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The Effect of Inflation Rate, Economic Growth Rate and Minimum Wages on Open Unemployment Rate in East Java Year 2013–2021

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Abstract

The purpose of this study was to determine the effect of the inflation rate, the rate of economic growth and drinking wages on the open unemployment rate in East Java in 2013-2021. This research is a quantitative research in East Java Province. The analysis used is the Data Panel. The results show that the inflation variable has a positive and significant effect on unemployment, there is an influence on the variables of economic growth and the minimum wage on open unemployment.

Keywords: Economic growth, inflation, open unemployment.

1. Introduction

Development as a process of increasing total income and per capita income. Economic development is calculated by taking into account the increase in population and accompanied by fundamental changes in the economic structure of a country and the distribution of income for the residents of a country.

We as Indonesian people must participate in economic development because society is the main actor in economic development. If the community and government can work together in carrying out economic development so that economic development can be achieved in accordance with the expectations of the Indonesian people. The government is tasked with directing, guiding, and creating an atmosphere that supports, complements and complements each other in a single step towards the creation of national economic development that aims to improve people's welfare (Yarlina, 2012).

Economic development in Indonesia has various problems. One aspect that often becomes a problem is employment opportunities, where the growth of the labor force increases not in line with the availability of existing job opportunities. (Yarlina, 2012). This aspect of the problem hinders one of the goals of economic development, namely creating opportunities and employment opportunities as much as possible so that the workforce in the province of East Java can be well absorbed. This problem does not only occur in Indonesia, but also in other

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developing countries. The large number of job opportunities is actually not a problem if the carrying capacity of the country supports the provision of job opportunities (Yarlian, 2012).
The trigger for this problem has an impact in developing countries, namely unemployment. Unemployment is a paradigm that is most often experienced by all countries in the world, even developing and developed countries. (Ayutha, 2014). This unemployment rate is included in the indicators used to measure the development or progress of a country (Ayutha, 2014). The extent or high unemployment rate of a country will reflect the good and bad economy of the country/region. In the sense that the higher the unemployment rate indicates the worsening economic conditions. One of the most important problems for a country to pay attention to is the problem of unemployment. If unemployment continues to increase in a country, it will have an impact on various crimes, social politics and poverty (Mirza, 2012). As we know that one of the causes of unemployment is a lack of expertise and lack of employment opportunities, besides the lack of human resources (HR) can also trigger an increase in unemployment, so that it is unable to boost economic growth, especially in East Java Province in the future.

2. Methods

The type of research used in this research is quantitative research. Quantitative research methods, as proposed by Sugiyono (2011: 8) are: "Research methods based on the philosophy of positivism, used to examine certain populations or samples, data collection using research instruments, data analysis is quantitative/statistical, with the aim of testing established hypothesis.

2.1 The scope of research

The research entitled The Effect of Inflation Rate, Economic Growth Rate and Minimum Wage on Open Unemployment Rate in East Java Province. The research period is from 2013-2021.

Because it coincides with the spread of the Covid-19 virus in Indonesia. This descriptive thesis uses secondary data obtained from the Indonesian Central Statistics Agency from East Java.

2.2 Data Type

This study uses secondary data. The secondary data in this thesis are data on inflation, economic growth rate, minimum wage and open unemployment.

2.3 Data source

Secondary data in this study were obtained from literature studies and some data from the Central Statistics Agency of East Java.

3. Results and Discussion

The object of this research is 8 cities in East Java province. Sampling of data used in this study using *purposive sampling technique*. The sampling criteria are inflation data, the rate of economic growth and the minimum wage as well as open unemployment data in 8 cities in East Java province in 2013-2021. The number of observations in this study were 72 observations with the following details.

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Table 1
List of Research Samples

Sample Criteria	**Amount**
Number of samples period 201 3	9
Number of samples for the period 201 4	9
Number of samples for the period 201 5	9
Number of samples for the period 201 6	9
Number of samples for the period 201 7	9
Number of samples for the period 201 8	9
Number of samples period 201 9	9
Number of samples period 20 20	9
Number of samples period 20 21	9
Number of observations period 201 3 -20 21	**72**

Source: Data processed by the author

The data used in this study are as follows:

Table 2
List of Research Object Cities

NO	**CITY NAME**
1.	Jember
2.	Sumenep
3.	Kediri
4.	Malang
5	Probolinggo
6	Madiun
7	Surabaya
8	Banyuwangi

Source: Data processed by the author

3.1 Descriptive statistics

Descriptive statistics present concise data that includes the *mean*, *median*, maximum value, minimum value and standard deviation value. The following are descriptive statistics of each variable used in this study:

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Table 3
Descriptive Statistics Results

		Inflation	Growth of Ek	Minimum wage	Open unemployment
N	Valid	72	72	72	72
	Missing	0	0	0	0
Mean		3.5233	4,3365	1937533,1667	4,9433
Median		2,3700	5,3950	1782399,0000	4,6450
Mode		1,93	5,23[a]	1954705,00	1,75[a]
Std. Deviation		2,26152	3,24442	728269,47766	2,16938
Sum		253,68	312,23	139502388,00	355,92

a. Multiple modes exist. The smallest value is shown

Based on the descriptive statistical table, the inflation variable has a mean or average of 3.5233 with a standard deviation of 2.261. As for economic growth, the mean value is 4.33 with a standard deviation of 3.244. For the minimum wage, the mean value is 1,937,555.16, and the mean open unemployment is 4.94 with a standard deviation of 2,169.

3.2. Classic Assumption Test

Normality test

Normality testing in this study was carried out using *the Histogram-Normality Test*. Normality test performed on the regression used in this study is the *Random Effect Model.* . The data is declared to have a normal distribution if the significance value (*probability*) is more than the 5% significance level ($\alpha = 0.05$) and the *Jarque-Bera* value is smaller than the *Chi-Square* value listed in the panel data regression estimation method table. The following are the results of the normality test of 72 data samples used in this study:

Table 4
Normality Test Results

Series	***Jarque-Bera***	***Probability***	**Information**
Residuals	2.414170	0.2999 _	Normal

Source: Data processed by the author, 2022

The results of the normality test above are the normality test carried out in this study where the Open Unemployment variable is the dependent variable and the Inflation, Economic Growth and Minimum Wage variables are independent variables. Based on the table above, the Jarque-Bera value is 2.4141470 and the significance *(probability) is* 0.2999. The significance level figure based on the table above is more than 0.05, so the normality test on this *Random Effect Model* shows that the data has a normal distribution.

1. Autocorrelation Test

The autocorrelation test in this study used the *Durbin-Watson test* with the limit of the DW value not occurring autocorrelation of 1.5-2.5. The following are the results of the *Durbin-Watson scores* on the autocorrelation test:

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Table 6
Autocorrelation Test Results

Model	**DW value**	**Information**
Random Effect Model	1.581347	There is no autocorrelation

Source: Data processed by the author

Based on the results of the autocorrelation test above, it is known that the *Durbin-Watson value* in this study is 1.581347, where the limit is that there is no autocorrelation problem, namely DW of 1.5-2.5. So in this *Random Effect Model* there is no autocorrelation problem in the data.

3.2.1 Analysis of Determination of Panel Data Regression Estimation Method
Hausman Test to test which model is appropriate to use in this study, namely *the Fixed Effect Model* or the *Random Effect Model* with a significance value of 0.05. H0 is accepted if the probability in *the random cross-section* is greater than the significance value, the model chosen is the *Random Effect Model*, H1 is accepted if the probability in *the random cross-section* is less than the significance value, the model chosen is the *Fixed Effect Model*. The following are the results of determining the panel data regression estimation method:

Table 7
Hausman Test Results

Test Summary	***Chi-Sq. Statistics***	***Chi-Sq. df***	***Prob.***
Cross-section random	1.278541	3	0.0779

Source: Data processed by the author

Based on the table above, where is the probability of *a random cross-section* on *the Hausman Test*, the Chi-Square Statistic value is 1.278541 with a probability of 0.0779, which means more than the significance value of 0.05, then REM does not meet the requirements as a better model than FEM.

3.3 Data Panel Regression Analysis
Panel data regression analysis in this study was used to determine the effect of the Inflation Rate, Economic Growth Rate and Minimum Wage on the Open Unemployment Rate in East Java Province in 2013 - 2021.

The following are the results of multiple regression analysis on panel data:

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Table 8
Multiple Regression Analysis Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.334873	1.521506	0.877336	0.3837
X1	0.366733	0.113368	3.234897	0.0020
X2	-0.159479	0.060693	-2.627615	0.0109
X3	1.55E-06	5.65E-07	2.745698	0.0079

Source: Data processed by researchers

Independent Variables: Inflation Rate, Economic Growth Rate, Minimum Wage
Dependent Variable: Open Unemployment

The results in the table above can be written in the form of a regression equation as follows:

Yr = C + b1X1 + b2X2 + b3X3 + e

Information:

Y: Open Unemployment

C: Constant

b1b2b3 : Regression Coefficient

X1: Inflation Rate

X2: Economic Growth Rate

X3: Minimum Wage

The results of data processing using Eviews 10, the regression equation can be obtained as follows:

Y = 1.334 + 0.3667 – 0.1594 + 0.00000155

The regression equation can be explained as follows:

1. The value of the constant (C) is 1.334, meaning that if the independent variables consisting of the Inflation Rate, Economic Growth Rate and Minimum Wage are equal to zero (0), then open unemployment will increase by 1.334.
2. The regression coefficient value of the Inflation Rate shows a positive result of 0.3667, which means that if the Inflation Rate is greater, then Open Unemployment will increase with the assumption that the variables of Economic Growth Rate and Minimum Wage are considered constant or constant.
3. The regression coefficient value of the Economic Growth Rate shows a negative result that is equal to - 0.1594, which means if the Economic Growth Rate gets smaller or decreases then

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Open Unemployment will decrease with the assumption that the Inflation Rate and Minimum Wage are considered constant or it can be said that if the Economic Growth Rate increases by 1 unit then Open Unemployment will decrease by 0.1594.

4. Minimum Wage regression coefficient value shows a positive result that is equal to 0.00000155, which means if the Minimum Wage increases, then Open Unemployment increases with the assumption that the variables of Inflation and Economic Growth Rate are considered constant or it can be said that the Minimum Wage increases by 1 unit, then Open Unemployment increases by 0.00000155.

3.3.1 Hypothesis test

3.3.1.1 t test

The t-test partially shows the effect of the independent variable on the dependent variable. Here are the results of the t-test:

Table 9
t test results table

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Description.
C	1.334873	1.521506	0.877336	0.3837	
X1	0.366733	0.113368	3.234897	0.0020	Significant
X2	-0.159479	0.060693	-2.627615	0.0109	Significant
X3	1.55E-06	5.65E-07	2.745698	0.0079	Significant

Source: Data processed by researchers

Independent Variables: Inflation Rate, Economic Growth Rate, Minimum Wage

Dependent Variable: Open Unemployment

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

a. Inflation Rate variable value with prob 0.0 020 which means that it is less than the significance value of 0.05 and with a t-statistic value of 3.234 > the t-table value of 2,000 so that it is H_0 rejected and H_1 accepted, the Inflation Rate variable has a significant positive effect on Open Unemployment.
b. Economic Growth variable with prob 0.0 109 which means less than the significance value of 0.05 and with a t-statistic value of -2. 627 < t-table value of -2. 000 so that it is H_0 rejected and H_1 accepted, then the variable Economic Growth Rate has a significant negative effect on Open Unemployment.
c. Minimum Wage variable value with prob 0.0 079 which means it is smaller than the significance value of 0.05 and with a t-statistic value of 2.745 > 2,000 t-table value so that it is H_0 rejected and H_1 accepted, then the Minimum Wage variable has a significant positive effect on Open Unemployment.

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3.3.2 Estimating Model Accuracy Test

3.3.2.1 F Uji test

The F test is used to test the effect of the independent and dependent variables simultaneously. Here are the results of the F Test:

Table 10
F Test Results Table

Model	***F-statistics***	***Prob.***	**Information**
Random Effect Model	12,257	0.000000	Significant

Source: Data processed by researchers

Based on the table above, in this *Random Effect Model* the probability value is 0.000000 which means less than the significance value of 0.05 and with an F-statistic value of 12.257 > the F-table value of 3.15 so that it is H_0 rejected and H_1 accepted, then the variables of Inflation, Economic Growth Rate and Minimum Wage simultaneously or jointly have a significant effect on Open Unemployment.

1. Test R^2

R^2 test shows the accuracy of the regression model used in this study. The value of *Adjusted R Square* explains how much the independent variable's ability to explain the dependent variable is. Here are the results of the R2 Test :

Table 11
R^2 Test Results

	R Squared	***Adjusted R Squared***
Random Effect Model	0.667708	0.613233

Source: Data processed by researchers

Based on the table above, in this *Random Effect Model* the Adjusted R-square value is 0. 613233 or 61.3233 %. It means that the variables of Inflation, Economic Growth Rate and Minimum Wage as independent variables are able to explain the Open Unemployment variable of 61.3 %. the remaining 38.7 % is explained by other variables outside of the independent variables.

5. Discussion

based on the t-test table IV.9 above explains the level of significance of each variable. From these results it can be seen that not all variables show significant results. The explanation of the relationship of the independent variable with each dependent variable is as follows:

The Effect of Inflation on Open Unemployment

By using the partial test (t statistic test) successfully proves that inflation has a positive effect on open unemployment. The results of this study indicate that the increase in the open unemployment rate can be influenced by inflation in a positive direction.

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Research that is not in line with research conducted by Rizka Febiana Putri (2013), Warda & Nasri (2015), Mukti Hadi Prasaja (2013) which concludes that inflation has a positive effect on educated unemployment. However, this is not in line with the research conducted by Mutiara Shifa (2014) and Hajji Muhammad Shun (2013) which stated that inflation has a negative and significant effect on educated unemployment.

The Effect of Economic Growth Rate on Open Unemployment

By using the partial test (t statistical test) succeeded in proving that the rate of economic growth has a negative effect on open unemployment. The results of this study indicate that every one unit increase in the rate of economic growth can reduce the open unemployment rate. The results of this study are in line with Mankiw (2013) which states that if economic growth increases, the production of goods and services will also increase so that job opportunities will be created to take advantage of the workforce and will reduce unemployment.

These results are in line with this study, namely research conducted by Rizka Febiana Putri (2013), Efit Tria Wulandari and Yolamalinda (2015), Warda & Nasri (2015), Febriana Nur Rahmawati (2016) and Hajji, Muhammad Shun (2013) which concluded that economic growth has a negative effect on unemployment.

The results of this study are not in line with research conducted by R. Achmad Ryan Z and Nanik Istiyani (2017) and Anggun Kembar Sari (2010) which state that economic growth has a positive effect on unemployment.

Effect of Minimum Wage on Open Unemployment

By using the partial test (t statistic test) successfully proves that the minimum wage has a positive effect on open unemployment. The results of this study prove that every increase in the minimum wage that is set can increase open unemployment. Unemployment caused by wage rigidity due to an adjustment between the number of workers who want work and the number of jobs available. However, what happens is that the increase in the wage level makes the supply of labor increase, thereby reducing the demand for labor. As a result, there is a surplus of labor or unemployment. The causes of wage rigidity include: minimum wage regulations, trade unions and wage efficiency Mankiw (2003:164). Wages will also have an impact on the level of job opportunities and unemployment, the application of a minimum wage in each Regency/City will actually reduce the level of demand for labor which in turn will increase the number of unemployed.

The results of this study are in line with research conducted by Fitri Junaidi (2016), R. Achmad Ryan Z and Nanik Istiyani (2017), Rizka Febiana Putri (2013), Efit Tria Wulandari & Yolamalinda (2015), Warda & Nasri (2015), Febriana Nur Rahmawati (2016) and Hajji, Muhammad Shun (2013) which state that the minimum wage has a positive effect on unemployment. However, there are also studies that are not in line with this research, namely research conducted by Anggun Kembar Sari (2010) which concludes that the minimum wage has a negative effect on unemployment.

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6. Conclusion

There is a positive and significant effect of the inflation rate on the open unemployment rate in 2013-2021 in East Java Province. There is an effect of the rate of economic growth on the open unemployment rate in 2013-2021 in East Java Province. There is an effect of minimum wage on open unemployment in 2013-2021 in East Java Province. There is a simultaneous effect of inflation, the rate of economic growth and the minimum wage on open unemployment in 2013-2021 in East Java Province.

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