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36

# THE EFFECT OF INFLATION AND INVESTMENT ON OPEN UNEMPLOYMENT IN INDONESIA

**Dewi Ernita**
**Studi Ekonomi Pembangunan, Sekolah Tinggi Ilmu Ekonomi Sakti Alam Kerinci**
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***Abstract***

*This study aims to determine the effect of inflation and investment on open unemployment in Indonesia in 2009-2023 partially and simultaneously. The research method uses multiple linear regression analysis with secondary data from Indonesia in Figures for the period 2009-2023. The results of the study indicate that partially Inflation has no effect on Open Unemployment in Indonesia in 2009-2023, because $t_{count} < t_{table}$ (-1.712 < 2.17881). and Investment has a significant effect on Open Unemployment in Indonesia in 2009-2023, because $t_{count} > t_{table}$ (-3.054 > 2.17881). Simultaneously Inflation and Investment have a significant effect on Open Unemployment in Indonesia in 2009-2023, because $t_{count} > t_{table}$ (4.663 > 3.89)*
***Keywords:*** *Open Unemployment, Inflation, Investment*

**Abstrak**

Penelitian ini bertujuan untuk mengetahui pengaruh inflasi dan investasi terhadap pengangguran terbuka di Indonesia tahun 2009-2023 secara parsial maupun simultan. Metode penelitian menggunakan analisis regresi linear berganda dengan data sekunder dari Indonesia Dalam Angka periode 2009-2023. Hasil penelitian menunjukkan bahwa secara parsial Inflasi tidak berpengaruh terhadap Pengangguran Terbuka di Indonesia tahun 2009-2023, di karenakan $_{hitung} < t_{\ tabel}$ (-1.712 < 2.17881). dan Investasi berpengaruh signifikan terhadap Pengangguran Terbuka di Indonesia tahun 2009-2023, di karenakan $t_{hitung} < t_{tabel}$ (-3.054 > 2.17881). Secara simultan Inflasi dan Investasi berpengaruh signifikan terhadap Pengangguran Terbuka di Indonesia tahun 2009-2023, di karenakan $F_{hitung} < F_{tabel}$ (4.663 > 3.89).
**Kata Kunci:** Pengangguran Terbuka, Inflasi, Investasi**.**

## I. INTRODUCTION

Indonesia as one of the developing countries and experiencing very rapid population growth is not free from employment problems. One of the problems and employment in Indonesia is the unemployment rate, the unemployment rate in Indonesia will grow every year because the population is increasing, not only that is the cause of the unemployment rate but there are several factors including inflation and investment in Indonesia itself. Inflation and investment are thought to affect the unemployment rate.

Open unemployment is one of the main problems in Indonesia. Unemployment is one of the important indicators in the employment sector, where the unemployment rate can measure the extent to which the workforce can be absorbed by existing jobs. High unemployment can be a major source of poverty, and can trigger high crime and can hinder development in the long term. unemployment will be a burden in itself, not only for the government, but also has an impact on families, the environment, and so on. Low unemployment rates can reflect good economic growth, and can reflect an increase in the quality of life of the population and an increase in income distribution, therefore the welfare of the population increases.

The high unemployment rate is usually caused by low growth in available jobs or high recruitment criteria for existing job opportunities. Currently, many companies are looking for workers with a minimum education of a diploma or bachelor's degree. This situation makes some residents feel incapable and do not have the opportunity to enter the workforce. The increasing population is also a factor in the increasing number of unemployed in Indonesia.

The solution that can be done to reduce unemployment is to create economic growth in the regions. High economic growth will have an impact on labor absorption, which means that the number of unemployed will decrease. Conversely, if economic growth decreases, unemployment will increase.

The inflation rate has a positive or negative relationship with the number of unemployed. If the inflation rate calculated is inflation that occurs in prices in general, then the high rate of inflation that occurs will result in an increase in interest rates (loans). Therefore, with high interest rates, investment to develop productive sectors will be reduced. This will affect the high number of unemployed due to low job opportunities as a result of low investment (Sukirno, 2002) (Suhendra & Wicaksono, 2020).

To see the data on Inflation, Investment and Open Unemployment in Indonesia in 2014-2023, see the following:

Table 1 Inflation and Open Unemployment in Indonesia in 2009-2023.

| Tahun | Pengangguran Terbuka (%) | Inflasi (%) |
|---|---|---|
| 2009 | 7,87 | 2,8 |
| 2010 | 7,14 | 7,0 |
| 2011 | 6,56 | 3,8 |
| 2012 | 6,14 | 4,3 |
| 2013 | 6,25 | 8,4 |
| 2014 | 5,94 | 8,4 |
| 2015 | 6,18 | 3,4 |
| 2016 | 5,61 | 3,0 |
| 2017 | 5,50 | 3,6 |

| | | |
|---|---|---|
| 2018 | 5,30 | 3,1 |
| 2019 | 5,23 | 2,7 |
| 2020 | 7,07 | 1,7 |
| 2021 | 6,49 | 1,9 |
| 2022 | 5,86 | 5,5 |
| 2023 | 5,32 | 2,6 |

Source: Indonesia in Figures 2009-2013.

From Table 1 above, we can see that inflation fluctuates from year to year, the smallest inflation rate occurred in 2020 at 1.7% while the largest inflation rate occurred in 2013 and 2014 at 8.4%.

In addition to being influenced by inflation, the unemployment rate can also be influenced by the level of investment. According to Silaban & Siagian, (2021) in Kurniawan (2011), the higher the investment rate, the lower the unemployment rate.

Table 2 Investment and Open Unemployment in Indonesia 2009-2023.

| Tahun | Pengangguran Terbuka (%) | Investasi (Milyar) |
|---|---|---|
| 2009 | 7,87 | 37 799,8 |
| 2010 | 7,14 | 60 626,3 |
| 2011 | 6,56 | 76 000,7 |
| 2012 | 6,14 | 92 182,0 |
| 2013 | 6,25 | 128 150,6 |
| 2014 | 5,94 | 156 126.3 |
| 2015 | 6,18 | 179 465.9 |
| 2016 | 5,61 | 216 230.8 |
| 2017 | 5,50 | 262 350.5 |
| 2018 | 5,30 | 328 604.9 |
| 2019 | 5,23 | 386 498.4 |
| 2020 | 7,07 | 413 535.5 |
| 2021 | 6,49 | 447 063.6 |
| 2022 | 5,86 | 552 769.0 |
| 2023 | 5,23 | 674 923.4 |

Source: Indonesia in Figures 2009-2023.

From Table 2 above we can see that investment from year to year has increased, the smallest investment rate occurred in 2009 at 37,799.8M while the highest investment rate occurred in 2023 at 674,923.4M

From the table above we can see that open unemployment from year to year has fluctuated, the smallest open unemployment rate occurred in 2019 and 2023 at 5.23% while the highest open unemployment occurred in 2009 at 7.87%.

## II. RESEARCH METHODS

This study uses a type of causality research that is classified as a quantitative approach. This study uses secondary data, and uses independent variables, namely Inflation (X1),

Investment (X2) and the dependent variable Open Unemployment Rate (Y) in Indonesia for 15 years starting from 2009-2023.

**TYPE OF DATA**

The type of data used in this study is secondary data. Secondary data is data that refers to information collected from existing sources. The data collected are in the form of documents, reports and books related to the research and other sources related to this study.

**DATA SOURCE**

The Data Source in this study is Indonesia in Figures.

**DATA COLLECTION TECHNIQUES**

In conducting this research, the data collection method used is the secondary data observation method. In order to achieve the objectives that have been formulated and answer the problems in this study, the author uses data obtained through the Indonesia in Figures website.

**ANALYSIS TOOLS**

**1. Multiple Linear Regression**

According to Sugiyono (2012:192) Linear regression analysis is used to predict how the value of the dependent variable changes if the value of the independent variable is increased or decreased. The independent variables in this study are GDP, Household Consumption, Government Expenditure, Investment, the dependent variable is Gross Domestic Product.

$Y = a + X1\beta1 + X1\beta2 + X1\beta3 + e$

Where:

Y = Open Unemployment

β1, β2, β3 = Regression Coefficient

a = Constant

X1 = Investment

X2 = Inflation

i

**2. Determination Coefficient**

The Determination Coefficient is the square of the regression coefficient. In the use of the determination coefficient is expressed in percent so it must be multiplied by 100% this determination coefficient is used to determine the size of the contribution of variable X to Y can be determined by the determination coefficient formula from Sugiyono (2011) As follows

**a. Partial Determination Coefficient**

KD = β x zero order x 100%

Where:

KD = Determination Coefficient

B = Beta

**b. Simultaneous Determination Coefficient**

According to Gujarati (2003) the Determination Coefficient is a value that states the magnitude of the influence of the independent variable on the dependent variable. To see the magnitude of the influence of each independent variable on the dependent variable, calculations are carried out using the Betax Zero Order formula. Beta is the standardized Regression Coefficient, while Zero Order is the Partial correlation of each independent variable to the dependent variable.

Kd = $r^2$ x 100%

Where :

KD = Determination Coefficient

$r^2$ = Correlation Coefficient

**3. t-test (Partial Test)**

Misbahuddin and Hasan (2013:150) t-test is a statistical test of partial correlation coefficient used to see the significance of the relationship between two interval ratio variables involving the relationship of more than two variables by holding constant the unmeasured ones. The t-test is used to determine the level of significance of partial influence. The test is carried out with a significance level: or for a 2 (two) way test and df = n - 2 - 1. Furthermore, a comparison is made between the results of the t-count calculation and the t-table. The formula used is as follows:

t-test = $\frac{b}{Sb}$

Information:

bi = regression coefficient of variable i

Sbi = Standard error of variable i

If $t$count > ttable then Ho is rejected and Ha is accepted. This means that there is a significant influence between Inflation and Investment on Open Unemployment in Indonesia. If $thitung < ttabel$ then Ho is accepted and Ha is rejected. This means that there is no significant effect between Inflation and Investment on the Open Unemployment Rate in Indonesia.

**4. F Test (Simultaneous Test)**

According to Mubahuddin and Hasan (2013:150) the F test is a multiple correlation

coefficient statistical test used to test the significance or otherwise of the relationship between more than two variables. This test is used to determine whether the independent variables (X1, X2,... Xn) simultaneously (simultaneously) have a significant effect on the dependent variable (Y), with the formula:

F test = $\frac{R_2/(k-1)}{1-R^2/(n-k)}$

Description:

R 2 = coefficient of determination

k = number of independent variables

n = number of samples

F = Hypothesis Test

The Fhit value resulting from the calculation above with an error rate of 5% (a = 0.05) and degrees of freedom of (n=k-1) with the following decision-making provisions:

1. If $Fhitung < Ftabel$ then the decision accepts the null hypothesis ($H0$), meaning that Inflation and Investment do not have a significant effect on Open Unemployment in Indonesia.
2. If $Fhitung > Ftabel$ then the decision rejects the null hypothesis ($H0$), meaning that inflation and investment have a significant effect on open unemployment in Indonesia.

## III. RESEARCH RESULTS

### Multiple Linear Regression Analysis

To find out the equation of multiple linear regression analysis on inflation and investment on open unemployment in 2009-2023, it can be seen in the table below:

**Table 3 Multiple Linear Regression Coefficientsa**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.851 | .350 | | 5.281 | .000 |
| | inflasi | -.114 | .067 | -.452 | -1.712 | .113 |
| | investasi | -.089 | .029 | -.805 | -3.054 | .010 |

**a. Dependent Variable: unemployment**

From the table above, the multiple linear regression equation can be described as follows: Y= 1.851 -0.114 X1 -.089 X2

With the explanation of the equation above is:

1. The value of a = 1.851 means that if the Inflation and Investment variables have a constant value of 1 percent, the Open Unemployment rate in Indonesia is 1.851 percent.

2. The value of b1 = -.114 means that every 1 percent inflation will increase the Open Unemployment Rate in Indonesia by 0.114 percent.
3. The value of b2 = -.089 This means that every 1 percent investment will decrease the Open Unemployment Rate in Indonesia by 0.089 percent.

**Determination Coefficient Partial Determination Coefficient**

To find out how much influence Inflation and Investment have on Open Unemployment in Indonesia in 2009-2023 partially, it can be explained in the table below:

Table 4 Partial Determination Coefficient Coefficientsa

| Model | | Standardized Coefficients | | | Correlations | | |
|---|---|---|---|---|---|---|---|
| | | Beta | t | Sig. | Zero-order | Partial | Part |
| 1 | (Constant) | | 5.281 | .000 | | | |
| | inflasi | -.452 | -1.712 | .113 | .008 | -.443 | -.371 |
| | investasi | -.805 | -3.054 | .010 | -.548 | -.661 | -.661 |

**a. Dependent Variable: unemployment**

1. The magnitude of the influence of Inflation on Open Unemployment in Indonesia in 2009-2023.

KD = B × Zero Order × 100%

= (-.452× .008) × 100% = -0.36%

From the calculation above, it can be interpreted that the magnitude of the influence of Inflation on Open Unemployment in Indonesia in 2009-2023 is -0.36%.

2. The magnitude of the influence of Investment on Open Unemployment in Indonesia in 2009-2023.

KD = B × Zero Order × 100%

= (-.805 × -.548) × 100% = 44.11%

From the calculation above, it can be interpreted that the magnitude of the influence of Investment on Open Unemployment in Indonesia in 2009-2023 is 44.11%.

**Simultaneous Determination Coefficient**

To find out how much influence Inflation and Investment have on Open Unemployment in Indonesia in 2009-2023 simultaneously, it can be explained in the table below:

Table 5 Simultaneous Determination Coefficient Summary Model

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .661[a] | .437 | .344 | .043 |

a. Predictors: (Constant), investment, inflation

Based on the table above, the coefficient of determination can be determined as follows:

KD = R2 x100%

= (0.661)2 x 100%

= 43.7%

This means that the magnitude of the influence of Inflation and Investment on Open Unemployment in Indonesia in 2009-2023 is 43.7%, while the rest (100% - 43.7%) which is 56.3% is explained by other causal factors that are not examined in this study.

**Hypothesis Testing T-Test**

To test the significance of Inflation and Investment on Open Unemployment in Indonesia in 2009-2023 partially using the t-test. with a significance level = 5%. df = n-k df = 15-3 df = 12

With the information n = number of respondents, and k = number of variables so that df = 12 is obtained, and $ttabel$ is obtained 2.17881.

Uji T Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.851 | .350 | | 5.281 | .000 |
| | inflasi | -.114 | .067 | -.452 | -1.712 | .113 |
| | investasi | -.089 | .029 | -.805 | -3.054 | .010 |

a. Dependent Variable: unemployment

Based on the table above, the results of the t-test can be seen as follows:

1. Inflation has no effect on Open Unemployment in Indonesia in 2014-2023, as evidenced by $thitung < t\ tabel$ (-1.712 < 2.17881) with a significant value of 0.113> 0.025, then H0 is accepted and Ha is rejected, meaning that there is no significant effect on Open Unemployment in Indonesia in 2009-2023.
2. Investment has no effect on Open Unemployment in Indonesia in 2014-2023, as evidenced by $thitung < ttabel$ (-3.054 > 2.17881 ) with a significant value of 0.010 < 0.025, then H0 is rejected and Ha is accepted, meaning that there is a significant influence on open unemployment in Indonesia in 2009-2023.

**F test**

To test the significance of the influence of inflation and investment on open unemployment in Indonesia in 2009-2023, simultaneously use the f test. with a significant level of 5%

df1 = k-1 df2 = n - k df1 = 3-1 df2 = 15 - 3 df1 = 2 df2 = 12

With the information where n = number of respondents and k = number of variables so that df1 = 2 and df2 = 12 are obtained and $ftabel$ = 3.89

Table 7 F test

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | .018 | 2 | .009 | 4.663 | .032[b] |
| | Residual | .023 | 12 | .002 | | |
| | Total | .040 | 14 | | | |

a. Dependent Variable: pengangguran

b. Predictors: (Constant), investasi, inflasi

Based on the table above, it is obtained that $Fhitung$ is 4.663, where $Fhitung < Ftabel$ (4.663 > 3.89) with a significant value of 0.032 < 0.025, then H0 is rejected while Ha is accepted, meaning that Inflation and Investment have a significant effect on the Open Unemployment rate in Indonesia in 2009-2023.

**Discussion**

**1. The Effect of Inflation on Open Unemployment.**

From the results of multiple linear regression, if Inflation is 1 percent, it will increase the Open Unemployment Rate in Indonesia by 0.114 percent. From the results of the hypothesis test (t-test), it was found that inflation has no significant effect on open unemployment in Indonesia in 2009-2023. The results of this study are the same as the results of Ernita's study (2023) "There is no significant effect between wages, economic growth rate and inflation on the open unemployment rate in Jambi Province in 2003-2021 partially"

**2. The effect of investment on open unemployment.**

From the results of multiple linear regression, if investment is 1 percent, it will reduce the open unemployment rate in Indonesia by 0.089 percent. From the results of the hypothesis test (t-test), it was found that investment has a significant effect on open unemployment in Indonesia in 2009-2023. The results of this study are in line with the results of Ernita's research (2023) "Investment has a significant effect on the Open Unemployment Rate partially in Jambi Province in 2003-2021.

**3. The Effect of Inflation and Investment on Open Unemployment.**

From the results of the hypothesis test (F test), it was obtained that Inflation and Investment have a significant effect on Open Unemployment in Indonesia in 2009-2023. The results of this study are in line with Silaban & Siagian (2021) "simultaneously Inflation and Investment have a significant effect on Open Unemployment at the 5 percent alpha level", but are not the same as the results of Ernita's research (2023) "simultaneously Investment, Wages, Inflation Rate do not affect the Open Unemployment Rate in Jambi Province in 2003-2021."

## IV. CONCLUSION

Based on the results of the analysis conducted in this study, the following conclusions can be obtained:

1. Inflation does not have a significant effect on open unemployment in Indonesia in 2009-2023 partially. and investment has a significant effect on open unemployment in Indonesia in 2009-2023 partially. Then simultaneously inflation and investment have a significant effect on Open Unemployment in Indonesia in 2009-2023.
2. The magnitude of the effect of Inflation on Open Unemployment in Indonesia in 2009-2023 partially is -0.36%, the magnitude of the effect of Investment on Open Unemployment in Indonesia in 2009-2023 partially is 44.11%. while the magnitude of the effect of Inflation and Investment on Open Unemployment in Indonesia in 2009-2023 simultaneously is 43.7%.

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