Unemployment in Indonesia:
An Analysis of Economic Determinants from 2012-2021

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Abstract

The economic problem is one of the things that the Indonesian government must consider. One of them is unemployment because it impacts the socioeconomic conditions of society. This condition is necessary to suppress or reduce the unemployment rate. This research was conducted to determine the conditions and variables affecting Indonesia's unemployment rate. The data analysis used is an econometric model on dynamic panel data using the Generalized Method of Moments (GMM) developed by Arellano Bond. The study results show that the Human Development Index, inflation, minimum wages, and worker numbers significantly influence Indonesia's unemployment. In addition, the unemployment lag also has a significantly positive effect on unemployment. The findings of this study provide information on strategies for increasing the demand and supply of labor, wage regulation, search, match effectiveness in the labor market, and realistic short- and long-term policies.

Keywords:

unemployment rate; dynamic panel data regression; generalized method of moments (GMM)

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INTRODUCTION

Indonesia has a very dense population, so it experiences significant and speedy population growth. Therefore, economic growth is needed in order to keep pace with population growth. However, the dense population can handle problems (Johan et al., 2016). The economic problem is one of the things that the Indonesian government must consider. One of them is unemployment because it impacts the socioeconomic conditions of society (Nguyen & Le, 2022).

Unemployment is when a person or individual searching for a job focuses on obtaining information about job vacancies and the intensity of the job search but still needs to get the job they want (Hooft & Wanberg, 2012). The cases causing the unemployment rate could be the high population, limited employment opportunities disproportionate to the number of job seekers, low per capita income, and the current impact of information and communication technology (Shabbir & Alam, 2019). Indirectly, the unemployment rate becomes a macroeconomic problem that dramatically influences all aspects of social welfare (Hasan & Sun'an, 2020). Some factors affect the unemployment rate in developing countries such as Indonesia.

Figure 1. Open Unemployment Rate in Indonesia 2011-2021
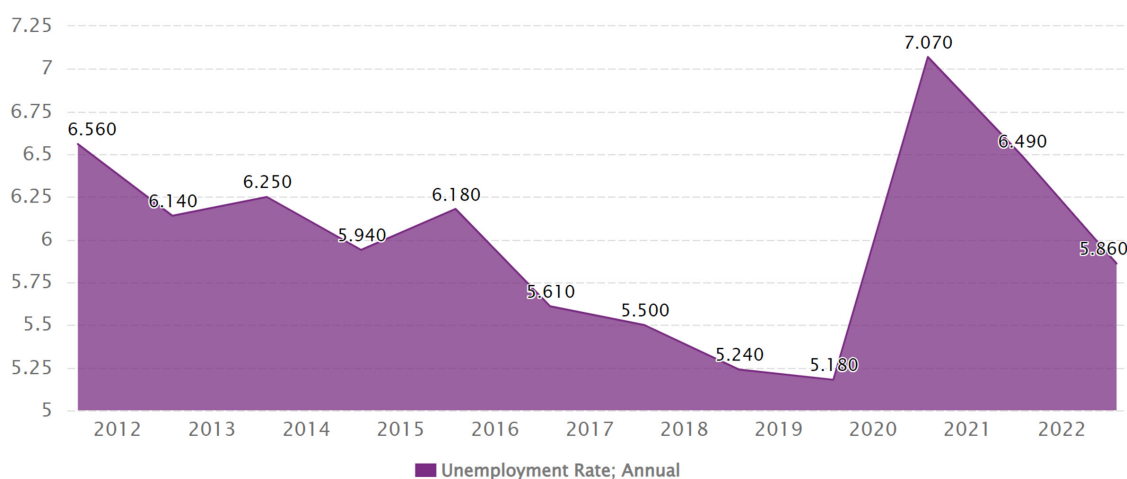
Source: Central Bureau of Statistic

Empirically, the highest unemployment rate was 7.07% when the COVID-19 pandemic first appeared in 2020. In comparison to 2019, this increased by 1.84% to its peak. Based on data, the open unemployment rate in Indonesia has fluctuated and has tended to decrease from 2015 to 2019. Unemployment in Figure 1 from 2011 to 2019 tends to be flat or does not experience an excessive increase in numbers, but in 2020 and 2021, there is a very high increase in unemployment; this is due to the COVID-19 pandemic.

The urgency of alleviating unemployment is based on considerations and trends concerning people's welfare (Abomaye-Nimenibo, 2022). Therefore, many jobs are needed to produce goods and services so that the number of unemployed people decreases and

people's welfare increases. Minimizing the unemployment rate is very important (Shi & Wang, 2022). Indirectly, people have jobs and income to meet their needs so that welfare can be felt. One of the efforts that can be made is to increase human resources based on the role of the community, which is considered necessary so that the problem of unemployment can be minimized and overcome.

The continuously increasing rate of economic growth will positively impact various aspects of economic development, including increasing development opportunities for companies to encourage job creation and improve people's welfare (Segun & Samson, 2015). The Human Development Index, or human capital, must be prioritized and strategically positioned to increase current and future economic growth and development. Increased economic growth caused by GRDP in a region is expected to be able to absorb labor, and an increase in the gross regional domestic product (GRDP) can increase production capacity (Valeriani., 2019). It can be indicated that the decline in the level of GRDP can affect the high number of unemployed people (Potocky-Tripodi, 2013). The unemployment rate in Indonesia often changes. Changes in the unemployment rate in Indonesia occur due to the increasing number of labor force members but are not accompanied by an increase in investment (Astrid & Soekapdjo, 2020).

Studies on dynamic panel data conducted by Soylu et al. (2018) about the issue of unemployment and economic growth using the unit root panel, pooled OLSP panel, and Johansen co-integration test panel for Eastern European countries for the period 1992–2014 found that unemployment was positively affected by economic growth. In other words, a 1% increase in GDP will reduce the unemployment rate by 0.08% because of Okun's coefficient for Eastern European countries and because there is co-integration between macroeconomics.

Investment has a vital role in a country's economy, and domestic investment (PMDN) is a source of investment (Cahyaningtyas, 2022). A country with a PMDN level will generate numerous new industries. As a result, PMDN can create jobs to absorb labor and reduce unemployment (Islamiah, 2020). Investment also causes an increase in the production of goods, affecting labor demand. This condition has an impact on reducing unemployment. In Indonesia, investment has a positive impact on the economy. Some policies need to be taken by the government to help increase investment by holding various collaborations with other countries, one of which is with foreign investment. Some studies conducted by Raifu (2017) in Nigeria show that inflation and FDI negatively and significantly affect unemployment.

Government outcome is also a factor that triggers the unemployment rate (Afonso, 2018). The greater the government's spending, the more taxes will be issued. Tax increases result in a more significant transfer of resources from the private sector to the public sector. One of the economic activities that can lead to people's well-being is government spending (Van & Sudhipongpracha, 2015). Therefore, increasing government outcomes, especially on development programs to expand employment opportunities, will reduce the unemployment rate. Abouelfarag & Qutb (2020) observed that government spending significantly affects the unemployment rate in Egypt.

The inside-out theory states that long-time workers in the labor market, insiders, always enjoy better job opportunities than outsiders. The insider-outsider theory examines the behavior of economic agents in markets where some participants have a more privileged position than others. Those with special privileges can keep their jobs, while outsiders will have difficulty breaking into the labor market. In addition, the imbalance between labor demand and supply causes problems in the labor market (Guszalina, 2022).

Several empirical studies on unemployment in Indonesia have been carried out on an ongoing basis to determine the extent to which macroeconomic variables can affect the unemployment rate. No empirical studies have analyzed it, and only a few studies have analyzed the short-term and long-term effects of the unemployment rate in Indonesia. This condition raises the question of whether there are short-term and long-term impacts and whether the macroeconomic variables that affect the unemployment rate are only affected in the current year. One of the empirical foundations still needs to be improved in previous studies, so ongoing research on macroeconomic aspects is required.

Most studies on the factors influencing the unemployment rate are still being conducted to obtain empirical results and a form of updating the research to be conducted. Some of the results of previous research found that the Human Development Index, inflation, minimum wage, and the number of workers had affected unemployment through a multiple linear regression approach with panel data so that only static models could be obtained. Meanwhile, many economic variables are empirically dynamic, meaning the relationship between variables. Economic variables are dynamic; they are influenced not only by variables at the same time but also by variables at a previous time.

Figure 2. Bibliometric mapping of research developments on poverty levels in Indonesia on Google Scholar using Vosviewer
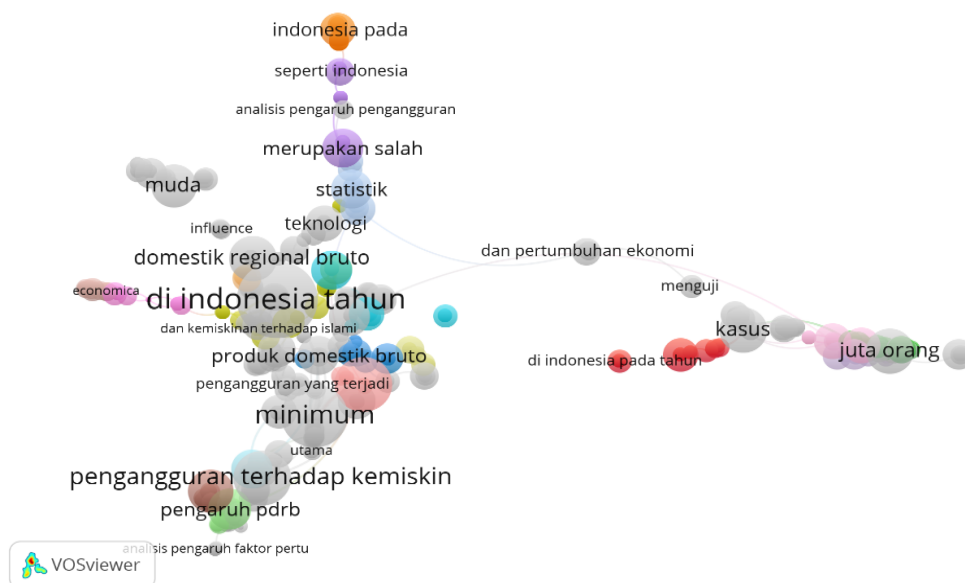
Source: Processed Data (2023)

Based on these problems, this research was conducted using dynamic panel data regression through the Arellano-Bond General Method Moment Approach (GMM). In the dynamic panel data model, there is a lag of the dependent variable, which is located as an explanatory variable, to analyze short-term and long-term impacts to form an appropriate unemployment alleviation model in Indonesia as well as the influence of independent variables on the previous year of an economic policy and producing an estimator that is not biased, consistent, and efficient.

Based on the above explanation, this study aims to analyze the relationship between these variables and the unemployment rate. As a contribution, this research can be used as empirical research investigating the factors influencing the unemployment rate. The results of this study are expected to be a reference for the government's consideration in taking corrective steps because job creation is a fundamental goal of its fiscal policy. Furthermore, this study's results will help expand the available literature to generalize the existence of variable relationships and address the unemployment problem.

This research is unique in its investigation. Researchers to identify similarities and gaps in previous studies use VOSViewer software. Vosviewer is used to analyze bibliometrics, find the most widely used references in specific disciplines, look for research topics that have the opportunity to be researched, and much more. Vosviewer can present and represent specific information about graphical bibliometric maps. Vosviewer also offers text mining functionality that can be used to build and visualize co-occurrence networks of critical terms drawn from a body of scientific literature.

Simply put, Vosviewer can be used to display large bibliometric maps in an easy way to interpret a relationship. According to VOS viewer data that researchers have processed, research related to unemployment rates in Indonesia shows that the most frequently conducted research is qualitative research related to poverty in Indonesia. Meanwhile, there are several statistical studies, but only a few. Researchers fill the gap in poverty research based on statistics and economic models. Therefore, with the results from the processed VOSViewer above, researchers can prove that research related to applying the generalized moment Arellano-Bond method to the unemployment rate in Indonesia is novel and worthy of further development.

METHOD

The data source used is secondary data from BPS Indonesia from 2012 to 2021, covering 34 provinces. Data processing was carried out using econometric applications, namely Stata software. The dynamic panel model is described in equation (1) below:

$$y_{i,t} = \delta y_{i,t-1} + x_{i,t}\beta + u_{i,t} \tag{1}$$

The specifications for the unemployment model are as follows:

$$lnEM_{i,t} = a_1 lnHDI_{i,t} + a_2 lnIHK_{i,t} + a_3 lEG_{i,t} + a_4 lnTP_{i,t} + a_5 lnW_{i,t} + a_6 lnEM_{i,t-1} + u_{i,t} \tag{2}$$

Where δ is a scalar $x_{i,t}$ represents a matrix with size $1 \times k$ and β is a matrix with size $k \times 1$ it is assumed that $u_{i,t}$ is a one-way error component. It is assumed that $\mu_i \sim IIDN(0, \sigma_v^2)$ and $v_{i,t}, \sim IIDN(0, \sigma_v^2)$. In the dynamic panel regression model, the coefficient is the short-term effect of changes in x_{it}. β is called a short run multiplier. Meanwhile, the long run multiplier ($\frac{\beta}{(1-\delta)}$) is the long-term effect of changes in x_{it} or long run multiplier. The following is a simple dynamic panel regression model, which is a dynamic data model with the lag of the dependent variable as the only independent variable in the model, as follows:

$$y_{i,t} = \delta Y_{i,t-1} + u_{i,t} \tag{3}$$

The approaches used in estimating the dynamic panel data regression model are first-difference GMM (FD-GMM) and system GMM (Sys-GMM). Arellano and Bond developed FD-GMM. This approach is used to determine that the dynamic panel data model with the most perfect GMM estimation is used, which meets the criteria of being an unbiased. This approach is used to determine that the dynamic panel data model with the most perfect GMM estimation is used, which meets the criteria of being an unbiased, valid, and consistent instrument. According to (Baltagi, 2021) a first difference was made to eliminate individual effects with the following equation:

$$y_{i,t} - y_{i,t-1} = \delta(y_{i,t} - y_{i,t-2}) + (x_{i,t} - x_{i,t-1})$$

Parameter estimation by Arellano and Bond uses the GMM principle to obtain consistent estimates. The GMM estimator for δ is obtained by minimizing the quadratic function so that,

$$\hat{\delta} = \left[\left(N^{-1} \sum_{i=1}^{N} Z_i \Delta y'_{i,t-1} \right) \widehat{W} \left(N^{-1} \sum_{i=1}^{N} Z_i \Delta y'_{i,t-1} \right) \right]^{-1}$$
$$\left[\left(N^{-1} \sum_{i=1}^{N} Z_i \Delta y'_{i,t-1} \right) \widehat{W} \left(N^{-1} \sum_{i=1}^{N} (Z'_i \Delta y_i) \right) \right]$$

So as to get a consistent estimate for δ (two step efficient estimatoris by substituting the weight $\widehat{W}$ for $\hat{\lambda}^{-1}$, so the GMM Arellano-Bond estimation results are as follows:

$$\hat{\delta} = \left[\left(N^{-1} \sum_{i=1}^{N} (\Delta y_{i,t-1} Z_{diff}) \right) \hat{\lambda}^{-1} \left(N^{-1} \sum_{i=1}^{N} (\Delta y_{i,t-1} Z_{diff}) \right) \right]^{-1}$$
$$\left[\left(N^{-1} \sum_{i=1}^{N} (\Delta y_{i,t-1} Z_{diff}) \right) \hat{\lambda}^{-1} \left(N^{-1} \sum_{i=1}^{N} (Z'_{diff} \Delta y_i) \right) \right] \tag{4}$$

The above equation is an estimate of the Arellano-Bond GMM, which is unbiased, consistent, and efficient. The System Generalized Method of Moment (Sys-GMM) is used to estimate a system of equations by combining the moment of the first difference condition and the moment of the level condition. The following is a one-step consistent estimator for the system:

$$\hat{\delta} = \left[\left(N^{-1} \sum_{i=1}^{N} \varphi_{i,-1} Z_{sys} \right) \widehat{W} \left(N^{-1} \sum_{i=1}^{N} Z'_{sys} \varphi_i \right) \right]^{-1} \left[\left(N^{-1} \sum_{i=1}^{N} \varphi_{i,-1} Z_{sys} \right) \widehat{W} \left(N^{-1} \sum_{i=1}^{N} Z'_{sys} \varphi_i \right) \right]$$

Estimator $\hat{\delta}$ is a consistent estimator and does not depend on how the weights are selected $\widehat{W}$. In one-step consistent estimator, election $\widehat{W}$ will have no effect on the

consistency of estimates, but by selecting $\widehat{W}$ optimally will produce an efficient estimate. Blundell and Bond adapted $\hat{\delta}$ which is obtained in the one-step consistent estimator, namely by replacing $\widehat{W}=\widehat{\Psi}^{-1}$ to:

$$\widehat{\Psi}^{-1} = N^{-1} \sum_{i=1}^{N} Z'_{sys}\hat{q}_i\hat{q}'_i Z_{sys}$$

The resulting efficient two-step Blundell and Bond GMM System estimator is

$$\hat{\delta} = \left[\left(N^{-1}\sum_{i=1}^{N} \varphi'_{i,-1}Z_{sys}\right)\widehat{\Psi}^{-1}\left(N^{-1}\sum_{i=1}^{N} Z'_{sys}\varphi_{i,-1}\right)\right]^{-1}$$
$$\left[\left(N^{-1}\sum_{i=1}^{N} \varphi'_{i,-1}Z_{sys}\right)\widehat{\Psi}^{-1}\left(N^{-1}\sum_{i=1}^{N} Z'_{sys}q_i\right)\right]$$

The estimation results of the two-step efficient Blundell and Bond GMM System Estimator above are more efficient than the two-steps efficient Arrelano and Bond Estimator.

RESULT AND DISCUSSION

At this stage of the study, estimates were made in the dynamic panel data regression model with the GMM two-step estimator system approach. Each dynamic panel model in the system of equations is estimated using the SYS-GMM method because it meets the criteria of the best GMM estimator, namely unbiased, valid, and consistent instruments when compared with the FD-GMM estimation results. The next step is to analyze the moment using the Arellano Bond generalized method to find out the endogenous variables of unemployment that are affected by the values of other variables and the values of relevant variables in the previous period.

Table 1. Results of Panel Data Regression Analysis With SYS-GMM

Variable	Coefficients	Standard Error	Z	P-Value
EM L1.	0,332	0,215	15,42	0,000
lnHDI	0,278	0,232	11,98	0,000
lnIHK	0,443	0,110	4,00	0,000
lnEG	-0,456	0,345	-1,32	0,186
lnTP	0,257	0,687	0,37	0,708
lnW	-1,227	0,220	-5,55	0,000
lnL	-0,670	0,275	-2,43	0,015

Source: Processed Data (2022)

According to (Arellano & Bond, 1991), the model specification test used is the Arellano and Bond test (consistency test) and the Sargan test (instrument validity test). From the results of the Sargan test in the table above, it is known that the dynamic model perfection criteria in the Sys-Gmm 31.28129 model Sargan test is not significant with a probability value of 0.907, which is more than the significance level *of* α = 5%. This shows that H_0 is not rejected, which means no correlation between errors and the conditions for a valid instrument are fulfilled.

Table 2. Sargan Test Results

Sargan Test	
Chi2 (43)	Prob > Chi2
31,281	0,907

Source: Processed Data (2022)

According to (Arellano & Bond, 1991), this test was conducted to test the consistency of the estimates obtained from the Sys-GMM process. The estimation is stated to be consistent if, in the second-order first difference, there is no autocorrelation between the residuals and the endogenous variables. Based on the results of the Arellano bond test in the table above, it shows that the use of the dynamic panel data method with the generalized Arellano bond method and the moment analysis approach meet the criteria for the best model statistically. Arellano-Bond (AB) results with a statistical value of m2 are not significant at a five percent significant level with a p-value of 0.70635 and a probability value of 0.4800. Therefore, the test meets the criteria for the consistency of the estimator.

Table 3. Arellano Bond Test Results

Arellano Bond	
Z	P-Value
0,70635	0,4800

Source: Processed Data (2022)

The test results of the pooled least squares estimator are biased upward, and the fixed-effects estimator is biased downward. The estimator from Sys-GMM falls somewhere in between. As a result, the unbiased criteria met the criteria.

Table 4. Unfamiliarity Test Result

Variable	Fem	Sys-Gmm	Pls
Unemployment L1.	0,33764	0,33396	0,80547

Source: Processed Data (2022)

In the dynamic panel regression model, the coefficient β is the short-term effect of changes in xi. β is called the shor- run multiplier. Meanwhile, $(1-\delta)$ is the long run multiplier, which is the long-term effect of changing xi. The partial test results obtained using the SYS-GMM method on the unemployment indicator equation show five exogenous variables that influence the unemployment rate according to the significant level at the 5 percents significant level. The influential variables include the lag of the unemployment variable itself (HDI), inflation, the minimum wage, and the number of workers. While the exogenous variables of economic growth and population show no significant effect on unemployment at the 5 percent significance level.

The next stage is the interpretation of the variables that have a significant effect on the indicators of unemployment in Indonesia's provinces. Based on Table 6 above, it can be seen that the lag coefficient of the unemployment indicator has a positive and statistically significant effect. Thus, it can be interpreted that the unemployment rate in the previous period had an influence on the unemployment rate in the current period in this study.

This model tries to reveal that the research results show that the Human Development Index has a positive effect on unemployment, which is partially indicated by a coefficient of 0.278 and a p-value of 0.000, which is smaller at a significance of 0.05. This positive relationship shows that if there is an increase in HDI of 1%, in the short term, it will increase unemployment by 0.278 and in the long term by 0.422, it can be concluded that the increasing in HDI of unemployment in the long term is greater than the short-term effect.

Table 5. Estimating Equation of Unemployment Indicator With SYS-GMM

Unemployment	Estimated Coefficients	Standard Error	Z	P-Value	Short-run Multiplier	Long-run Multiplier
EM L1.	0,332	0,215	15,42	0,000	-	-
lnHDI	0,278	0,232	11,98	0,000	0,278	0,422
lnIHK	0,443	0,110	4,00	0,000	0,443	0,797
lnEG	-0,456	0,345	-1,32	0,186	-0,456	-0,121
lnTP	0,257	0,687	0,37	0,708	0,257	0,686
lnW	-1,227	0,220	-5,55	0,000	-1,227	-1,68
lnL	-0,670	0,275	-2,43	0,015	-0,670	-0,108

Source: Processed Data (2022)

Furthermore, the factor that triggers an increase in the human development index but has an impact on increasing the number of unemployed in every province in Indonesia is because the standard human development index is still in the moderate category. The moderate category in the human development index shows that the role of the government has yet to be maximized in achieving an optimal human development index. The education level factor also has a positive influence on the unemployment rate. It is known that having a higher education does not guarantee that someone gets a job. Therefore, the higher the level of education, the higher the open unemployment rate in Indonesia. This condition is undoubtedly in line with previous research by Sisnita (2017) that HDI has statistically significantly affected open unemployment in Lampung Province.

This study's results follow the Keynesian theory that the Human Development Index influences unemployment by increasing people's purchasing power. The Human Development Index indicates that a country is prosperous if it has a decent standard of living (Hasan, 2022). An increase in aggregate demand can affect employment opportunities. If the aggregate demand in a company is low, it will reduce the amount of production and result in less labor supply so that the demand and supply of labor are

not balanced. This study backs up previous research by Maulana & Kyswantoro (2022), which found that the Human Development Index positively affects unemployment. The industry must maximize its ability to absorb labor, and the government must be able to guarantee the availability of job vacancies to reduce the current unemployment rate to balance the Human Development Index, which is already good.

Inflation has a significant effect on the unemployment rate in Indonesia. These results follow the Phillips curve theory establishing the relationship between inflation and unemployment. Okun's law provides a relationship between output and employment, with unemployment as output and inflation as price changes. Conditions indicate that high inflation will be followed by high unemployment. The inflation that occurred in Indonesia was high and long-term. Inflation has a short-term effect elasticity of 0.443 and a long-term effect elasticity of 0.797. This condition shows that for every 1% increase in inflation, long-term unemployment will increase by 0.797 percent.

These results also align with the research findings conducted by Gyang & Eze (2015) and Elliot (2015). These results indicate that the relatively low inflation environment associated with the inflation-targeting regime is conducive to job creation in the region (Vermeulen, 2015). It also supports the notion that low and stable inflation is required for long-term sustainable economic growth, which leads to job creation. Therefore, the respective monetary authorities should adopt a robust anti-inflationary stance through inflation-targeting policies to reduce unemployment in the region. However, these monetary policymakers must be holistic and characterized by a lack of fiscal dominance, operational transparency, credibility, and explicit quantitative objectives involving monetary authorities in the main objective of price stability.

Economic growth does not affect the open unemployment rate in Indonesia. However, in Indonesia itself, the effect of output growth (GDP) on employment is relatively negligible and weak. While the Indonesian economy is still growing, its ability to create jobs remains weak and below average. This condition still points to growing unemployment in a region where employment is not growing as the economy grows (Ziberi & Avdiu, 2020). This result is in line with the results of research (Levine, 2014), which states that GDP growth is insufficient to exceed the combined growth rate in the labor force and productivity so that a reduction in unemployment can be guaranteed in the long term. This condition shows the need to pursue sustainable long-term economic growth that can create jobs so that the unemployment rate in a region can be suppressed.

High population growth threatens the economy's ability to perform. This condition demonstrates that a broad area's relatively high population density provides an opportunity for positive population development and utilization in developing economic potential. However, the total population has no significant effect on open unemployment in Indonesia. The negative relationship is consistent with the findings population variable with a coefficient of 0.477383 and a probability of 0.6251, so it does not affect unemployment (Brahma et al., 2019).

This result is in contrast to previous studies by Gideon (2017), which found that population has a positive effect on unemployment; this is indicated by the increase in

Nigeria's population in 2014. In addition, rapid population growth can increase the dependency burden on those with a weak economy. A larger population leads to growth in the labor force, which shifts the labor supply curve upward. As noted by Folawewo & Adeboje (2014), rapid population growth leads to an expansion of the labor force, exacerbating the unemployment situation in developing countries.

The minimum wage has a negative effect on open unemployment in Indonesia. This fact shows that the high level of unemployment in Indonesia arises due to the high minimum wage but is not proportional to productivity. This condition is consistent with a competitive labor market model in which a worker's wage equals his marginal product; setting wages above this level reduces the demand for labor until the marginal product rises to higher wages. As a result, the minimum wage removes the minor productive workers from employment, leading to a concomitant reduction in employment and an increase in unemployment.

According to the research findings of Sordyl (2019), the minimum wage changes the job structure because companies choose workers who are considered the most productive, reduce employment opportunities for inefficient workers and increase unemployment. Some models assume that the influence of the employer causes wages to be set below the worker's marginal productivity and equal to the value of the worker's external choices (Engbom & Moser, 2021). Under these circumstances, the introduction of the minimum wage does not lead to a decrease in employment but a change in the division of rent between producers, with company profits decreasing and the share of labor in national income increasing (Riley & Bondibene, 2015).

The variable number of workers has a significant negative effect on the open unemployment rate in Indonesia. This condition shows that the high unemployment rate in Indonesia arises due to economic growth that is far smaller than the growth of the labor force and demographic pressures with a large labor force. This result is in line with the results of research conducted by Bakare (2011), which means that the variable number of workers significantly negatively affects the open unemployment rate in Indonesia.

This fact shows that the high unemployment rate in Indonesia arises due to economic growth that is far smaller than the growth of the labor force as well as demographic pressures with a large labor force. This result is by the results of research conducted by Bakare (2011), which shows that the high unemployment rate in Nigeria arises as a result of an increase in the supply side of labor above the demand side. The results state that when the labor supply is greater than the demand for labor, there is an excess of labor. This fact shows that the net effect of excess labor supply determines the high unemployment rate because the number of workers and the unemployment rate has a negative relationship. If there is a high number of a worker, the unemployment rate is also high. Therefore, economic growth is needed along with a decrease in the unemployment rate.

The Arellano bonding moment analysis method was carried out because, empirically, many economic variables are dynamic, meaning that the value of a variable can be influenced by the value of other variables and is influenced by the value of relevant variables in the past or previous periods. The analysis results show that the variables that affect it and the previous period's unemployment rate influence Indonesia's unemployment

rate, with an increase shown through short-term and long-term influences. This study found that the influential variables and the previous year's unemployment rate influenced this year's unemployment rate. The increase in unemployment in Indonesia is largely determined by the role of other variables and the unemployment rate in previous years.

CONCLUSION

Based on the findings of this study's data analysis and discussion, it is possible to conclude that the variable unemployment in Indonesia is influenced by five independent variable coefficients at the same time, namely the Human Development Index, inflation, population, the minimum wage, and the number of workers. In addition, the unemployment lag also has massively contributed to unemployment. Thus, unemployment this year is dominated by unemployment in the previous year. This research can enhance our understanding of unemployment and the factors that cause unemployment. The policy implies that the government or relevant institutions can take appropriate and practical steps to address the issue of unemployment. Unemployment in Indonesia has wide-ranging impacts and can affect various aspects of social and economic life. Therefore, there is a need for several implicit policies that can be taken to address the issue of unemployment in Indonesia by increasing job opportunities. Developing new economic sectors, attracting foreign investment, and providing training and education to improve the workforce's skills, making it easier for them to obtain jobs, can carry out this policy.

Increasing the quality of the Human Development Index and motivating people to continue opening their business opportunities pursue alleviation of unemployment. Nevertheless, this can also be done in other ways: by increasing the demand for and supply of labor, setting wages, and the effectiveness of search and match in the labor market and policies. Sensible short-term and long-term policies are necessary to reduce open unemployment from year to year.

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