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Simultaneous Analysis of Unemployment Rates and Economic Growth In Java

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ABSTRACT: This research analyzes the simultaneous effect of unemployment and economic growth on the Island of Java from 2010 to 2022. Our data were analyzed using the Two-Stage Least Square method. Our estimation result shows that economic growth and general allocation fund (DAU) variables are statistically significant and adversely affect unemployment. Special allocation funds (DAK), revenue sharing funds (DBH), and foreign direct investment (PMA) do not affect the unemployment rate. Furthermore, local own-source revenues (PAD) and the human development index (IPM) are statistically significant and positively affect economic growth. In contrast, variables such as other legitimate regional income, special allocation funds (DAK), and COVID-19 dummy variables negatively and significantly affect economic growth. Unemployment and PMDN do not significantly affect economic growth.

Keywords: Simultaneous Analysis, Fiscal Independence, TSLS

ABSTRAK: *Penelitian ini menganalisis hubungan simultan antara tingkat pengangguran dan pertumbuhan di Pulau Jawa dari 2010-2022. Data dianalisis menggunakan teknik analisis two-stage least square. Hasil penelitian menunjukkan bahwa pertumbuhan ekonomi dan DAU berpengaruh negatif signifikan terhadap tingkat pengangguran, sedangkan DAK, DBH, dan PMA tidak berpengaruh terhadap tingkat pengangguran. Selanjutnya PAD dan IPM berpengaruh positif signifikan terhadap pertumbuhan ekonomi. Lain-lain pendapatan daerah yang sah, DAK, variabel dummy Covid-19 berpengaruh negatif signifikan terhadap pertumbuhan ekonomi. Tingkat pengangguran dan PMDN tidak berpengaruh signifikan terhadap pertumbuhan ekonomi.*

Kata Kunci: *pasar karbon, penyerap karbon, perubahan iklim, instrumen keuangan, sektor kehutanan*

INTRODUCTION

Unemployment is a latent problem that is important to be addressed by each country including Indonesia. This is because the unemployment problem has a multiplier effect in both the social and economic sectors. Unemployment is a situation when job seekers are looking for a job but the availability of jobs is not appropriate so that job-seekers are not able to get a job (Franita, 2016; Mankiw, 2020b). During the period 2015-2022, at Southeast Asian level, Indonesia's unemployment status was ranked second highest after Brunei Darussalam, with an average unemployability rate of 4 per cent. This is because of the huge gap between human capital and infrastructure, which impedes competitiveness and the ability to create labour (World Bank 2023).

The unemployment rate in Indonesia from 2018-2022 is quite fluctuating. Highest unemployment in 2020. This is due to the Covid-19 pandemic, which has caused economic inhibition. In 2021-2022, the unemployment rate will decline again, as the post-Covid19 economic performance improves (Central Agency Statistic, 2023d). At the national level, compared to other islands, Java has the highest unemployment rate. As of 2022, the unemployment rate in Java reached 12.978 percent. This figure is higher than the national unemployability rate of 11.690 percent (Amalia & Sari, 2019; Central Agency Statistic, 2023).

Okun's Law explains that unemployment and economic growth are two important components of closely related economic activity. This is because when the labor force produces goods and services, the unemployment rate will decrease and economic growth will increase (Mankiw, 2016). Economic growth is the process of changing the economic conditions of a country continuously moving towards a better state over a certain period of time. Economic growth has become one of the determinants of society's well-being. This is because economic growth is closely linked to other macro variables (Central Agency Statistic, 2020; Mankiw, 2016).

At Southeast Asian level, Indonesia's economic growth in 2022 was the fourth highest after Malaysia, Vietnam, and Cambodia, with an economic growth rate of 5.3 percent. During the period 2011-2022, economic growth was quite fluctuating. Economic growth is at its lowest in 2020, reaching -2.1 percent. This is due to the presence of the Covid-19 pandemic, which has slowed economic activity. Economic growth has rebounded in 2021-2022 with the improvement of the Covid-19. Compared with other islands, the rate of economic growth of Java is quite fluctuating with the sharp decline in economic growth in 2020 (World Bank, 2023; Central Agency Statistic, 2020). Based on Gross Regional Domestic Product (GRDP) to the national economy, Java in 2022 gave the highest GRDP contribution compared to other islands with a value of 56.48 percent. This is due to Java Island becoming one of the islands that dominate the economic structure and become the center of economic activity in Indonesia (Central Agency Statistic, 2023).

In addition to economic growth, the government is also implementing various mechanisms to reduce the unemployment rate. The government through fiscal decentralization carries out transfers of funds to the region (TKDD) with the aim of improving the capacity of the region and developing economic activities. The balancing funds provided can be General Allocation Fund (DAU), Special Allocation fund (DAK) and ProfIt Sharing Fund (DBH). Canavire-Bacarreza et al., (2020); Carniti et al., (2019); Hanif et al., (2020); Pan et al., (2020); Roy et al., (2019); Song et al., (2022) explains that fiscal decentralization is an important programms on economic growth. In addition to using the transmission of balance funds, the local government needs to optimize the Regional Originally Income (PAD) so that it can dig financial resources belonging to its own region (Pangestu et al., 2022). Putro (2016) explains that DBH and PAD have a significant negative impact on the unemployment rate. This is because DBH and PAD became one of the sources of financing used for labour production and also funding government affairs in order to encourage improved welfare of the masses.

In addition to PAD, DAU, DAK, DBH, the income component obtained by the region also comes from other legitimate local income that comes from grants or aid funds from the central government and also other local governments. Putro, (2016) explains that DBH and PAD have a significant negative impact on the unemployment rate. This is because DBH is one of the sources of financing used for labor-building and also funds government affairs in order to promote improved welfare.

In addition to the unemployment rate, the Sollow Theory also describes the influence of availability of investment and quality technology supported by the quality of human capital can affect economic growth (Mankiw, 2016). Investments can be made in foreign direct investment (PMA) and domestic direct investment (PMDN). In a study conducted by Agustini & Kurniasih (2017) explains that investment has a positive impact on economic growth. This means that the higher the investment, the greater the economic growth of a region. Data from Central Agency Statistic (2023) indicate that Java in 2022 is the island with the highest investment target compared to other islands. This is because Java Island has become the driving force of the national economy so many investors are interested in making investments.

Human capital (IPM) has become one of the key components in order to boost economic growth. Research conducted by Susanto & Rachmawati (2013) explains that the human development index has a significant positive impact on economic growth. It is means that human capital index increased, so can enhance the economic growth. Based on Central Agency Statistic (2023) that the human capital index (IPM) of Java is the highest compared to other islands with a value of 75,7 index. The high human capital index of Java Island is due to the availability of adequate infrastructure and support facilities so that it can improve human capital index (Minister of Public Works and Human Settlements, 2022).

Previous research on unemployment was conducted by Pangestu et al. (2022) who investigated the impact of the PAD and the Balance Fund on economic growth and unemployment. Adriani & Yasa (2015) also researched about the PAD and the balancing fund against the unemployment rate. Astrid & Soekapdjo (2020) researched the influence of inflation, population, IPM, PMA and PMDN on the unemployment rate in Indonesia. Widodo & Zakiah (2022) researched the influence of DAU, DAK, DBH and capital expenditure on IPM, TPT, TPAK and the poor population. Putro (2016) researched the influence of PAD, DAU, DAK, DBH, staff spending, services spending and capital spending on the unemployment rate. Alabed et al., (2022); Almula-Dhanoon et al., (2020); Borhan et al., (2023); Ebaidalla, (2016); Hasan & Sasana, (2020); Ojuolape et al., (2024) explain that investment can reduce the unemployment. It is means that investment can create new job opportunities for employee. Rori et al., (2016) studied the influence of PAD on economic growth. Teixeira & Queirós (2016) researched the impact of human capital and changes in economic structure and growth. Yunita & Sentosa (2019) researched on the influences of taxes, PMDN and labour force on growth. Sinaga et al., (2023) researched about PAD, DAU, DAK on economic growth.

Based on the previous research that has been carried out, this study aims to study the influence of the rate of economic growth, DAU, DBH, PMA and DAK on the unemployment rate. Besides, the impact of the unemployed rate, DAK, PAD, PMDN, IPM, Other legitimate regional income and dummy variables are also studied in this study against its relationship with economic growth. New in this research is the use of two-stage Least Square Data Analysis (TSLS) techniques on unemployment rate and economic growth variables. TSLS is a data analysis technique that tests two-way relationships between dependent variable. In addition, in this study other variables of the income area that are valid are also added as variables that have not been studied in previous research.

METHODS

In this study data PAD, DAU, DAK, DBH, other legitimate regional income sources are from the Ministry of Finance (DJPK), while data unemployment rate, economic growth, PMA, PMDN, and IPM sources from the Central Statistic Agency from the year 2010-2022. The objects studied in this study are six provinces on the island of Java which include the provinces of Banten, West Java, DKI Jakarta, Central Java Province, D.I. Yogyakarta Province, and East Java Province. Data in this study is panel data. The data analysis technique used is the Two-Stage Least Square (TSLS) to test the simultaneous equation of two dependent variables, namely unemployment rate and economic growth. In this study identified into simultaneous equations. This is because at equations one and two, the result of reducing the number of whole independent variables with predetermined variables is greater than the reduction of whole dependent variables by tested dependent (K-k > M-m) or so-called overidentified qualifying equations. Based on this explanation, the following are the similarities in this study:

Equation 1 :

$$TPT_{it} = \alpha_{10\,it} + \alpha_{11}PE_{2it} + \beta_{12}LnDAU_{it} + \beta_{13}LnDAK_{it} + \beta_{14}LnDBH_{it} + \beta_{15}LnPMA_{it} + \mu$$

Equation 2 :

$$PE_{it} = \alpha_{20} + \alpha_{21}TPT_{it} + \beta_{16}LnPMDN_{it} + \beta_{17}LnDAK_{it} + \beta_{18}LNIPM_{it} + \beta_{19}LnPAD_{it} + \beta_{17}LnLLPS_{it} + Dummy + e$$

Notes :

TPT	: unemployment rate (percent)
PE	: economic growth (percent)
PAD	: originally revenue (percent)
DAU	: general alocation fund (percent)
DAK	: specific alocation fund (percent)
DBH	: profit sharing funds (percent)
LLPS	: other legitimate regional income (percent)
PMA	: foreign investment (percent)
PMDN	: domestic investment (percent)
IPM	: human capital index (percent)
Dummy	: 0 = Before pandemi Covid-19; 1 = During Pandemi Covid-19
μ	: terms of eror
α	: Constant
β	: Coefficient

RESULTS AND DISCUSSIONS

Simultaneous Test Identification

Table 1. Identification variable on Simultaneous Test

Struktural Test	*Order Condition* (K-k)....(m-1)	*Rank Condition* M-1	Decision
Unemployment Test	(8-5) > (2-1)	2-1=1	*Overidentified*
Economic Growth Test	(8-7) > (2-1)	2-1=1	*Overidentified*

Source : Data Analysis, 2024

Based on table 1, we know that this study is suitable with TSLS because the decision is overidentified (Gujarati, 2013).

Table 2. Simultaneous Test on Unemployment and Economic Growth

Equation	Simultaneous Test	
	P-value	Keputusan
(1)	(2)	(3)
TPT	0.0000	Reject H_0
PE	0.4576	Not Reject H_0

Source : Data Analysis, 2024

Table 2. shows that in the simultaneity test with TPT as an endogenous variable and PE as an exogenous variable shows a p-value <0.05 (0.000 <0.05). This means that there is a one-way relationship between economic growth and unemployment rate. Furthermore, in the simultaneity test with PE as an endogenous variable and TPT as an exogenous variable shows a p-value >0.05 (0.4576 >0.05) indicating that there is no dynamic relationship between unemployment rate and economic growth. Based on these results, it is known that there is no simultaneous relationship between unemployment rate and economic growth, but only a one-way relationship is found, namely the relationship between economic growth and unemployment rate.

Tabel 3. Exogenity Test

Equation	Exogenity Test	
	P-value	Decision
(1)	(2)	(3)
TPT	0.9407	Not reject H_0
PE	0.4902	Not reject H_0

Source : Data Analysis, 2024

Table 3. shows that in the exogeneity test, the p-value is > 0.05 in the TPT equation (0.9376 > 0.05) while the p-value is > 0.05 in the PE equation (0.4624 > 0.05). This means that the results of this study pass the exogeneity test so that they are valid using the two-stage least square (2SLS) model.

Tabel 4. Corellation Test

Equation	F-table	Simultaneous Test	
		F-Stat	Decision
(1)	(2)	(3)	(4)
TPT	$F_{0,05(4,69)}$ = 0,568	24.58	Not reject H_0
PE	$F_{0,05(2,69)}$ = 10,75	19.93	Not reject H_0

Source : Data Analysis, 2024

Based on the correlation test in table 4. it is known that between the two endogenous variables, namely the unemployment rate and economic growth, the F table value <F statistics (0.568 <24.58 and 10.75 <19.93) which means failing to reject H0. This indicates that there is a weak relationship between the two endogenous variables.

Unemployment Analysis

The Best Model

After testing using the Chow test, it is known that the p-value of the cross-section Chi-square is 0.0000 < 0.05 thus proving that FEM is the chosen model. Further, Hausman's test was carried out and it was found that the random cross-section p-value was 0.0000 < 0.05 thus indicating that the FEM model was chosen. This explanation on the table below :

Tabel 5. Chow Test

Cross-section F	0.0000
Cross-section Chi-square	0.0000

Source : Data Analysis, 2024

Tabel 6. Uji Hausman

Cross-section random	0.0000

Source : Data Analysis, 2024

Panel Data Regression Two-Stage Least Square on Unemployment Rate (Fixed Effect Model)

Contanta value is 37.925 which means when economic growth, DAK, DAU, DBH, and PMA is zero, so the unemployment rate is 37,925 percent. Coeffeicient value on economic growth is -0.198, it is mean when the economic growth increase one percent so will decreace the unemployment rate by 0.198 percent. DAK does not have a significant impact on the employment rate because of the p-value of 0.534 > 0.05. Coefficient value of DAU is -1.549 1.549 which means if the DAU increases one percent then the unemployee rate drops by 1.549 percent. DBH has no significant influence on the level of employment since the p value is 0.053 > 0,055. PMA does not significantly influence the unemployment rate because the p -value is 0.250 > 0.05. R-square shows the value of 0.8773, which means variation of independent variable can explains the dependent variable by 87.73 percent while the remaining remains are left by other independent variables outside the research model.

Table 7. Panel Data Regression Two-Stage Least Square on Unemployment Rate (Fixed Effect Model)

Dependent Variable	Unemployment Rate	
Variable	Coefficient	P-value
C	37.925740	0.0006
EG	-0.198207	0.0273
LnDAK	-0.053486	0.534
LnDAU	-1.549350	0.0156
LnDBH	0.685034	0.0533
LnPMA	-0.,207220	0.2506
R-Squared		0.877312
Prob (F-statistic)		0.000000

Source : Analysis Data, 2024

$$TPTit = 37{,}925740 - 0.198207PE_{it} - 0.053486DAK_{it} - 1.549350DAU_{it} + 0{,}556108DBH_{it} - 0.207220PMA_{it}$$

Classical Assumption Test

Normality Test

Based on the normality test, it is known that the Jarque-Bera p-value is 0.0000 < 0.05. It means the residual is not distributed normally. However Sahab (2019) explained that in big data with samples of research > 30 then the normality test is not a priority.

Multicolinearity Test

Based on the multicolinearity test, it is known that all of independent variabel in this research have no corellation. It is because the correlation value of independent variable < 0.9.

Heteroscedasticity Test

Based on the heteroskedasticity test, it is known that in this research the heteroskedasticity problem can be tolerated. It is because the p-value > 0,05 on all of independent variable.

Autocorrelation Test

Based on autocorrelation test, it is known that the research is exposed to a positive autocorrelation problem. This is because the Durbin Waston (d) is between zero and dL (0 < 0,82 < 1,49). However Basuki & Yuliadi (2014) explained that in panel data regression, autocorrelation tests were not a priority. This is because in panel data, classical assumption tests are required multicolinearity tests and heterocadastisity tests.

Discussion

The Effect of Economic Growth on Unemployment

The regression results in this study show that economic growth has a significant negative impact on the unemployment rate. The results of this study are in line with Amalia & Sari (2019) which explains that when economic growth is increased then the unemployability rate will decrease. When economic growth increases then the production of goods and services will also increase. This will boost the absorption of labor so that it can suppress the unemployment rate.

Based on the regression results of this study, it shows that DAK has no significant influence on the decline in the unemployment rate. This is because the use of DAK is a specific grant so its use has been determined by the central government. The local government has no authority to manage DAK's funds except to accelerate the implementation of national priority programmes (Baihawafi & Sebayang, 2023; Mankiw, 2020a; Salindeho, 2016; Soylu et al., 2018).

The Effect of DAU on Economic Growth

Based on the regression results of this study, the DAU has a significant negative impact on the unemployment rate. DAUs are often used as the main support for local expenditure. The use of DAU's

in the form of block grants has led the local government to have a flexibility in its management. Through the DAU transmission, local governments can accelerate the economic activity so that economic growth will increase and followed by increased labour absorption. This is in line with a study by Pinem et al., (2021) which explains that when the DAU is increased it will be able to reduce the unemployment rate.

The Effect of Profit Sharing Funds on Unemployment

Based on the regression results of this study, it is known that profit sharing funds has no impact on unemployment. The low amount of profit sharing funds cannot be utilized optimally by the government because most regions obtain profit sharing funds from the non-tax sector. The majority of profit sharing funds come from the primary sector, namely natural resource wealth, causing low profit sharing funds obtained by the regions. This is because the availability of natural resources is limited, causing the contribution of profit sharing funds to be less felt by the community. The low receipt of regional revenue sharing funds is ultimately unable to increase employment opportunities for workers so it is unable to reduce the unemployment rate (Majid et al., 2020; Nurman, 2013; Roy et al., 2019).

The Effect of Foreign Direct Investment on Unemployment

Based on the regression results of this study, it is known that PMA has no impact on unemployment. The inflow of foreign capital into the country is often a capital investment in the form of machine investment in most industries so it does not affect the increased availability of jobs. Besides, there are many foreign companies when investing capital in Indonesia, often have brought labour from their countries. This leads to the inflow of foreign capital having no effect on the absorption of labour (Djamin, 2020; Ravika Famala Sari, 2016).

Economic Growth Analysis

After testing using the Chow test, it is known that the p-value of the cross-section Chi-square is 0,5773 > 0,05 thus proving that CEM is the chosen model. Further, Lagrange Multiplier's test was carried out and it was found that the p-value cross-section breusch-pagan was 0,1620 > 0,05 thus indicating that the CEM model was chosen.

Table 8. Panel Data Regression on Enconomic Growth (Common Effect Model)

Variable	Coefficient	P-value
C	-56.39072	0.093
TPT	-0.169663	0.275
LnPMDN	0.336508	0.081
LnDAK	-0.738608	0.000
LnIPM	12.93339	0.049
LnPAD	1.157431	0.015
LnLLPS	-0.639211	0.000
Dummy	-3.72879	0.000
R-Squared		0,543
Prob (F-Statistic)		0.000

Source : Analysis Data, 2024

$$\hat{}PE_{it} = -56.390 - 0.169TPT_{it} + 0.336PMDN_{it} - 0.738DAK_{it} + 12.933IPM_{it} + 1.157PAD_{it} - 0.639LLPS_{it} - 3.728Dummy + \mu$$

Constanta value is -56.390 it's mean if unemployment rate, PMDN, DAK, IPM, PAD, LLPS and Dummy is zero, so the economic growth is -56.390 percent. Unemployment rate has no effect on economic growth because p-value 0.275 > 0.05. PMDN has no effect on economic growth because the p-value 0.081 > 0,05. Coefficient value of is -0.738 which means that DAK increase one percent, so the economic growth decrease on 0.738 percent. Coefficient value of human capital index is 12.933 which

means that PMA increase one index so will enhance the economic growth on 12.933 percent. Coefficient value of PAD is 1.157 which means that PAD increase one percent so will enhance the economic growth on 1.157 percent. Coefficient value of LLPS is -0.639 which means that other legitimate regional income increase one percent , so the economic growth decrease on 0.639 percent. Coefficient dummy variable is -3.728 which means that if all of independent variable is zero, so economic growth is decreased on -60.11951 percent.

Classical Assumption Test

Normality Test

Based on the normality test, it is known that the Jarque-Bera p-value is 0.0000 < 0.05. It means the residual is not distributed normally. However Sahab (2019) explained that in big data with samples of research > 30 then the normality test is not a priority.

Multicolinearity Test

Based on the multicolinearity test, it is known that all of independent variabel in this research have no corellation. It is because the correlation value of independent variable < 0.9.

Heteroscedasticity Test

Based on the heteroskedasticity test, it is known that in this research the heteroskedasticity problem can be tolerated. It is because the p-value > 0.05 on all of independent variable.

Autocorrelation Test

Based on autocorrelation test, it is known that the value of *Durbin-Waston* is between on dU and 4-dU (1.83 < 1.99 < 2.16). It is means that in economic growth model, the autocorrelation can be tolerated.

Discussion

The Effect of Economic Growth on Unemployment

Based on the regression results that have been carried out, it shows that the unemployment rate has no influence on economic growth. The results of this study are in line with Aprilya & Juliprijanto (2021) which explains that increasing or decreasing unemployment rates have no impact on economic growth even Java is the center of the national economy with most of its economic activity based on labor-intensive, capital-intensive and high-tech industries (Department of Industry and Commerce West Java, 2020).

In 2021, BPS RI (2023) recorded that there are as many as 24,694 large and medium-sized processing industries that are in Java Island. This amount has increased from the previous year recorded only as much as 23.744 industries. The increase in industrial quantities is not followed by a significant absorption of labor. In medium and large industries, the majority is capital-intensive so that the production of goods and services can continue to increase even with a relatively small use of labour. This means that working or not, the labour has no impact on economic growth.

The Effect of PMDN on Economic Growth

Based on the results of the regression that has been carried out shows that PMDN has no influence on economic growth. The existence of PMDN is often not balanced with the availability of supporting infrastructure that can support economic activities. The low interest of investors and the subsequently unfavourable industrial climate are factors that cause the PMDN's lack of influence on economic growth (Putri & Cahyono, 2014; Sutrisna & Yanthi, 2021).

The Effect of DAK on Economic Growth

Based on the regression results that have been carried out, it shows that DAK has a significant negative impact on economic growth. The use of grant-specific DAK makes the implementation of DAK focused on national priority programmes that are generally aimed at improving the quality of human capital, and are not directly related to economic growth. The local government has also been charged with providing a ten-percent support fund taken from the DAK. This has led to a decrease in the allocation of DAK (Hendriwiyanto, 2014; Jannah & Nasir, 2018; Saputra, 2015).

The Effect of other legitimate regional income on Economic Growth

Based on the regression results that have been carried out, it shows that other legitimate regional incomes have a significant negative impact on economic growth. Other legitimate local income can be a grant fund or financial assistance. In its implementation, the funds are used by the local government to address the poverty problem, which leads to the existence of other funds of legitimate local income that are unable to have a positive impact on economic growth(Sianturi, 2017).

The Effect of Human Capital Index on Economic Growth

Based on the regression results that have been carried out, it shows that human capital index has a significant positive impact on economic growth. Human capital becomes an important component of increasing the economic growth of a country. The higher the quality of human beings, the better their ability to utilize resources. This ultimately affects the increasing economic growth (Arifin & Fadllan, 2021; Istianto et al., 2021). This is in line with a study conducted by Putri et al., (2023); Angrist et al., (2021); Zhang & Danish, (2019); Oliinyk et al., (2021); Rodionov et al., (2018); Ferraz et al., (2018) which explains that human capital index has a positive significant impact on economic growth.

The Effect of Other Legitimate of Regional Income on Economic Growth

Based on the regression results that have been carried out, it shows that PAD has a significant positive impact on economic growth. PAD becomes the income component that reflects the fiscal independence of a region. The higher the fiscal independence of a region, the less dependence on the balancing fund. Further PAD proceeds can be used by local governments to finance direct and indirect expenditure so as to boost economic growth (Kusumawati & Wiksuana, 2018). Research conducted by Indriyani & Wahyudi (2021) & Rori et al., (2016) explains that the higher PAD will be able to enhance economic growth.

The Effect of Dummy Variable on Economic Growth

Based on the regression results that have been carried out, it shows that the dummy variable has a significant negative impact on economic growth. It shows that the presence of the Covid-19 pandemic has slowed economic performance as well as caused export performance to contract. Widiastuti & Silfiana (2021) explained that the presence of the Covid-19 pandemic caused economic growth in Java Island to decline sharply. This is in line with study conducted by Altig et al., (2020); Khan et al., (2021); Rasul et al., (2021); Ahmad et al., (2020); Hiscott et al., (2020); Jena et al.,(2021) that show the Covid-19 has a negative significant impact on economic growth.

CONCLUSION

On the basis of the Panel's data regression, on the first equation it is known that partially the variables of economic growth and the DAU have a significant negative impact on the unemployment rate, whereas the DAK, DBH and PMA have no significant effect on the level of unemployed. Together the economic growth, DAU, DAC, DDBH and DMA have significant influence on the unemployment rate. On the second equation, the PAD and the IPM have significant positive impact on economic growth. Other legitimate regional income and dummy variables have a significant negative impact on economic growth. Unemployment and PMDN have no significant impact on economic growth. It is known that unemployment rates, PMDN, DAK, other legitimate regional income, IPM, PAD, and dummy variables have significant influence on economic growth. Simultaneous testing or a TSLS of the two dependent variables was not proven in this study, because in the study only economic growth had a significant impact on the unemployment rate, while the unemployed rate did not have a significant effect on economic growth.

The study provides policy recommendations related to optimization of balanced funds, regional income and investment so that it can boost economic growth and lower the unemployment rate. Moreover, human capital, which is one of the key components in supporting accelerated economic growth, needs to continue to be improved. This can be done through improved quality of education, quality of health and infrastructure development.

The limitation of this research is that the independent variable used is focused on income positions so that this research has not been studied in relation to spending positions / expenditure positions used in order to increase economic growth or decrease the unemployment rate in Java Island. Based on the explanation, the research could add spending variables to be studied in relation to the unemployment rate and economic growth.

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