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Role of Investment and Macroeconomic Variables on Unemployment in Indonesia

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Abstract

This study aims to analyze the effect of Foreign Direct Investment (FDI), domestic investment, and other macroeconomic variables towards decreasing unemployment rate in Indonesia. The macroeconomic variables applied in this study composed of inflation, Gross Domestic Product (GDP), Provincial minimum wage, and poverty. This study employed Ordinary Least Squares (OLS) model and panel data from 2010 – 2020 for 34 provinces in Indonesia. This study indicated that GDP and FDI play crucial role in decreasing number of unemployment rate in Indonesia. These two independent variables had negative and significance relationship with number of unemployment rate in Indonesia. It means that if GDP and FDI raise led decreasing on number of unemployment rate in Indonesia. Meanwhile, domestic investment and other macroeconomic variables including inflation, provincial minimum wage, and poverty indicated having insignificant relationship with number of unemployment rate in Indonesia. This study concluded that GDP and FDI have important role in decreasing numbers of unemployment in Indonesia. It means that if GDP and FDI raised significantly causing more job opportunities for unemployment in Indonesia. This study is expected to give contribution for Indonesia Government and Economic policy makers to minimize numbers of unemployment in Indonesia.

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INTRODUCTION

One of the most troubling phenomena at the end of 2019 was the increasing unemployment rate in Indonesia. The Central Statistics Agency (BPS) noted that within a period of six months, the number of unemployed in the country had increased by 230,000 . BPS data as of August 2019 showed that 7.05 million people did not have a job, a figure which had increased by 3.3 percent from the February total of 6.82 million. The Open Unemployment Rate (TPT) also rose from 5.01 percent in February 2019 to 5.28 percent in August 2019. However, this figure was an improvement on the 5.34 percent of the previous August. TPT indicates the working-age population included in the unemployment group (The Indonesian Institute, 2020).

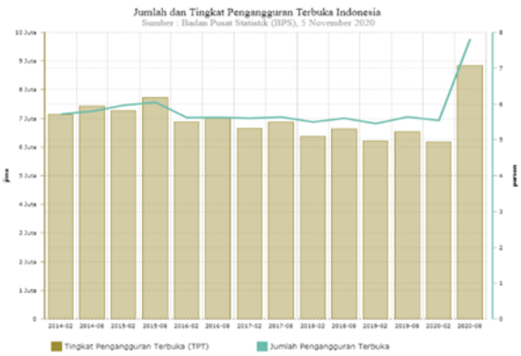

Figure 1. Open Unemployment Rate and Number of Unemployed as of August 2020
Source: Central Bureau Statistics, 2021

In August 2020, the number of unemployed increased by 2.67 million to 9.77 million people, in line with the increase in the size of the workforce of 2.36 million to 138.22 million people. Unemployment is a problem for all countries in the world ; rates that are too high will disrupt their national stability. Therefore, every country attempts to maintain the rate at a reasonable level. In macroeconomics, the problem of unemployment is discussed in relation to the labor market and is related to the balance between the level of wages and labor.

The Investment Coordinating Board (BKPM) recorded that the level of investment in 2020 was Rp. 826.3 trillion, a growth of 2.1% from the Rp. 809.6 trillion of 2019, and a figure exceeded the 2020 target of IDR 817.2 trillion.

Indonesian investment is dominated by domestic investment (PMDN), at Rp 413.5 trillion, or 50.1 % of total investment. This figure grew by 7% from the 2019 total of IDR 386.5 trillion. On the other hand, foreign investment (PMA) fell by 2.4% from the 2019 figure of Rp 423.1 trillion to Rp 412.8 trillion, or 49.9% of total investment .

Emerging markets (capital markets in developing countries), such as that of Indonesia, have always attracted the entry of investors and international diversification. As argued by Muazi and Arianti (2013), economic growth in such countries has different characteristics to that in developed countries, meaning it will be more profitable to invest in them. Therefore, the government establishes policies which encourage the creation of a conducive national business climate for investors, which will strengthen economic competitiveness and accelerate the increase in investment . Indeed, FDI is generally seen to make a significant contribution to capital accumulation and to generate the transmission of advanced knowledge and technology, which can accelerate long-term growth rates in developing countries (An & Yeh, 2020).

In addition to improving the investment climate and overcoming the unemployment problem, among other advantages, is by observing it from a macroeconomic point of view. The economic growth of a country can be said to be beneficial, as seen from the macroeconomic variables used as measures of the performance of economies. Among these are controlling inflation and poverty, increasing economic growth, and regulating minimum wages; macro variables that can contribute to reducing the unemployment rate in Indonesia.

Monetary policy is employed to control inflation. Economists argue that in the long run a high inflation rate indicates a poor economy and prompts central banks to raise interest rates, causing a contraction in the real sector. Quoted from Insukrindo in Heru Perlambang, 2010's research . Monetary policies implemented by the authorities to influence monetary variables include controlling the money supply, SBI interest rates, and exchange rates. In general, such policies achieves internal and external balance. Internal balance is usually indicated by the creation of a high balance of work , the achievement of a high economic growth rate, and maintenance of a low inflation rate. In general, such policies achieves internal and external balance. Internal balance is usually indicated by the creation of a high balance of work , the achievement of a high economic growth rate, and maintenance of a low inflation rate. On the other hand, internal balance is usually indicated by a healthy balance of payments.

Okun's Law, developed by Arthur Melvin Okun, states that unemployment and economic growth are inversely proportional (negative). The higher the rate of economic growth, the lower the unemployment rate. Economic growth is one of countries' economic problems in the long term. In macro analysis, the level of economic growth is measured by the development of the real national income achieved by a country or region. Such growth can be used as a policy tool to achieve the targetted unemployment rate or the economic growth achieved to predict the unemployment rate . Okun's Law aims to assist the Indonesian government in suppressing high unemployment rates. Job creation or reducing unemployment is one of the current priorities of the government and is seen as a long-term benefit. Increasing economic growth through GRDP can be used as a policy tool to achieve a specific unemployment rate and can be employed to predict the unemployment rate in the coming year (Astari et al., 2019).

The wage rate is also closely related to the problem of unemployment. Wages are compensation received by a work unit in the amount of money paid . The wage rate has a positive and negative effect on the unemployment rate. The negative effect is that an increase in the rate will cause an increase in production costs, leading to an increase in product prices. Such a price increase will mean consumers will reduce their purchases. This situation causes producers to reduce production and the number of workers employed, so ultimately unemployment will increase. At the same time, the positive effect can be seen in terms of the supply of labor; an increase in the wage rate will make the supply of labor increase, so the unemployment rate will fall. Wages are significant for both parties. For producers, they are production costs that must be reduced as efficiently as possible. For workers, wages are a source of income for them and their families, and a source of community expenditure. The level of wages is an essential factor in determining acommunity's living standard.

Based on the discussion above, it can be seen that foreign investment, domestic investment, and macroeconomic variables such as the inflation rate, poverty, economic growth, and wage rates will contribute significantly to the decline in the unemployment rate in Indonesia. Therefore, research is carried out "Analysis of the role of Foreign Investment (PMA), Domestic Investment (PMDN) and Macroeconomic Variables Towards Decreasing Unemployment Rate in Indonesia ."

The study aims to identify the factors that could affect the unemployment rate in Indonesia. More specifically, the objectives are: to establish the factors that influence the unemployment rate in Indonesia, identify which factors are the most dominant in influencing the unemployment rate in Indonesia, ascertain the influence of FDI, PMDN, the inflation rate, SBI, GDP, and the regional minimum wage (UMR) simultaneously and partially on the unemployment rate in Indonesia.

RESEARCH METHODS

The study used panel data which was a combination of time series and cross sections from the period 2010-2020 from 34 provinces in Indonesia, obtained from BPS and BKPM, together with supporting data from journals and books. The 34 provinces were Aceh, North Sumatra, West Sumatra, Riau, Jambi, South Sumatra, Bengkulu, Lampung, Bangka Belitung, Riau Islands, DKI Jakarta, West Java, Central Java, DI Yogyakarta, East Java, Banten, Bali, West Nusa Tenggara, East Nusa Tenggara, West Kalimantan, Central Kalimantan, South

Kalimantan, East Kalimantan, North Kalimantan, North Sulawesi, Central Sulawesi, South Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, West Papua and Papua.

An econometric model was used to analyze the effect of the independent variable on the dependent variables. To establish the level of influence of the independent variable on the dependent variables, panel data analysis can be employed. The analysis model for this panel data is as follows:

Y= f (PMA, PMDN, Inflasi, Kemiskinan, PE, UMP)... (1)

Yit = β0 + β1PMAit + β2PMDNit + β3INFLASIit + β4KEMISKINANit+ β5PEit +β6UMPit+ εit .... (q)

Where, Y is Unemployment in Indonesia, PMA is Foreign Investment in Indonesia, PMDN is Domestic Investment in Indonesia, Inflasi is Inflation Rate in Indonesia, Kemiskinan is Number of Poor People in Indonesia, PE is Indonesian economic growth, and UMP is Provincial Minimum Wage in Indonesia. To establish the level of influence of the independent variable on the dependent variables, panel data analysis can be employed. The analysis model for this panel data is as follows:
Table 1.

Table 1. Chow Test

Effect Test	Statistics	Prob
Cross-section F	16.762530	0.000***
Cross Section Chi-square	365.356214	0.000***

Source: Data Processed, 2022

The results in Table 1 show that the probability F value is 0.0000 < 0.05. This means that H1 is accepted, so FEM was employed. The results indicate that in this case FEM is better than CEM. As FEM was selected based on the results of the Chow test, future research would conduct the Hausman test to decide between FEM or REM.

Researchers used the Hausman test to determine the best model between the fixed effects approach (FEM) and the random effects approach (REM). If H0 is accepted, then REM is employed. However, if H1 is accepted, so FEM was used. Table 2 shows the Hausman test results

Table 2. Hausman Test

Effect Test	Chi-Sq Stat.	Prob
Cross-section random	44.773710	0.000***

Source: Data Processed, 2022

The results in Table 1 show that the probability F value is 0.0000 < 0.05. This means that H1. The test shows a p-value of 0.0000 <0.05, so H1 is accepted; this means that the FEM is more appropriate to use than the REM one.

RESULTS AND DISCUSSION

Based on the best model estimation, fix effect model is the best model to used in this research model. Table 3 shows the estimation results of the fixed effects approach.

Table 3. The Fixed Effect Model (Result Estimation)

Variable	Coefficient	Std Error	T-Statistic	Prob.
INF	0.042810	0.03154	1.357554	0.1755
Log (PDRB)	-3.8267	0.83931	-4.55293	0.0000
Log (UMP)	0.47679	0.31074	1.53436	0.1259
Log (PMA)	-0.1762	0.08861	-1.93141	0.0543
Log (PMDN)	-0.0432	0.05604	-0.87101	0.3844
Log (Kemiskinan)	0.65525	0.54105	1.21106	0.2267

Source: Data Processed, 2022

The estimation results of the FEM approach show that macroeconomic variables, for example inflation, have a negative and insignificant effect on the unemployment rate in

Indonesia. The value of the influence of inflation on the unemployment rate is -0.04, which indicates that an increase of 1% will result in a fall in the unemployment rate of 0.04%. The increase is one of the factors caused by the economic growth factor. However, this estimation result is not in line with Vladi and Hysa's (2019) research, which show that inflation affects inflation reduced the unemployment rate in the Western Balkans. The results of their research are also supported by Djohan (2016), who states that inflation, investment, and GDP simultaneously reduce the unemployment rate in Indonesia. The results of this study are also different from the research conducted by Astrid and Soekaptjo (2018), who show that inflation has a positive and significant impact on falls in the unemployment rate in Indonesia.

The estimation results of the FEM approach show that the GRDP variable has a negative and significant effect on the open unemployment rate (TPT) in Indonesia, at the level of 1% (0.000) based on the p-value. The value of its influence on TPT is -3.82, which signifies that each 1 percent increase in GRDP will reduce the open unemployment rate by 3.82 percent. The estimation results follow Okun's Law (Mankiw, 2006), which states that there is a negative relationship between economic growth represented by GRDP or GDP (Gross Domestic Product) and the unemployment rate. The law states that every increase in GDP above 2.5% will reduce the unemployment rate by 1%.

The results of this study are in line with those of Aisyahturido (2020), Duma (2017), Ronny (2012), and Dian (2019), who show that economic growth through GDP has a negative and significant effect on the reduction in unemployment in North Sumatra. Vladi and Hysa (2019) also show that all macroeconomic variables, including GDP, significantly impact the unemployment rate in the Western Balkan countries. In addition, Djohan (2016) shows that GDP also affects the unemployment rate in Indonesia, while Wardiansyah (2016) states that economic growth through GDP could reduce the unemployment rate on the island of Sumatra in Indonesia.

Based on the estimation results obtained from the fixed effect regression approach (FEM), the UMP (provincial minimum wage) has a positive and insignificant effect on the unemployment rate in Indonesia. The results show that the inflation value was 0.47. Nevertheless, the results are not in accordance with the research conducted by Aisyahturido (2020), who shows that UMP has a positive and significant effect on reducing the rate. This indicates that the higher the UMP, the higher the unemployment rate in Indonesia due to the increased competition between workers to receive a better salary than previously. It is also because the demand for labor is lower than the number of workers available on the labor market. Moreover, employers will also make efficient use of labor if the UMP increases too much. Entrepreneurs use this strategy to reduce production costs.

This study is not in accordance with those of Alghofari (2010) or Ari (2016), who found that the UMP had a positive and significant influence on the unemployment rate in Indonesia. They argue that if wages are set below the government's UMP level, this will create high levels of unemployment. Furthermore, if viewed from the entrepreneurs' perspective, an increase in the UMP will increase the efficiency of expenditure made by entrepreneurs. Employers will reduce the workforce if there is an increase in the UMP. In addition, Dian (2019) found that the UMP was able to reduce the unemployment rate in Indonesia.

Research shows that FDI (foreign investment) has a negative and significant effect on the unemployment rate in Indonesia. The value of the PMA regression results is 0.171, which shows that each 1% increase in FDI in Indonesia will reduce the unemployment rate by 0.71%. This means that the entry of FDI into Indonesia will reduce the unemployment rate. PMA investors are expected to create many jobs in the country.

This study is in line with research conducted by Vladi and Hysa (2019), which showed that FDI could reduce the unemployment rate in the Western Balkans. It is also in line with the findings of Balcerzak and Żurek (2009), that FDI could reduce the unemployment rate in Poland. PMA also reduces the unemployment rate in Indonesia (Djohan, 2016).

Alecsandru (2014) shows that the role of FDI is crucial in reducing the unemployment rate. The study shows a causal relationship between foreign direct investment inflows and unemployment in four of the thirteen European countries studied: Hungary, Malta, Bulgaria, and Estonia. Meanwhile, Astrid and Soekapdjo (2018) also show that FDI has a negative and significant relationship with the rate of decline in unemployment in Indonesia.

In accordance with the theory proposed by economists, namely Todaro and Smith (2020) and Jhingan (2016), the entry of FDI into developing and third countries will help their economic growth through job creation. Jhingan (2016) states that FDI is necessary to accelerate economic growth in such countries. Foreign Capital helps in industrialization, building up the overhead capital of the economy, and creating wider employment opportunities. Foreign capital brings not only money and machines but also technical skills. He opened up remote areas and worked on new, untapped resources. The risks and losses at the pioneering stage are also borne by foreign capital. Foreign Capital helps modernize society and strengthen the state and private sectors (Jhingan, 2016).

Todaro and Smith (2020) show that the growth of FDI into developing countries is very fast through private multinational corporations. FDI increased globally by around US$ 13 billion in 1970, increasing further by around US$ 200 billion in 1990. In developing countries, FDI has increased by around US$ 520 trillion.

PMDN (domestic investment) has a negative but insignificant influence on the unemployment rate in Indonesia; its value of -0.04 indicates that an increase of 1% will reduce the rate by 0.04%.

This study is in line with research conducted by Astrid and Soekapdjo (2018), who found that there was no significantly positive nor negative relationship between PMDN and any reduction in the unemployment rate in Indonesia. The results of this study indicate that PMDN does not affect the rate in the country. However, the results of this study are different to the research conducted by Muazi and Fitri (2010), Maráfiah (2016), and Jufrida (2016). All the results of this study indicate that PMDN has a positive and significant impact on reducing open unemployment in Indonesia, which means that it can create jobs and directly reduce the level of open unemployment.

The effect of poverty shows positive but insignificant results on the unemployment rate in Indonesia. The poverty variable value of 0.65 indicates that a rise in poverty of 1% will increase poverty by 0.65%. It can thus be interpreted that an increase in the number of poor people will increase the open unemployment rate in.

The results of this study are different from the results of research conducted by Muhammad and David (2019), who show that poverty has a positive and significant relationship with increases in the open unemployment rate in Niger. Research conducted by Aderounmu et al. (2021) using the ARDL (autoregressive distributive lag) approach to cointegration with the bound test also shows that poverty has a positive and significant effect on the increase in the unemployment rate in Nigeria.

CONCLUSION

This study shows that GRDP and FDI have a negative and significant effect on reducing the open unemployment rate in Indonesia. Increases in these will result in a fall in the rate. On the other hand, PMDN and other macroeconomic variables such as inflation, UMP, PMDN, and poverty have no effect on reducing the unemployment rate. The conclusion is that the role of GRDP and FDI influences the reduction of the open unemployment rate in Indonesia; an increase in GRDP and an increasing level of FDI inflows will create employment opportunities. This research could be helpful for the Indonesian government when developing economic policies to reduce the unemployment rate in the country.

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