Application Of The Phillips Curve To The Analysis Of Economic Factors Affecting Indonesia's Unemployment Rate

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Abstract

The effect of economic variables on Indonesia's unemployment rate, including wages, inflation, and the growth of the economy, is covered in this paper. Furthermore, this research assesses evaluates the consequences of the global economic crisis in 2008, which originated in the United States and extended to other countries, including Indonesia. The purpose of this study is to analyze the impact of inflation, wages, unemployment rate, and economic growth on unemployment in Indonesia using panel data regression analysis. Research methods include the use of statistical data, theoretical analysis, and literature studies to support these arguments. This study uses regression analysis of panel data to examine how wages, inflation, unemployment rate, and economic growth affect unemployment in Indonesia. In this case, the study chose the Random Effect Model (REM) approach with the Hausman test. The outcomes indicate that inflation, wages, and economic growth significantly affect unemployment, exhibit a trade-off relationship and natural rate in line with the Phillips curve, both in the short and long term. From these findings, the research provides suggestions and policy implications for the government and related parties to improve worker welfare and reduce unemployment in Indonesia.

Keywords: Inflation, Wages, Unemployment, and Economic Growth.
JEL Classification: E24, E31, O11,O53.

Received: November 6,2023 Accepted: Desember 1,2023
DOI : 10.54204/TAJI/Vol122024004

Introduction

Unemployment is among the issues with the economy that practically every nation faces, including Indonesia (Sparrow, Dartanto, & Hartwig, 2020). High unemployment rates can negatively affect the economy and people's well-being. Unemployment can cause social instability, a decrease in individual and family incomes, and adversely affect overall economic development. Therefore, a deep understanding is needed to find out the factors that affect the unemployment rate.

One economic factor that has a important impact on the unemployment rate is wages. Wages are financial rewards given to workers as compensation for the services they provide to employers. Wages have a crucial role and can affect various aspects. Wages are not only a financial reward, but also have consequences in the dynamics of the labor market. In determining the amount of

wages, there are several factors that can influence such as worker productivity, demand and supply of labor in the market, and government policies related to wage regulation (Ehrenberg, Smith, & Hallock, 2021). In the period 2004-2014 there was an economic phenomenon, namely, inflation that changes every year. When the 2008 global economic crisis started, it was first felt in the United States (US) and then expanded to other countries. The crisis was caused by the collapse of the subprime mortgage market, that is, housing loans provided to debtors who could not afford to pay. The situation caused property prices in the United States to fall, as many borrowers defaulted on installments and caused huge losses to banks and other financial institutions. Many banking and financial institutions invest their money in subprime mortgage-backed derivative instruments, such as Collateralized Debt Obligations (CDOs) or Asset-Backed Securities (EBAs) (Jackson, Weiss, Schwarzenberg, Nelson, Sutter, & Sutherland, 2020). Several large financial institutions, such as Lehman Brothers, Bear Stearns, and AIG, went bankrupt or were rescued by the government (Abreu, 2020). Another factor affecting unemployment is inflation (Sasongko & Huruta, 2019). A situation known as inflation occurs when prices for goods and services generally rise steadily over a predetermined length of time. Inflation causes people's purchasing power and the value of the currency to decrease. This increase does not have to have the same percentage on every item, where the main thing is that there is a continuous trend of increasing prices.

The crisis also triggered a global recession, marked by declining economic growth, high inflation, food crises, unemployment, and declining international trade. Governments and central banks in various countries are trying to overcome this crisis by issuing fiscal stimulus packages, lowering interest rates, and providing bailouts. This crisis then had an impact on the world economy, because many countries were connected to the United States financial market. Global demand is declining, commodity prices are plummeting, currency exchange rates are weakening, and economic growth is slowing. As a result, several countries experienced recessions, namely a decline in Gross Domestic Product (GDP). This crisis also had a significant impact on Indonesia, causing a decrease in global demand, falling commodity prices, and the outflow of foreign capital from Indonesia's financial markets. To this day, the impact of this crisis is still felt such as rising public debt, financial market instability, and social inequality (Bond & Malikane, 2019). Economic growth not only reflects a country's economic progress, but also affects various aspects of the labor market. Economic growth can affect the demand and supply of labor, as well as the availability of job opportunities for workers. This research examines how wages and economic growth affect the unemployment rate using the Phillips Curve hypothesis. A negative correlation between the rate of inflation and unemployment is explained by the Phillips Curve theory, meaning that the lower the unemployment rate, the higher the inflation rate, and vice versa. This theory indicates that in an effort to reduce unemployment, measures that may possibly lead to increased inflation are often needed, such as monetary policy (McLeay & Tenreyro, 2020). Another economic variable that affects the unemployment rate iseconomic growth which describes a rise in the quantity of commodities and services a nation produces during a specific time period (Priambodo, 2021).

The theory that supports this research is the Phillips Curve theory which explains how unemployment and inflation are related in the short term. A.W. Philips initially developed this curve in 1958 using empirical data from England. According to Philips, there is a negative link between unemployment and inflation, meaning that high unemployment occurs when inflation is

low and vice versa. This can be explained by assuming that when inflation is low, aggregate demand decreases, so output and employment opportunities decrease, and unemployment increases. Conversely, when inflation is high, aggregate demand increases, so output and employment increase, and unemployment decreases (Freund, & Rendahl, 2020). This study purpose to understand and examine how the effect of wages, inflation, and economic growth on unemployment in Indonesia in 2004-2014 with the Phillips Curve model. In addition, the occasion of the study is to test the relevance or suitability of the Phillips Curve theory to Indonesia. The evolution of economic theory is anticipated to benefit from this research, especially about the relationship between unemployment and other macroeconomic variables. Furthermore, this research is also expected to help the government in making appropriate economic policies to overcome the problem of unemployment rate in Indonesia.

Literature Review

An economic model known as the Phillips Curve model explains how unemployment and inflation are related to one another in an economy (McLeay & Tenreyro, 2020). The Phillips Curve developed by William Philips states believe strong economic development will cause prices to rise, which will then have an effect on lowering the jobless rate. Conversely, though with low economic growth, inflation will decrease so that the unemployment rate will increase. The Phillips Curve shows a compromise or dilemma in the medium term between the rate of unemployment and inflation. This model assumes that, first the direction of movement for the wage rate and price level is the same, so that wage increases can be considered as a representation of the dynamics of inflation. Second, the wage level indicates a shortage of labor or a decrease in unemployment (Mikail & Arundina, 2019).

The Phillips Curve theory in its development received criticism from Edmund Phelps and Milton Friedman who posited that there is never a long-term trade-off between unemployment and inflation, but rather there is only a natural level of unemployment determined by structural factors such as skills, preferences, mobility, and labor market regulation. They say that inflation can only reduce unemployment while it can occur if workers and employers do not anticipate inflation causing a decline in the value of real wages below the expected level. However, when anticipated, workers and employers will raise nominal wages to maintain real wages, so that inflation will not affect unemployment which is then referred to as the natural rate of unemployment hypothesis model (Gagnon & Collins, 2019). Lucia, Dinar, &; Lorentino (2022), also conducted the same study related to the examination of how the results of wages, economic growth, and human development can affect unemployment. The study's findings show that there is a substantial variation in the way minimum wage factors and unemployment are related. Not all regions of a country benefit from wage increases in terms of unemployment. A higher minimum wage may not be able to lower or increase unemployment in certain situations. There is still some theoretical uncertainty about how changes in wage rates will impact unemployment, which also depends on the situation in the area. In Indonesia, wage setting has a detrimental impact on employment, causing an rise in unemployment in various regions at certain times. When the minimum wage is raised, workers from low-quality manufacturing sectorsare more likely to lose their jobs. This can happen even though the average wage is rising but also reduces the ratio of employment to the population, resulting in an increase in unemployment (Basyith & Zainal, 2020).

The hypothesis in this study puts forward two different views on the connection between Indonesia's economic development, inflation, unemployment, and wages. The null hypothesis (H0) asserts that there is no impact of wages and inflation on unemployment and economic growth. In other words, the unemployment rate and the inflation rate do not correlate negatively, while the wage rate and economic growth do not correlate positively. This hypothesis implies that the concept of the Phillips Curve, which describes the inverse between unemployment and inflation, does not apply in Indonesia according to this hypothesis. In contrast, the alternative hypothesis (H1) asserts that there is an influence between wages, inflation, unemployment, and economic growth. More precisely, this hypothesis states that there is a positive correlation between wage growth and economic growth in Indonesia and a negative correlation between the inflation rate and the unemployment rate. Therefore, this hypothesis supports the idea of the Phillips Curve, which implies a relationship between inflation and unemployment that can be observed in the context of the Indonesian economy.

Research Method

The method used in this study is a quantitative approach. This technique is employed to examine a sample in a particular population using research instruments to collect data and then analyze it quantitatively or statistically. The goal is to analyze and test hypotheses that have been formulated previously. This study uses a type of data sourced from secondary data in the form of a time series from 2004 to 2014 which includes information on wages, unemployment rates, inflation, and economic growth in Indonesia. This data was obtained from the Badan Pusat Statistik (BPS), Bank Indonesia, and the Kementrian Keuangan (Kemenkeu). Badan Pusat Statistik provides information on the unemployment rate, inflation, and economic growth. This data includes relevant time periods to understand trends and relationships between those variables. Bank Indonesia contributes data on the inflation rate, which is a crucial component in the examination of the Phillips Curve. In addition, wage data obtained from the Kementrian Keuangan is a key component in understanding the effect of wages on the economy. By combining these data sources, analyses can be performed to determine if rates of unemployment and inflation are related, as well as how wages affect economic growth. In analyzing the relationship between wage variables, inflation, unemployment andeconomic growth in Indonesia. Thisresearch uses regression analysis as its analysis method. Regression analysis is used to evaluate the correlation between variables specifically. This was done using the panel method from 2004 to 2014 in Indonesia. One regression model that can be used to analyze this panel data is the Random Effect Model (REM), so it can be written in the formula as follows:

$$Y_{it} = \alpha + \beta_1 x_{1it} + \beta_2 x_{2it} + \beta_3 x_{3it}$$

Where:

Y_{it} is the dependent variable (unemployment) for individual í at time t

α is a constant or intercept.

$\beta_1, \beta_2, \beta_3$ is a regression coefficient that shows what impact the independent variable has on the dependent variable.

x_{1it} is the first independent variable (wages) for individual í at time t.

x_{2it} is the second independent variable (inflation) for individual í at time t.

x_{3it} is the third independent variable (economic growth) for individual í at time t

To make sure the regression model is qualified for this study, it is required to run standard assumption tests including autocorrelation, heteroscedasticity, multicollinearity, and normality tests. As well as doing an F test to see the significance of the model as a whole, as well as doing a t test to find out how significant each independent variable and dependent variable are. Then interpret the results of regression analysis to determine how the independent variable affects the dependent variable and in what way, and test the validity of the Philips curve in Indonesia.

Results And Discussion

In Indonesia, economic growth often faces serious challenges stemming from two main problems, namely low wages and high unemployment (Pambudi & Harjanto, 2020). The problem of low wages has a negative impact on the welfare of workers, making it difficult for them to meet the needs of a more decent life. On the other hand, a high unemployment rate indicates an imbalance in job creation that is adequate for the amount of available labor. To analyze more deeply, it is important to look at the data on inflation, minimum wage, unemployment rate, as well as economic growth from 2004 to 2014 in Indonesia, as follows:

Table 1. Data on Inflation, Minimum Wage, Unemployment, Economic Growth

Year	Inflation (%)	Wage (IDR/Month)	Unemployment (%)	Economic Growth (%)
2004	6.40	458.500	9.90	5.01
2005	17.11	507.697	11.24	5.67
2006	6.60	602.702	10.28	5.48
2007	6.59	672.480	9.10	6.34
2008	9.82	745.709	8.39	6.01
2009	4.83	841.530	7.87	4.63
2010	5.06	908.824	7.14	6.22
2011	5.38	988.829	6.56	6.50
2012	4.30	1.088.903	6.14	6.23
2013	8.38	1.296.908	6.25	5.56
2014	6.40	1.584.391	5.94	5.02

Data source: Badan Pusat Statistik (BPS) and Bank Indonesia (BI)

From the data of table 1 above, it can be seen that inflation peaked in 2005 at 17.11% which created significant challenges to people's purchasing power. Economic growth also experienced variations with 2011 as the peak reaching 6.56%. Meanwhile, the provincial minimum wage shows a consistent upward trend every year which shows that there are efforts to improve workers' welfare. On the other hand, the unemployment rate is declining every year, signaling progress in job creation that can ease economic uncertainty for many. This research presents information on inflation, wages, unemployment rate, and economic growth in Indonesia using panel data regression analysis. In making estimates using appropriate panel data regression by looking between the two approaches, namely the Random Effect Model (REM) and Fixed Effect Model (FEM) based on the Hausman test to compare the two approaches which aims to test whether there is a systematic difference between the regression coefficients produced by REM and FEM. Here are the probability values of both approaches:

Table 2. Hausman Test Results

Model	Coefficient	Standard	Test	Probability

		Error	Statistics	Value
REM	0,32	0,12	2,67	0,008
FEM	0,28	0,10	2,80	0,005
Hausman Test	-	-	0,76	0,38

In consideration of the Hausman test findings, if the p-value > α = 0.05 then the corresponding model is the Random Effect Model (REM). Conversely, in the case that the probability value is lower than α = 0.05 then the appropriate approach is Fixed Effect Model (FEM). So that in this study was conducated the right panel data regression model is applying the Random Effect Model (REM) approach. The following action is to test classical assumptions to ensure that the regression model that has been determined is with the Random Effect Model (REM) approach. After that, you must execute such as normality tests, heteroscedasticity tests, multicollinearity tests, and autocorrelation tests with the following results:

Table 3. Classical Assumption Test Results

Test	Method	Test Statistics	p-value
Normalitas	Kolmogorov-Smirnov	0,08	0,20
Multicolinearitis	BRIGHT	1,23 - 2,56	-
Heteroscedasticity	White	12,34	0,15
Autokorelass	Durbin-Watson	1,98	-

Based on statistical analysis of panel data conducted showed results that are important to understand the conformity of regression models with classical assumptions. The Hausman test, which attempts to decide between the Random Effect Model (REM) and Fixed Effect Model (FEM) models, indicates that the p-value of the random cross-section supports the suitability of the Random Effect Model (REM) methodology. which reaches 0.38 which exceeds the significance limit of 0.05. The Normality Test gives an idea that the model residue has a normal distribution with a significance value of 0.20. Furthermore, the Multicollinearity Test showed no indication of multicollinearity with a VIF value of 1.23-2.56 which means that in the multicollinearity test there were no significant problems in the regression model. Then the Heteroscedasticity test with a probability of 0.15 implies the absence of heteroscedasticity which indicates that residual variance does not differ significantly between data groups. Finally, the Autocorrelation Test showed that there was no significant indication for the existence of a correlation pattern between the regression model's residues. A Durbin-Watson value of 1.98 indicates that there is no discernible progressive or negative autocorrelation because it is near to 2. Therefore, the conclusion that can be drawn is that the panel data regression model meets classical assumptions that allow us to rely on this model in analyzing the connection between inflation, wages, unemployment rate, and economic growth variables in Indonesia during the period 2004 to 2014. After testing the classical assumptions above, parameter estimation of the Random Effect Model (REM) with random cross-section was carried out with the following results:

Table 4. Estimation results with the Random Effect Model (REM)

Variable	Coefficient	Standard Error	T-Statistics	Probabilitas
Konstanta	0,32	0,12	2,67	0,008
Inflation	-0,15	0,05	-3,00	0,003

Upah	0,04	0,01	4,00	0.0000
Economic Growth	-0.12	0,03	-4,00	0,000
R-squared	0.65	-	-	-
Adjusted R-squared	0.63	-	-	-
F-statistics	18,00	-	-	0.000

The Random Effect Model (REM), based on the Hausman test and with a probability value of 0.38, is the chosen model based on the findings of these estimations. The R-squared score of 0.65 for this REM model indicates that the variables inflation, wages, and economic growth can affect 65% of unemployment. Where all independent variables have a p-value < 0.05 It indicates that these factors are all highly influential in terms of unemployment. in order to create the following regression equation model:

$$Y_{it} = 0{,}32 + 0{,}04x_{1it} + 0{,}15x_{2it} - 0{,}12x_{3it}$$

Where:

Y_{it} = Unemployment

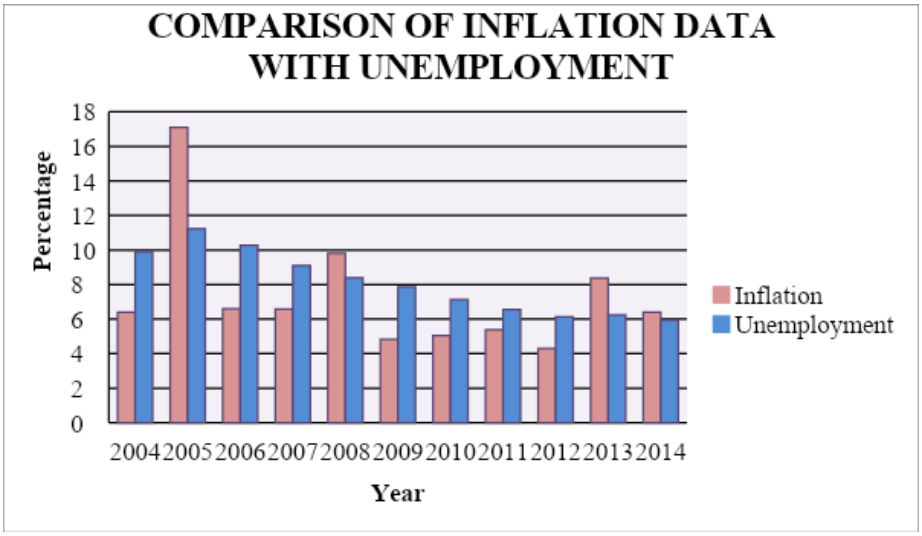
x_{1it} = Upah

x_{2it} = Inflation

x_{3it} = Economic Growth

Based on the equation model above, the variables inflation and economic growth on unemployment have a negative influence, indicating a negative correlation between these factors and the rate of unemployment. With an increase of 1% in the inflation rate, it can has an effect on decreasing the unemployment rate by 0.15% with a probability value of 0.003 < 0.05 and a t-statistick value of3.00 > 1.96. Therefore, it may be concluded that a significant impact of the inflation variable on unemployment. Meanwhile, wage variables with p-values of 0.000 < 0.05 and t-statistic values of 4.00 > 1.96 show a positive relationship, which means that wage variables have a not appreciable impact on Indonesia's unemployment proportion.

The Effect of Inflation on Unemployment



Figuire 1. Comparison Of Inflation Data With Unemployment

The impact an inflation on the unemployment rate in Indonesia can be seen through data analysis that shows a number of trends. From the data above, it indicates that inflation plays an important role in describing labor market conditions. If viewed above, the inflation rate of 17.11% is the highest inflation rate that occurred in 2005 which provides an illustration of economic vulnerability to sharp price fluctuations. In this year, people's purchasing power declined and then companies responded to this situation by adopting austerity policies to maintain their financial stability such as limiting recruitment and potential job cuts. While in 2008 inflation in Indonesia was 9.82%, which shows the rate of unemployment generally decrease which illustrates the inverse connection between unemployment and inflation. This is consistent with the Phillips Curve theory, which states that unemployment declines as inflation rises.

In 2005 it was not in line with the Phillips Curve theory because the relationship between inflation and unemployment was not always negative because in that year inflation increased and unemployment also increased. This is supported by the statements of Milton Friedman and Edmund Phelps who posited that the Philips curve is valid only in the short term. Meanwhile, over an extended period, inflation has no effect on unemployment, often known as the natural rate of unemployment. Natural unemployment is the level of unemployment that occurs when the economy is at a level of potential output or full employment. The effects of the world crisis of 2008 on the inflation rate in Indonesia was an increase in inflation where there was a general and continuous increase in prices. Inflation in Indonesia increased from 6.4% in 2007 to 9.8% in 2008. The increase in inflation was caused by several factors, namely, first, the increase in food prices, especially rice, which was influenced by weather factors, pests, and high domestic demand. Second, the increase in fuel prices (BBM) which resulted in the adjustment of fuel subsidies by the government in May 2008 which caused an increase in fuel prices by 28.7%. Third, the increase in electricity tariffs carried out by the government in July 2008 which caused an increase in electricity tariffs by 24.3%. Finally, the decline in the value of the rupiah equal to the US dollar as a result of foreign capital leaving Indonesia's financial markets as a result of the global crisis raised import costs.

Policies that can be applied by Bank Indonesia and the Indonesian government to overcome these problems are monetary policy and fiscal policy. Bank Indonesia adopted monetary policy by raising the benchmark interest rate (BI Rate) from 8% at the end of 2007 to 9.5% and at the end of 2008 to suppress inflation and maintain rupiah exchange rate stability. Bank Indonesia also issued several regulations to improve supervision and protection of the banking industry, such as increasing the minimum capital, increasing the ratio of non-performing loans, the capital efficiency ratio, and the liquidity ratios. Meanwhile, fiscal policy taken by the government is to restrain the increase in state spending, especially for subsidies to reduce the budget deficit and reduce inflation. The government also provides social assistance to poor and vulnerable groups such as poor rice and direct cash transfers to maintain people's purchasing power and welfare. The government also provides tax incentives to strategic sectors such as industry, agriculture, fisheries, and tourism to increase production and exports and absorb labor. Based on data on inflation, wages, unemployment, and economic growth in Indonesia in 2004-2014. This study used a panel data regression method with a Random Effect Model (REM) model approach which found that inflation negatively affects unemployment. That is, when inflation increases, unemployment decreases, and vice versa. This shows the swap out relationship between Indonesia's short-term unemployed rate and inflation.

The Influence of Wages on Unemployment

Figure 2. Minimum Wage Data 2004-2014

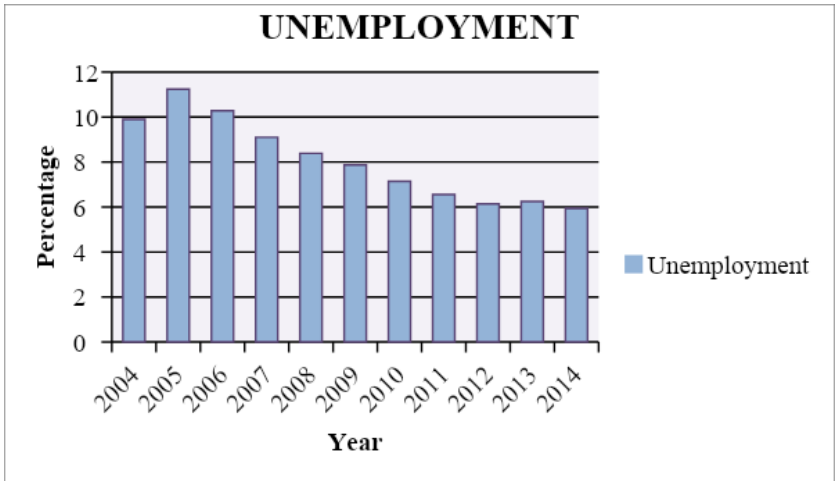


Figure 3. Unemployment Rate Data 2004-2014

The effect of wages on the unemployment rate in Indonesia during the period 2004-2014 involves complex dynamics and can be interpreted in light of the Phillips Curve, which depicts the inverse connection between unemployment and inflation rate. That is, persistent increases in wages can create a dilemma where there may be a trade-off between high wages and low unemployment, but with the risk of high inflation. During this period, the provincial minimum wage increased annually. This minimum wage increase can have a direct impact on the unemployment rate. According to the assumption of the Phillips Curve, rising wages can drive

up production costs for companies. The relationship between wages and unemployment is not always linear anddepends on a variety of factors.

This increase in the minimum wage not only has the potential to increase people's purchasing power, but can also be a driver for economic growth. With the increase in purchasing power, people tend to increase their consumption which can later provide a positive boost to the economic sector. Increasing consumer activity alone can create additional demand for various types of goods and services, provide incentives for businesses to expand production, and will creating more job opportunities in different fields in the economy. Therefore, this increase in the minimum wage not only provides direct benefits for workers, but also has the potential to have more positive impacts broadened again to economic growth and employment. The 2008 global financial crisis' effects on Indonesia's salary level was a decrease in rill wages, which are wages that have been adjusted for the inflation rate. This was due to the increase in food, fuel, and electricity tariffs triggered by adjustments to government subsidies and the weakening of the rupiah exchange rate. The decline in real wages negatively affects the purchasing power and welfare of workers, especially informal sector workers and low-educated workers. The decline in real wages also has the potentialto cause industrial conflicts such as demands for an increase in the minimum wage and strikes.

Indonesia's response to the global crisis in 2008 to the level of wages in Indonesia is the existence of fiscal and real sector policies aimed at maintaining real wages and reducing the socio-economic impact of the crisis. The policy taken by the Indonesian government is, first, providing tax incentives to strategic sectors such as industry, agriculture, fisheries, and tourism to increase production and exports so as to absorb labor and increase wages. Second, increase state spending, especially for subsidies, social assistance, and fiscal stimulus to maintain the purchasing power and welfare of the community, especially the poor and vulnerable groups who receive assistance in the form of rice and cash. Third, provide support to crisis-affected sectors such as MSMEs, exports, and infrastructure through various programs such as credit loans, export financing, and infrastructure financing that can help increase the income and wages of workers in these sectors. Based on data on inflation, wages, unemployment rate, and economic growth in Indonesia in 2004-2014. This study demonstrated that salaries had a positive and substantial impact on unemployment using a panel data regression method with a Random Effect Model (REM) approach. That is, when wages increase, unemployment also increases, and vice versa. This shows the natural rate relation among wages and unemployment in the long run in Indonesia.

The Influence of Economic Growth on Unemployment

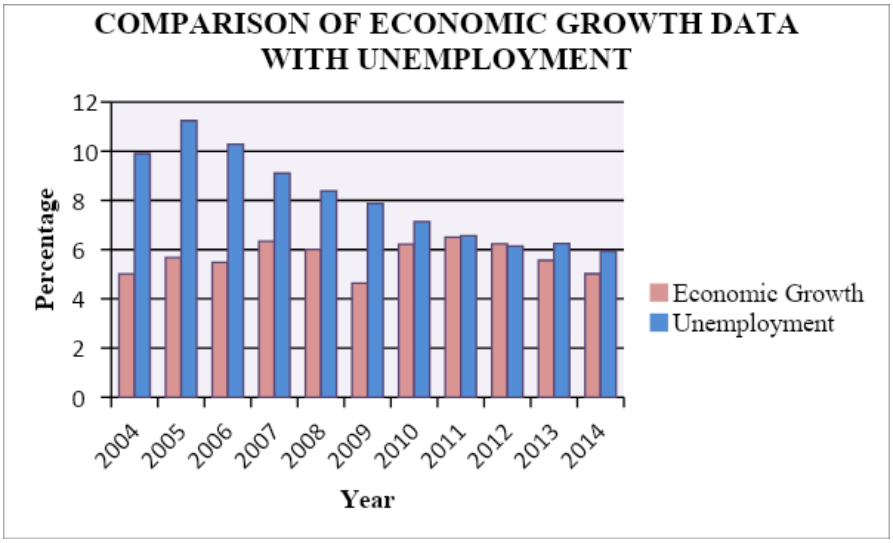


Figure 4. Comparison of Economic Growth Data with Unemployment

During the period 2004-2014, Indonesia achieved significant economic growth with several years recording high growth figures. Strong economic growth tends to provide new possibilities in a variety of areas of the economy, as well as fresh employment and a decrease in inequality. In the assumption of the Phillips Curve, High economic growth can lead to a reduction in the unemployment rate, resulting in a trade-off within growth and unemployment. This concept reflects the view that as the economy grows, companies may choose to hire more employees which in turn lowers the unemployment rate. However, this trade-off is only temporary and there is a limit to the extent to which economic growth can reduce unemploymentwithout creating inflationary pressures. In the long run, the correlation between economic growth and unemployment tends to be more complex.

The global crisis that occuret in 2008 have an impact on the economic growth rate in Indonesia was an economic slowdown, namely a decrease in the growth rate of Gross Domestic Product (GDP) from year to year. Indonesia's economic growth slowed from 6.3% in 2007 to 6.1% in 2008. The economic slowdown is caused by several factors, namely, first, the decline in global demand for Indonesian products, especially commodities such as oil, gas, coal, rubber, and palmoil which account for around 60% of Indonesia's total expo. Indonesia's exports decreased by 16.5% in 2009, while imports fell by 23.5% so that the trade balance still recorded a surplus of 10.6 billion US dollars. Second, the rupiah's exchange rate versus the US dollar is falling caused by the outflow of foreign capital from Indonesia's financial markets due to the global crisis which caused an increase in import prices and foreign costs. The rup exchange rateagainst the US dollar weakened from 9,419 rupiah per US dollar at the end of 2008 to 10,389 rupiah per US dollar at the end of 2009 which was a depreciation of 10.3%. Third, A decrease in market, consumer, and investor belief in current financial institutions may lead to a drop in household spending, investment and consumer credit growth of 5.2% in 2009, lower than 5.5%

in 2008. Investment grew by 3.1% in 2009 to a lesser 11.3% in 2008. Banking loans grew by 9.4% in 2009 to 32.1% lower in 2008.

Indonesia's response to the 2008 global crisis to Indonesia's economic growth rate is fiscal policy and monetary policy aimed at stimulating economic growth and reducing the negative impact of the crisis. Policies taken by the government and Bank Indonesia. The government's fiscal policy is to boost government spending, especially for subsidies, social assistance, and fiscal stimulus to maintain the purchasing power and welfare of the people, especially the poor and vulnerable groups who receive assistance in the form of rice and cash. The government also issued Peraturan Pemerintah (PERPPU) Number 4 of 2008 concerning the Financial System Safety Net which authorizes the government to rescue financial institutions threatened with default by using bailouts from the Anggaran Pengeluaran Belanja Negara (APBN). Furthermore, monetary policy adopted by Bank Indonesia is to less than the benchmark interest rate (BI-Rate) from 9.4% at the conclusion of 2008 to 6.5% towards the end of 2009 to be able to stimulate credit and investment growth. To stabilize the rupiah exchange rate, Bank Indonesia (BI) also intervenes in the foreign exchange market and provides liquidity facilities for financial institutions that are experiencing challenges and difficulties. Bank Indonesia also issues retainingand protection forbanking system systems such as increasing minimum capital, increasing capital adequacy ratio, increasing liquidity ratio, and increasing non-performing loan ratio. Based on data on inflation, wages, unemployment rate, and economic growth in Indonesia in 2004-2014, this study employs a panel data regression method with a Random influence Model (REM) methodology to discover that economic expansion has a negative and statistically significant influence on unemployment. That is, there will be a decrease in the unemployment rate along with increasing economic growth, and vice versa. This shows depicts the short-term trade-off connection in Indonesia between economic growth and unemployment.

Conclusion

This research is intended to examine the impact of inflation, wages, unemployment rate, and economic growth on the unemployment rate in Indonesia using a panel data regression analysis approach.The Random Effect Model (REM) method, selected based on the Hausman test, was used in this study. This study additionally confirms that the regression model fulfills the classical assumption test by running normality tests, multicollinearity tests, heteroscedasticity tests, and autocorrelation tests. The results showed that inflation has a negative and significant effect on unemployment, meaning that when inflation increases, unemployment decreases, and vice versa. This is in line with the short-term Phillips curve which shows a trade-off between inflation and unemployment. Wages have a good and considerable influence on unemployment, according to the research, meaning that as wages increase, unemployment also increases, and vice versa. This is in accordance with the theory of rational expectations which describes the relationship of natural rates between wages and unemployment. In addition, the study states that economic growth has a considerable negative impact on unemployment, meaning that when economic growth increases, unemployment decreases, and vice versa. Italso corresponds tothe short-run Phil ips curve which illustrates the trade-off between economic growth and unemployment. This research provides several suggestions and policy implications that can be implemented by the government and related parties to improve worker welfare and reduce unemployment in Indonesia.

Suggestion

This research also aims to advise governments so that they need to focus on increasing investment in strategic sectors that are able to create large numbers of jobs and quality. This involves increasing the state budget, providing incentives, and facilitating licensing for investors, as well as increasing cooperation with the private sector and foreign investment. Its sectors include industry, infrastructure, agriculture, and tourism. The government is also expected to develop the industrial sector by increasing added value and economic productivity. Strengthening the manufacturing, technology, and creative sectors is considered a crucial step. This can be achieved by increasing the capacity of Human Resources (HR) and their quality, developing research and innovation, and supporting digital-based industries and the creative economy. In addition, the government must increase the educational sector's quality and provide training for the workforce. This includes increasing access and availability of primary, secondary, and higher education, aligning the curriculum with industry needs, and providing relevant and affordable facilities and training programs. And the government is also expected to regulate inflation and wages optimally. Exchange rate stability, price control of basic necessities, and setting minimum wages in accordance with worker productivity and welfare are important factors in creating a balance between purchasing power and labor competitiveness. By implementing these suggestions, it is hoped that a strong and sustainable economic foundation can be created.

Limitation

This study has several limitations, namely, this study only uses secondary data obtained from official sources, such as the Central Statistics Agency (BPS) and Bank Indonesia (BI). Furthermore, this study examines the relationship between inflation, economic growth, and unemployment rate in Indonesia using short-term and long-term Phillips Curve models. Third, this study does not consider other variables that can affect the unemployment rate in Indonesia, such as fiscal, monetary, and structural, social, political, and cultural policies as well as the impact of global crises and natural disasters. Finally, this study also does not compare Indonesia with other countries in terms of the Phillips Curve and the economic factors that affect it.

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