for creating a conducive investment climate. The policies pursued by the Government of Indonesia in the part of regulatory force are through improving the investment climate in the business world; This is intended so that the synergy between productive Investment will encourage the aspired economic growth both in the short and long term (Kudasheva et al., 2015; Halvarsson et al., 2018).

Increased Investment at the micro-level aims to foster community business enthusiasm so that regional and national economic growth can be realized (Halvarsson, Korpi, and Wennberg, 2018). The posture of the 2020 Indonesian State Budget (APBN) that reflects the government investment sector puts forward the aspects of national infrastructure development where the budget allocation of up to 410.4 trillion rupiahs is allocated to the ministry of public works and public housing (PUPR), which is the investment policy in the infrastructure sector To support centers of economic growth, main logistics channels, and intermodal integration to encourage strategic areas development. Furthermore, the government's effort to increase economic growth and Investment is through streamlining government spending (government expenditure). Reflecting on the 2018 State Budget, the total state expenditure spent a budget of 2,220.7 trillion rupiahs, where the largest category of state learning was budgeted for ministerial and institutional (K/L) spending of 847.4 trillion rupiah, regional transfers, and village funds amounting to 766, 2 trillion and non K/L expenditures amounting to 607.1 trillion rupiahs (www.kemenkeu.go.id, 2018). The purpose of the state expenditure is to synergize social protection programs and sharpen social assistance, education, and health. In this regard, the dominant state expenditure policy in the education and health sectors has been empirically proven to overcome social inequality, directly or indirectly (Lavrinovicha et al., 2015; O'Campo et al., 2015; Shen, Yang, and Zanna, 2018; Kim, 2016).

Appropriate government expenditure is an aspired goal based on efficiency and effectiveness, which can significantly impact reducing the social inequality ratio and reducing the unemployment rate through a more coherent allocation of funds on the investment aspect (Raišienė, Bagdonienė, & Bilan, 2014; Qiong & Junhua, 2015; Bouwmeester & Scholtens, 2017). Apart from that, specifically in Indonesia, policies on government expenditure also aim to support government administration through government administration policies to maintain government officials' welfare and the effectiveness of the bureaucracy. These efforts are to support efforts to accelerate quality economic growth by strengthening the economy's driving force while reducing the effect of unemployment. The problem of unemployment 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 an

essential aspect of classical economic production (man, capital, and land). The role of adequate education mainly emphasizes unemployment to shape skilled workers' demand in the labor market (Kudasheva et al., 2015). An essential aspect in the issue of government policy requires the element of education as one of the direct investments to welcome skilled workers to reduce unemployment and overcome income inequality (Halvarsson et al., 2018). This opinion is in line with the fact that is currently happening where the Indonesian Central Bureau of Statistics released an unemployment rate of 7 million people and is dominated by high school graduates from vocational high schools (Damianus Andreas, 2018). Apart from that, the main thing caused by the high unemployment rate also causes the income received to be low and autonomous consumption also decreases (Guerrazzi, 2015; Gächter et al., 2017).

Theoretical exposure and disclosure of natural phenomena regarding the linkage of Investment, government expenditure concerning economic growth to overcome unemployment and inequality income. Giving birth to main ideas related to the variety of suitability and inconsistencies between theory, facts, and empirical test results to bridge previous research results and our research today. Research results from Adriana (2014), Roşoiu (2015), Sadiku et al. (2015) conducted in Macedonia's State concluded that there is no correlation between economic growth and the unemployment ratio. Other studies that are considered to have limitations in disclosure and testing of variables in measuring the unemployment rate are also shown from the research results by Ghoshray et al. (2016); Khodeir (2016); Strat et al. (2015), where they stated that foreign Investment did not affect reducing the unemployment rate. One study found that Investment in human development starts from improving better education to fulfill basic human needs. The linkage between investment and government expenditure through the education sector directly impacts income inequality for the productive workforce (Lavrinovicha and Teivans, 2015). Even though Indonesia's economic growth ranks third-fastest among other G-20 countries, this statement follows the explanation of statistical figures for 2000 - 2017, showing that Indonesia's per capita Gross Domestic Product figure has increased by 4% every year after China and India (Yenny Tjoe, 2018). The country's Gini ratio index also increased from index 30 in the 90s to index 39 in 2017. Indonesia's increasing economic growth is not in line with income distribution, which has triggered inequality between people. Income inequality that moves slowly with economic growth in Indonesia is triggered by several fundamental aspects: educational qualifications and market demand for labor and skilled labor and skills (www.worldbank.org, 2015).

Government expenditure is a form of realization of the government's work plan in the implementation of development. The public can only experience government activities when the spending process is completed, such as spending on infrastructure provision, subsidies spending, spending on education, etc. One of the strategic points of government administration is state spending. The Indonesian government spending policy measures include, among other things, to finance improvements in the quality of human resources, for example in the draft allocation for the 2020 Indonesian State Budget; which states that the realization of improving the quality of human resources is manifested in the form of supporting the continuation of education of the poor to a higher level through the Indonesia Smart College Card (KIP-Kuliah) program. Then, improving the quality of human resources is also reflected in the pre-employment cards, which aim to increase productivity for job seekers and the continuity of health service provision by increasing the amount of community contribution assistance. Besides, state spending for infrastructure development needs through equitable development between regions and accelerating five tourist destinations in Indonesia are super priorities. Therefore, the government's effort to improve the quality of human resources through the education sector is by allocating 20% of the state budget, namely around 508.1 trillion rupiahs, which is targeted to fund the education sector divided according to respective priorities. For example, 11.1 trillion rupiahs

for KIP, 4.5 trillion for operational assistance for early childhood education (PAUD), 6.7 trillion rupiahs for college KIP, 64 trillion for school operational assistance, and 1.8 trillion magister and doctoral scholarships, 8 trillion for the construction and rehabilitation of school buildings. 4.4 trillion for university development and rehabilitation and. 284.1 billion for research by the Education Fund Management Institute (LPDP), which is under coordination and cooperation between the Ministry of Finance and the Ministry of Education and Culture of the Republic of Indonesia.

Indonesia is the largest country in Southeast Asia, where its achievements have shown a significant change in reducing the poverty rate since 1999 (Yenny Tjoe, 2018). Indonesia is also the fourth most populous country after China, India, and the United States. However, reducing the poverty rate has not been accompanied by a significant reduction in the income inequality ratio. The 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). Even the income inequality between rich and poor people in Indonesia is still high. Inequality is reflected in the accumulation of wealth that only a handful of people enjoy. Indonesia itself is in the fourth highest position with a percentage of 49.3% of nine countries (Russia, Thailand, India, Brazil, China, the United States, South Africa, and Mexico), which shows that national wealth is owned by only 1% of wealthy citizens. In Indonesia, out of a total of 34 provinces, eight provinces have an inequality rate 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 inequality levels than the national average, with Gini ratios of 0.379 and 0.370. The regions with the lowest inequality were in Bangka Belitung at 0.269, then North Kalimantan at 0.295, and West Sumatra at 0.306. In Indonesia, the government's policy to address income inequality is by taking several strategic steps, such as improving public services and strengthening systems in the aspect of social protection (Gächter et al., 2017), as well as training for the workforce, providing employment opportunities, increasing public awareness through tax collection (www.worldbank.org, 2015). Gächter et al. (2017) In his study using the Equilibrium Theory approach, it is clear that socioeconomic have status differences impact on welfare. However, there is a gap in the results of different studies suggested by Han, Zhao, and Zhang (2015), which states that the Gini ratio and total income per capita do not significantly impact inequality income.

Therefore, the researcher's study sees a critical gap from several previous studies that have been previously described that the unemployment ratio correlation is only measured based on economic growth alone. The novelty developed in this study is to add investment variables and government expenditure variables to measure the level of effectiveness in reducing the unemployment ratio, which then measures unemployment's effectiveness. Economic growth also measures its impact on income inequality. On the other hand, in the empirical evidence in several studies, there are different results shown by several study results as suggested by Strat et al. (2015), Khodeir (2016), and Ghoshray et al. (2016) state that Investment has no impact on economic growth. The existence of differences in the results of studies suggested by several studies is mediated by differences in government decision-making processes 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). In connection with the introduction section's presentation, objectively, this study aims to measure and analyze the relationship and influence both directly and indirectly on investment variables, government expenditure, unemployment rates, economic growth, and income inequality in Indonesia (See Figure 1). Therefore, to answer the research question, we used a linear regression analysis approach combined in a quantitative model to determine the relationship and significance between each variable.

4

2. Literature Review and Hypotheses Development

In macroeconomic theory, the human development index (HDI) depends on two main aspects, namely, economic growth and decreasing inequality between people (Sargent, 2009; Davidson, 2011). A systematic increase in HDI requires government efforts to improve the education sector that is evenly distributed because income inequality is caused, one of which is the lack of education that affects the quality of human resources and mastery of skill competencies, which leads to high unemployment. Recently studies by lavrinovicha et al. (2016), Kim (2016), Shao et al. (2016), Kudasheva, Kunitsa, and Mukhamediyev (2015) states that social inequality caused by income inequality comes from unequal access to education. Besides that, income inequality, which directly affects high unemployment, will also impact health and social welfare disparities. The hope to be achieved is equal distribution of all aspects to prevent inequality in society (Gächter et al., 2017). Measuring income inequality is closely related to potential economic growth (Goschin, 2015). Many researchers have studied the causal relationship between the two with various research points of view (e.g., Hassan, Zaman, and Gul, 2015; Lyubimov, 2017). The macroeconomic theory approach states that the government can reduce income inequality through government policies comprehensively tested. In line with that, Blundell et al. (2018); Birčiaková, Stávková, and Antošová (2014) With the inequality theory approach with a deeper comparative study approach, states that in addition to government policies, the constitutional structure and patterns of government also contribute significantly to decreasing or increasing trends in income inequality. In terms of government policy, it is considering that the source of state revenue is more dominant from tax and non-tax revenue (PNBP). As in other developing countries, income inequality is still a complex problem to solve.

The theoretical relationship of Investment to income inequality is explained in a recent study by, e.g., Kudasheva et al. (2015); Halvarsson et al. (2018) states that Investment has a positive effect on reducing potential income inequality. Through Investment in the education sector, it is hoped that all elements of society can receive an education so that they have the potential to get out of the poverty trap through work. Halvarsson et al. (2018) state that it is more or less the same, namely micro-investment, significantly reduces income inequality. Through micro government regulations that are pro-production, it is hoped that government regulations will be obliged to regulate the ease of Investment at the micro-level. Then the theoretical relationship of Investment to unemployment studies from Trejo García et al. (2017) He was stated that the monetary level had a positive and significant effect on the availability of the labor market. Besides, Investment also gives essential meaning to opportunities to create labor market availability. Investment & Monetary levels have a positive and significant effect on exports. In his studies, Trejo García et al. (2017) also states that exports have an indirect impact on the long-term unemployment rate. Clarified in the study, e.g., Guerrazzi (2015); Qiong and Junhua (2015); Omri and kahouli (2014); Sadikova et al. (2017), States that Investment, GDP as well as consumption, and investment costs will affect productivity. The domino effect created by increasing productivity is directly proportional to a decrease in unemployment level (Elshamy, 2013). However, a different opinion is shown by studies from (e.g., Sadiku et al., 2015; Ghoshray et al., 2016; Strat et al., 2015), which states that Investment does not have a significant effect on employment to reduce unemployment. So that the solutions offered in the study by Sadikova et al. (2017) stated that government regulation through an investment that is pro to the productive labor market in each region would play an important role to be observed.

The theoretical relationship of Investment, government expenditure on economic growth, and the causality between the unemployment rate and income inequality; Afidchao et al. (2014) stated that Investment has a positive and significant effect on economic growth. Including Investment in the tourism sector and foreign direct Investment (Szkorupová, 2014; Mihaiu & Opreana, 2013). The number of entrepreneurs helps overcome income inequality by absorbing labor (Halvarsson et al., 2018). Inequality of development and welfare will significantly affect income inequality (Gächter et al., 2017; Shao et al., 2016). Lavrinovicha et al. (2015) and (Kim 2016) stated that government spending affects combating income inequality through improving human capital through education. Education and public expenditure have causality aligned to solve problems regarding the quality of life and income inequality. The Effectiveness and Efficiency of Government Expenditures has a positive and significant effect on reducing the unemployment rate through effective allocation of funds (Raišienė et al., 2014; Qiong and Junhua, 2015).

On the other hand, the poverty factor will increase the potential for psychological distress and the unemployment rate to impact meeting community needs and cause people to be trapped in poverty (O'Campo et al., 2015). Government investment and cross-border Investment have a positive and significant effect on economic growth. A growing economy also has an impact on reducing unemployment (Bouwmeester and Scholtens, 2017). Government investment and spending have a positive and significant effect on economic growth; likewise, expenditures at the micro-level and R&D (Mihaiu dan Opreana, 2013; Candemir & Zalluhoglu, 2011). However, a different opinion is shown by studies from Roşoiu (2015) and Adriana (2014), which states that GDP and government spending does not affect economic growth. The Comparative Study notes that differences in economic growth in a region's objects have a significant effect on income inequality (Han et al., 2015). Kuznets's theory approach can measure the problem of inequality. Inequality comes from government regulations and policies (Lyubimov, 2017). Export & compensation of labor and Capital Input has a positive and significant effect on reducing potential income inequality. Equitable income will ensure a reduction in income inequality (Saari, Dietzenbacher, and Los, 2015). A further study states that there are differences in income that cause inequality based on ethnicity, skilled and unskilled labor, and urban and rural areas (Hassan et al., 2015).

3. Research Methods and Materials

3.1. Data Materials

This study is designed to develop an empirical research model through each variable's direct and indirect relationships, such as Investment, government spending, economic growth, unemployment, and income inequality variables in Indonesia. Sources of data used in this study are Indonesian macroeconomic secondary data which includes data on the level of development of government investment, data on levels of government spending, data on economic growth, data on unemployment rates, and data on the ratio of income inequality in the territory of Indonesia for the period 2003 - 2018. The investment variable refers to the dimensions of investment realization of domestic and foreign Investment. Variable government expenditure refers to dimensions (e.g., ministerial and non-ministerial and institutional expenditures) and regional expenditure, consisting of transfers to the regions, regional balancing funds, regional incentive funds, special autonomy funds, and village funds). The government expenditure indicator is the government's capital expenditure budget for all provinces in billions of Rupiah during the 2003-2018 period. Economic growth variables are measured by GDP for the 2003-2013 period, including the unemployment variable during the 2003-2018 period. The Gini ratio also measures the income inequality variable in this study during the 2003-2018 period.

Tabel 1: Data Materials

Variables	Data Period (Ln)															
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Investment	6,54	6,6	7,48	7,22	7,61	7,16	7,65	7,8	8,14	8,33	8,56	8,9	9,02	9,23	8,72	9,56
Government Expenditure	29,8	29,52	29,73	29,77	29,4	29,52	29,73	29,77	29,78	29,8	29,8	29,81	29,82	29,82	29,82	29,82
Unemployment	2,2	2,22	2,31	2,29	2,17	2,05	2,02	1,92	1,88	1,7	1,69	1,65	1,74	1,66	1,61	1,57
Economic Growth	1,62	1,46	1,5	1,67	1,7	1,67	1,43	1,77	1,84	1,82	1,75	1,66	1,55	1,61	1,61	1,65
Inequality Income	-1,05	-1,14	-1,08	-1,11	-1,14	-1,08	-0,99	-1,02	-0,99	-0,97	-0,99	-0,99	-1,02	-1,02	-1,05	-1,05

3.1. Measurement

Secondary data about the variables described previously came from the accumulated average value of 18 provinces in western Indonesia; the data testing stage is to normalize the data components by compute variables using SPSS with the Ln (Log Natural) method and are described in table 1. Second is the testing phase for normality and multicollinearity of data. Third, statistical testing uses linear regression analysis to test the relationship and effect of variables directly (i.e., government expenditure and investment effect on the unemployment rate and economic growth; investment on government expenditure; economic growth. Unemployment rate; economic growth and unemployment rate on inequality income). Fourth, testing the relationship and influence of variables indirectly using the Sobel-test (i.e., government expenditure and investment on inequality income which involves unemployment rate and economic growth as intervening variables. Fifth is the hypothesis testing stage with a standard of significance (p-value < 0.05). Therefore, if it is explained in the linear regression mathematical function, the formula for testing the hypothesis is as follows:

UR	$= \pi GE + e_{GE}$	(H1)
GE	$= \pi INV + e_{INV}$	(H2)
EG	$= \pi INV + e_{INV}$	(H3)
UR	$= \pi INV + e_{INV}$	(H4)
EG	$= \pi GE + e_{GE}$	(H5)
UR	$= \pi EQ + e_{EQ}$	(H6)
IQ	$= \pi UR + e_{UR}$	(H7)
IQ	$= \pi EG + e_{EG}$	(H8)
IQ	$= \pi GE + e_{GE}$	(H9)
IQ	$= \pi INV + e_{INV}$	(H10)

When combined with equations by MacKinnon et al. (1995) then the formula is as follows:

$$Zvar = \frac{a \times \beta}{\sqrt{(\beta^2 \times sa^2 + a^2 \times s\beta^2)}} \quad \& \quad \mu = \sqrt{\frac{\Sigma Ln}{\Sigma n}} \qquad (1)$$
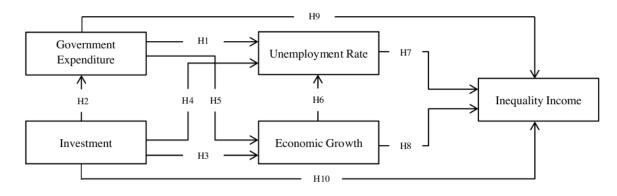
So that if it is entered in a linear equation, the mathematical function of the indirect relationship is:
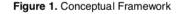
INQ	$= (Zvar_{GE} + S\alpha_{GE}) + (Zvar_{UR} + S\beta_{UR}) + e_{(Zvar)}$	(H11)
INQ	$= (Zvar_{INV} + S\alpha_{INV}) + (Zvar_{EG} + S\beta_{EG}) + e_{(Zvar)}$	(H12)
INQ	$= (Zvar_{GE} + S\alpha_{GE}) + (Zvar_{EG} + S\beta_{EG}) + e_{(Zvar)}$	(H13)
INQ	$= (Zvar_{INV} + S\alpha_{INV}) + (Zvar_{UR} + S\beta_{UR}) + e_{(Zvar)}$	(H14)

Information:
UR   = Unemployement Rate

GE   = Government Expenditure
INV   = Investment
INQ   = Inequality Income
π = Coefficient
Z-var   = Sobel-test variable
α = Unstandardized Coeffiesient value of variable independent-1
β = Unstandardized Coeffiesient value of variable independent-2
Sα = Standard error variable -1 on the mediator variable
Sβ = Standard error variable -2 on the mediator variable
e   = Standard error

Figure 1. Conceptual Framework

4. Results and Discussion

After going through several testing stages, such as computing variables using the natural log method and testing the normality and heteroscedasticity of the data, as shown in Table 2, it is stated that for data heteroscedasticity testing, the entire independent variable has a VIF value <10 so that it is noted that the heteroscedasticity assumption has been fulfilled and it is feasible to perform regression testing demonstrations. The heteroscedasticity test itself is a testing stage to assess whether there is an inequality of variants from the independent variables' residuals to the dependent. The heteroscedasticity testing results in this study indicate no similarity invariants, or it can be assumed that the data distribution pattern is not centered on one particular point. Furthermore, it is still testing the classical assumption of linear regression, which demands normality requirements; In table 2. It can also be seen that in Kolmogorov Smirnov's conclusion, the overall residual value of the variables is normal (Asymp. sig> 0.05). The normality test results also state that this analysis is accepted and then enters testing the significance and testing the hypothesis.

Furthermore, in the third stage, namely the demonstration of direct variable relationship calculations, where the government expenditure (GE) variable has a significant adverse effect on the unemployment rate (UR) with a p-value (sig = 0.022 <0.05). Suppose it is assumed that government expenditure will indirectly affect the rise or fall of the unemployment rate. In the regression equation, if in the constant state the GE coefficient = 36.053 or 3.6%; If the volume of government expenditure is in units of money measurement as in the data trend, it will constantly reduce the unemployment rate -1,148 or decrease by 0.1%. The assumption is that every 3.6% increase or decrease in government expenditure budget allocation will trigger an increase or decrease in the unemployment rate of 1.1%. In the relationship that explains the effect of Investment (INV), the government also states that there is a positive and significant effect on government expenditure (GE) with a p-value (0.024 <0.05). In the

regression coefficient, the relationship between INV on GE is 29.98 or 2.9%; the assumption affects GE of 0.079 or 0.07%. This means that an increase or decrease in INV will trigger an increase or decrease in GE by 0.07%. A significant effect is also shown in the relationship between Investment on unemployment rate with a significance value <0.01; however, there is no significant correlation between investments on economic growth. The ties that state economic growth as the dependent variable is stated to have an insignificant correlation (i.e., Investment on economic growth and government expenditure on economic growth).

Tabel 2: Statistical Results

Model	Collinearity Statistics	
	Tolerance	VIF
Investment	0.959	1.043
Government Expenditure	0.898	1.114
Economic Growth	0.909	1.100
Unemployment Rate	0.943	1.060

Normality Test					
	Inequality Income	Investment	Economic Growth	Government Expenditure	Unemployment Rate
N	16	16	16	16	16
Normal Parameters					
a. Mean	-1,0440	8,0309	1,6444	29,7319	1,9182
b. Std Deviation	,05302	,92149	,11917	,12992	,26236
Most Extreme Difference					
Absolute	,163	,099	,128	,311	,186
Positive	,111	,099	,110	,243	,186
Negative	-,163	-,091	-,128	-,311	-,142
Kolmogorov Smirnov-Z	,654	,398	,512	1,246	,745
Asymp. Sig. (2-tailed)	,786	,997	,955	,090	,635

Direct Effect									
Model	Unstd. Constant			Unstd. Coefficients		Std. Coef	T-stat	p-Value	Result
	Coef.	t-const	Sig	B	Std. Error	Beta			
GE → UR	36.053	2.731	0.016	-1.148	0.444	-0.569	-2.586	0.022	Support
INV → GE	29.098	115.324	0.000	0.079	0.031	0.560	2.527	0.024	Support
INV → EG	0.459	11.588	0.000	-0.050	0.021	-0.536	-2.378	0.032	Support
INV → UR	-1,295	-12.400	0.000	-0.257	0.033	-0.904	-7.903	0.000	Support
GE → EG	-2.487	-0.345	0.735	0.139	0.242	0.151	0.573	0.575	Not Support
EG → UR	-1.309	-7.168	0.000	1.935	0.222	0.848	8.734	0.000	Support
UR → INQ	-0.783	-10.138	0.000	-0.136	0.040	-0.674	-3.412	0.004	Support
EG → INQ	-1.309	-7.168	0.000	-1.309	0.183	-0.674	-7.168	0.000	Support
GE → INQ	-9.791	-4.357	0.001	0.294	0.076	0.721	3.893	0.002	Support
INV → INQ	-1.295	-12.400	0.000	0.031	0.013	0.542	2.414	0.030	Support

Indirect Effect								
Model	α	β	Sα	Sβ	T-Test	Std. error	p-value	Result
GE → UR → INQ	-1.148	-0.136	0.444	0.040	2.0580	0.0758	0.039	Support
INV → EG → INQ	0.079	-1.309	0.031	0.183	-2.4005	0.0430	0.016	Support
GE → EG → INQ	0.294	-1.309	0.076	0.183	-3.4026	0.1131	0.000	Support
INV → UR → INQ	-0.257	-0.136	0.033	0.040	3.1159	0.0112	0.001	Support

Then, the relationship between economic growth and the unemployment rate has a positive and significant effect. Through a direct relationship by making the inequality income variable as the dependent variable, it also states two types of significant influence, namely positive and significant (e.g., government expenditure on inequality income, Investment on inequality income) and negative significant (i.e., the unemployment rate on inequality income, economic growth on inequality income). Positive significant means that the independent variable directly affects the dependent variable, while negative significant means that the dependent variable has an indirect effect on the dependent variable.

A significant negative effect means that other variables affect the dependent variable; however, these variables are not derived from this study. Still, as shown in table 2, the relationship and influence between the variable unemployment rate (UR) and Economic Growth (EG) on Inequality Income (INQ) shows a significant negative effect (-3,412> -1.98) sig value of UR = 0.004 < 0.05 and sig. value of EG = <0.01 with the effect of t-statistic = -7.168> 1.98. The unemployment regression coefficient constantly has a value = -0.783 and -0.136. The assumption is that if the unemployment rate decreased by -0.7%, it could also reduce the inequality of people's income autonomously by -0.1%. Likewise, on the other hand, if each multiple of 0.7% unemployment rate increases or decreases, it has a linear potential to increase or decrease the multiplication of inequality income ratio per 0.1%. Furthermore, the direct effect relationship regarding the variable relationship between government expenditure (GE) and Investment (INV) on Inequality income (INQ), as illustrated in Table 2, shows a positive and significant effect. GE with t-statistical coefficient = 3.893> 1.98 with p-value = 0.002 <0.05; and INV with t-statistical coefficient = 2.414> 1.98 with p-value = 0.030 <0.05.

Furthermore, in the fourth stage, the indirect test of the relationship between Government Expenditure (GE) on Inequality income (INQ) if it is mediated by the variable unemployment rate (UR) has a positive and significant effect (t-test = 2.058> 1.98; p-value = 0.039 <0.05). The same thing is also shown by the whole test demonstration indirectly, as in Table 2, which states a significant effect between the independent and dependent variables combined with the intervening variable. The entire demonstration of the variables that have been tested is described in full, as illustrated in Figure 2.
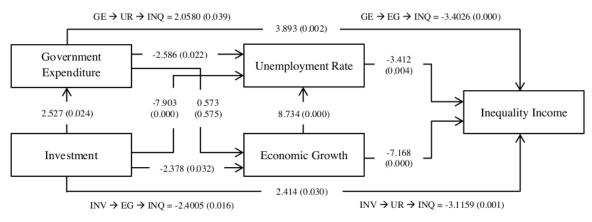

Figure 2. Full Model Analysis

With regard to the results of statistical testing, if the linearity function is substituted, it is stated as follows:

$$UR = 36.053 - 1.148_{GE} + 0.444e \qquad (H1)$$
$$GE = 29.098 + 0.079_{INV)} + 0.031e \qquad (H2)$$
$$EG = 0.459 - 0.050_{INV} + 0.021e \qquad (H3)$$
$$UR = -1,295 - 0.257_{INV} + 0.033e \qquad (H4)$$
$$EG = -2.487 + 0.139_{GE} + 0.242e \qquad (H5)$$
$$UR = -1.309 + 1.935_{EQ} + 0.222e \qquad (H6)$$
$$IQ = -0.783 - 0.136_{UR} + 0.040e \qquad (H7)$$
$$IQ = -1.309 - 1.309_{EG} + 0.183e \qquad (H8)$$

10

$$IQ \quad = -9.791 + 0.294_{GE} + 0.076e \qquad (H9)$$
$$IQ \quad = -1.295 + 0.031_{INV} + 0.013e \qquad (H10)$$
$$INQ \quad = (-1.148_{GE} + 0.444S\alpha_{GE}) + (-0.136_{UR} + 0.040S\beta_{UR}) + 0.0758e \qquad (H11)$$
$$INQ \quad = (0.079_{INV} + 0.031S\alpha_{INV}) + (-1.309_{EG} + 0.183S\beta_{EG}) + 0.0430e \qquad (H12)$$
$$INQ \quad = (0.294_{GE} + 0.076S\alpha_{GE}) + (-1.309_{EG} + 0.183S\beta_{EG}) + 0.1131e \qquad (H13)$$
$$INQ \quad = (-0.257_{INV} + 0.033S\alpha_{INV}) + (-0.136_{UR} + 0.040S\beta_{UR}) + 0.0112e \qquad (H14)$$

4.2. Discussion

We have demonstrated the relationship and influence between variables using the regression method into a conceptual causality model; in the outline, the combination of 14 hypotheses states that it has a significant effect. The variety of relationships between variables is proven to have an influence both positively and negatively on the dependent variable. Some important observations are that government expenditure (GE) and Investment have a significant role in reducing the unemployment rate (UR) and inequality income (INQ). Of course, our study results have many differences with recent studies that previously analyzed the government expenditure relationship. Government Expenditure and Investment on unemployment rate; Where most of the results of previous studies stated a significant positive relationship, whereas our study noted the opposite, namely a significant adverse effect (See., Afidchao et al., 2014; Szkorupová, 2014; Mihaiu and Opreana, 2013). With the existence of different research results, it is assumed that there are differences in the designation and funding objectives of both government expenditure and Investment. Wherein Indonesia itself, the allocation of Government expenditure in the Indonesian State budget structure is dominant to finance the operational expenditure needs of institutional and non-ministerial agencies, transfers to provinces, and costs to increase Indonesia's community development index through education health. Therefore, a significant adverse effect on the relationship between Government Expenditure (GE) on the unemployment rate (UR) means that the variation in the two variables' influence is indirectly affected. In our case study, government expenditure (GE) is an analogy that the government budget cannot directly reduce the unemployment rate level before the budget (Government expenditure) is converted into government work projects. Government work project budgets that initially come from the central government will then be transferred to various regions/provinces in Indonesia, which will create the potential for temporary employment through the work project. Apart from that, Government Expenditure (GE) in this case study has an insignificant effect on the potential for economic growth (EG). As previously explained, the assumption that government expenditure does not significantly impact economic growth is that the allocation scheme rather than government expenditure is assumed to have a more significant portion, not to directly increase the level of economic growth. But to finance operational expenditure needs and improve public welfare through the sector: education and health. Of course, such a scheme was chosen considering the demographic typology of Indonesia, which is an archipelago country with an area of 1,905 million km2 with a total population until 2021 of 267.7 million people; it is a separate task to arrive at the direction of the government expenditure policy which aims to increase economic growth.

Apart from that, government investment (INV) also has a significant negative effect on economic growth (EG) and the unemployment rate (UR). Investment in this study only involves two types of Investment: domestic Investment and Investment originating from foreign Investment. There is an indirect influence between variables, leading to the assumption that Indonesian government investment is still focused on development or infrastructure development or directed at non-labor-intensive business sectors. Therefore, the assumptions and propositions created in this study are not

much different from those described in the first paragraph of this section discussion. That Investment needs to be extracted into various work activities of the central government or local government to absorb labor which is then expected to reduce the unemployment rate level (See. Figure 3). The assumptions about this study's direct impact demonstration are then confirmed and answered clearly on the test results indirectly. The overall variation in the relationship between variables is a significant effect. Then, Government Expenditure (GE) investment (INV) has a positive and significant effect of reducing the level of income inequality (INQ). So it can be stated that the elasticity of GE and INV has the sensitivity to INQ or, in other words, that the problem of inequality income (INQ) in Indonesia is very dependent on the amount of the value of government expenditure and Investment budgeted.

Furthermore, this study also describes the effect of the variable unemployment rate (UR) and Economic growth (EG) on inequality income (INQ) which have a significant negative impact. It means that it will take a long time to achieve a reduction in inequality income in Indonesia. The vast demographic area and as an archipelagic country provide clear evidence that the problem of inequality of income in Indonesia is based on various factors that include creating labor absorption alone and various other factors that are not present in this study. Therefore the main points of this section are the drawbacks of this study. Like the high level of economic growth, which indirectly impacts reducing income inequality in Indonesia, this study illustrates that Indonesia's economic growth is uneven, or a small group of people only controls economic growth sectors.
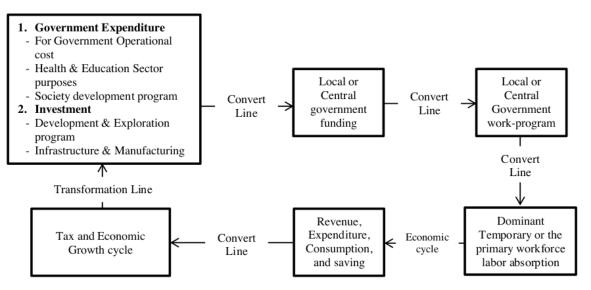

Figure 3. Government Expenditure and Investment Posture on Unemployment Reduction and Economic Growth Cycle in Indonesia

In this regard, there are differences in theoretical results both at the middle-range theory level and at the grounded theory, most of which state that there is a significant influence between government expenditure (GE), Investment (INV), on the unemployment rate (UR), economic growth (EG) and inequality income (INQ). It provides theoretical findings that government expenditure and investment's different characteristics and objectives will impact economic growth goals and the unemployment rate. Then, this study's results certainly provide an overview, especially for the government, both at the central government and local government scale. To create optimal economic growth through

government expenditure and investment allocation, it is necessary to allocate a budget to the industrial sector to absorb massive labor or allocate budgets on new economic growth sectors.

5. Conclusion

The increase in Investment and government expenditure is believed to contribute as a lever on the movement of a nation's economic development. In the macroeconomy, investment and government expenditure also play a role as a national income component, Gross Domestic Product (GDP) or Gross Domestic Product (GDP). In simple terms, the effect of Investment on a country's economy is reflected in its national income. Investment is positively correlated with GDP, but differences in this study's results provide contradictory findings. In general, it can be said that if Investment rises, GDP tends to increase or vice versa; if Investment falls, GDP tends to decrease. Some economists view the formation of investment and government spending as essential factors that play a strategic role in a country's economic growth and development. Still, this study's findings provide another broader understanding of investment and government expenditure that needs to be extracted into various actual work program activities. These two factors (investment and government expenditure) are positive and optimal for economic growth to reduce the unemployment rate and inequality income levels. In connection with increasing and making the influence of government expenditure and investment directly affects economic growth and employment. Strengthening government regulations and the orientation of using government expenditure and investment budgets are directed at the labor absorption sector and economic growth at both economies of scale. Which has become a mainstay, and the economic sector has the potential to create new economic sources.

References

Adriana, D. (2014). Revisiting the Relationship between Unemployment Rates and Shadow Economy. A Toda-Yamamoto Approach for the Case of Romania. *Procedia Economics and Finance*, *10*(14), 227–236. https://doi.org/10.1016/s2212-5671(14)00297-4

Afidchao, M. M., Musters, C. J. M., Wossink, A., Balderama, O. F., & De Snoo, G. R. (2014). Analyzing the farm level economic impact of GM corn in the Philippines. *NJAS - Wageningen Journal of Life Sciences*, *70*, 113–121. https://doi.org/10.1016/j.njas.2014.05.008

Birčiaková, N., Stávková, J., & Antošová, V. (2014). The Impact of Economic Development in the Czech Republic on the Income Inequality between Groups of Households. *Procedia Economics and Finance*, *12*(March), 57–65. https://doi.org/10.1016/s2212-5671(14)00320-7

Blundell, R., Joyce, R., Norris Keiller, A., & Ziliak, J. P. (2018). Income inequality and the labor market in Britain and the US. *Journal of Public Economics*, *162*, 48–62. https://doi.org/10.1016/j.jpubeco.2018.04.001

Bouwmeester, M. C., & Scholtens, B. (2017). Cross-border investment expenditure spillovers in European gas infrastructure. *Energy Policy*, *107*(July 2016), 371–380. https://doi.org/10.1016/j.enpol.2017.05.010

Candemir, A., & Zalluhoglu, A. E. (2011). The effect of marketing expenditures during financial crisis: The case of Turkey. *Procedia - Social and Behavioral Sciences*, *24*, 291–299. https://doi.org/10.1016/j.sbspro.2011.09.105

Damianus Andreas. (2018). *BPS: 7 Juta Orang Indonesia Menganggur, Paling Banyak Lulusan SMK - Tirto.ID*. Online Webpage. https://tirto.id/bps-7-juta-orang-indonesia-menganggur-paling-banyak-lulusan-smk-c9c9

Davidson, P. (2011). *Post Keynesian macroeconomic theory*. Edward Elgar Publishing.

Elshamy, H. (2013). The Relationship Between Unemployment and Output in Egypt. *Procedia - Social and Behavioral Sciences*, *81*, 22–26. https://doi.org/10.1016/j.sbspro.2013.06.381

Gächter, S., Mengel, F., Tsakas, E., & Vostroknutov, A. (2017). Growth and inequality in public good provision. *Journal of Public Economics*, *150*, 1–13. https://doi.org/10.1016/j.jpubeco.2017.03.002

Ghoshray, A., Ordóñez, J., & Sala, H. (2016). Euro, crisis and unemployment: Youth patterns, youth policies? *Economic Modelling*, *58*, 442–453. https://doi.org/10.1016/j.econmod.2016.05.017

Goschin, Z. (2015). Territorial Inequalities and Economic Growth in Romania. A Multi-factor Approach. *Procedia Economics and Finance*, *22*(November 2014), 690–698. https://doi.org/10.1016/s2212-5671(15)00285-3

Guerrazzi, M. (2015). Animal spirits, Investment and unemployment: An old Keynesian view of the Great Recession. *EconomiA*, *16*(3), 343–358. https://doi.org/10.1016/j.econ.2015.09.002

Halvarsson, D., Korpi, M., & Wennberg, K. (2018). Entrepreneurship and income inequality. *Journal of Economic Behavior and Organization*, *145*, 275–293. https://doi.org/10.1016/j.jebo.2017.11.003

Han, J., Zhao, Q., & Zhang, M. (2015). China's income inequality in the global context. *Perspectives in Science*, *7*, 24–29. https://doi.org/10.1016/j.pisc.2015.11.006

Hassan, S. A., Zaman, K., & Gul, S. (2015). The Relationship between Growth-Inequality-Poverty Triangle and Environmental Degradation: Unveiling the Reality. *Arab Economic and Business Journal*, *10*(1), 57–71. https://doi.org/10.1016/j.aebj.2014.05.007

Khodeir, A. N. (2016). The Relationship between the Generation of Electricity from Renewable Resources and Unemployment: An Empirical Study on the Egyptian Economy. *Arab Economic and Business Journal*, *11*(1), 16–30. https://doi.org/10.1016/j.aebj.2015.10.003

Kim, D. (2016). The associations between US state and local social spending, income inequality, and individual all-cause and cause-specific mortality: The National Longitudinal Mortality Study. *Preventive Medicine*, *84*, 62–68. https://doi.org/10.1016/j.ypmed.2015.11.013

Kudasheva, T., Kunitsa, S., & Mukhamediyev, B. (2015). Effects of Access to Education and Information-communication Technology on Income Inequality In Kazakhstan. *Procedia - Social and Behavioral Sciences*, *191*, 940–947. https://doi.org/10.1016/j.sbspro.2015.04.459

Lavrinovicha, I., Lavrinenko, O., & Teivans-Treinovskis, J. (2015). Influence of Education on Unemployment Rate and Incomes of Residents. *Procedia - Social and Behavioral Sciences*, *174*, 3824–3831. https://doi.org/10.1016/j.sbspro.2015.01.1120

Lyubimov, I. (2017). Income Inequality Revisited 60 Years Later: Piketty vs Kuznets. *Economic Policy (in Russian)*, *11*(1), 27–42. https://doi.org/10.18288/1994-5124-2016-1-03

MacKinnon, D. P., Warsi, G., & Dwyer, J. H. (1995). A simulation study of mediated effect measures. *Multivariate Behavioral Research*, *30*(1), 41–62.

Mihaiu, D. M., & Opreana, A. (2013). The Analysis of the Relationship between the Level of the Public Expenditure for Investments and de Degree of Development of the Society in Romania. *Procedia Economics and Finance*, *6*(13), 654–661. https://doi.org/10.1016/s2212-5671(13)00185-8

O'Campo, P., Molnar, A., Ng, E., Renahy, E., Mitchell, C., Shankardass, K., St. John, A., Bambra, C., & Muntaner, C. (2015). Social welfare matters: A realist review of when, how, and why unemployment insurance impacts poverty and health. *Social Science and Medicine*, *132*, 88–94. https://doi.org/10.1016/j.socscimed.2015.03.025

Omri, A., & kahouli, B. (2014). The nexus among foreign Investment, domestic capital and economic growth: Empirical evidence from the MENA region. *Research in Economics*, *68*(3), 257–263. https://doi.org/10.1016/j.rie.2013.11.001

Qiong, L., & Junhua, H. (2015). Military Expenditure and Unemployment in China1. *Procedia*

Economics and Finance, *30*(15), 498–504. https://doi.org/10.1016/s2212-5671(15)01247-2

Raišienė, A. G., Bagdonienė, J., & Bilan, Y. (2014). Inter-Institutional Interaction Results: The Effect of EU Programs on the Reduction of Long-term Unemployment. *Procedia Economics and Finance*, *16*(May), 641–650. https://doi.org/10.1016/s2212-5671(14)00852-1

Roşoiu, I. (2015). The Impact of the Government Revenues and Expenditures on the Economic Growth. *Procedia Economics and Finance*, *32*(15), 526–533. https://doi.org/10.1016/S2212-5671(15)01428-8

Saari, M. Y., Dietzenbacher, E., & Los, B. (2015). Sources of Income Growth and Inequality Across Ethnic Groups in Malaysia, 1970-2000. *World Development*, *76*, 311–328. https://doi.org/10.1016/j.worlddev.2015.07.015

Sadikova, M., Faisal, F., & Resatoglu, N. G. (2017). Influence of energy use, foreign direct Investment and population growth on unemployment for Russian Federation. *Procedia Computer Science*, *120*, 706–711. https://doi.org/10.1016/j.procs.2017.11.299

Sadiku, M., Ibraimi, A., & Sadiku, L. (2015). Econometric Estimation of the Relationship between Unemployment Rate and Economic Growth of FYR of Macedonia. *Procedia Economics and Finance*, *19*(15), 69–81. https://doi.org/10.1016/s2212-5671(15)00009-x

Sargent, T. J. (2009). *Dynamic macroeconomic theory*. Harvard University Press.

Shao, C., Meng, X., Cui, S., Wang, J., & Li, C. (2016). Income-related health inequality of migrant workers in China and its decomposition: An analysis based on the 2012 China Labor-force Dynamics Survey data. *Journal of the Chinese Medical Association*, *79*(10), 531–537. https://doi.org/10.1016/j.jcma.2016.02.009

Shen, W., Yang, S. C. S., & Zanna, L. F. (2018). Government spending effects in low-income countries. *Journal of Development Economics*, *133*(November 2015), 201–219. https://doi.org/10.1016/j.jdeveco.2018.02.005

Strat, V. A., Davidescu(Alexandru), A., & Paul(Vass), A. M. (2015). FDI and The Unemployment - A Causality Analysis for the Latest EU Members. *Procedia Economics and Finance*, *23*(October 2014), 635–643. https://doi.org/10.1016/S2212-5671(15)00448-7

Szkorupová, Z. (2014). A Causal Relationship between Foreign Direct Investment, Economic Growth and Export for Slovakia. *Procedia Economics and Finance*, *15*, 123–128. https://doi.org/10.1016/S2212-5671(14)00458-4

Trejo García, J. C., Rivera Hernández, E. C., & Ríos Bolívar, H. (2017). Analysis of the hysteresis of unemployment in Mexico in the face of macroeconomic shocks. *Contaduría y Administración*, *62*(4), 1249–1269. https://doi.org/10.1016/j.cya.2017.06.013

www.bbc.com. (2014). *Ketimpangan pendapatan berdampak pada pertumbuhan ekonomi - BBC News Indonesia*. Online Webpage. https://www.bbc.com/indonesia/majalah/2014/12/141209_bisnis_ketimpangan_pendapatan

www.kemenkeu.go.id. (2018). *Informasi APBN 2018*. Online Webpage. https://www.kemenkeu.go.id/media/10409/apbn-kita-edisi-agustus-2018.pdf

www.worldbank.org. (2015). *Meluasnya Ketimpangan di Indonesia*. Online Webpage. http://www.worldbank.org/in/news/feature/2015/12/08/indonesia-rising-divide

Yenny Tjoe. (2018). *Seberapa Parah Ketimpangan Ekonomi di Indonesia?* Online Webpage. https://ekonomi.kompas.com/read/2018/08/31/100200826/seberapa-parah-ketimpangan-ekonomi-di-indonesia-

Macroeconomic Factors Effect on Inequality Income: Evidence from Indonesia