Turkish Online Journal of Qualitative Inquiry (TOJQI)
Volume 12, Issue 6, July, 2021: 4972 – 4978

Research Article

# The Effect Of Monetary Variable Movement And Export Level To Employment Opportunities In Indonesia

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## Abstract

This study was purposed to determine the short-term and long-term relationship of monetary variable movement to employment opportunities in Indonesia. The variables used are interest rates, exchange rates, inflation and exports as independent variables, while the employment opportunities as dependent variable. The analysis process used error correction model (ECM). The data used in this study were from 1997 to 2019. The results of the study showed that partially export was the variable that had an influence on employment opportunities in Indonesia. However, simultaneously in the short and long term relationship, all variables affect the employment opportunities in Indonesia. The study of opportunities per business sector is the main interest for further researchers.

***Keywords:*** *Employment Opportunity, Monetary Policy, Export, Error Correction Model.*

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## Preliminary

Indonesia is one of the countries with the largest population in the world. In 2020, Indonesia's population reached more than 271 million people (Central Bureau of Statistics Republic of Indonesia, 2020). It is estimated that in 2020-2030, the growth of Indonesia' population will have an impact on economic growth and increase the level of employment opportunities (Adioetomo, 2005). Several sectors that are able to absorb a lot of labor in Indonesia are the Micro, Small and Medium Enterprises (MSME) sector. This is because the number of MSMEs is the most dominant in Indonesia (Azhari, 2021).

The economy is always driven by aggregate demand and supply. The balance between the two aspects will result in an equilibrium price and output. Adherents of the supply side believe that what drives the economy comes from the aggregate supply side. On the other hand, adherents of the demand side assume that the purchasing power of goods and services is more dominant in driving the economy, so they assume that production will decrease if there is a decline in aggregate demand. Variables that can influence aggregate demand are monetary, fiscal, and international policies. In a sluggish economy, expansionary monetary and fiscal policies and exchange rate stabilization policies can be carried out to encourage an increase in output (Astuti, 2014).

Keynes said that the balance of economy in a country can be seen through the market. The market types meant in this case are the money market, labor market, and foreign market. The point of this theory is the three markets are interrelated in the process of achieving economic balance. This balance is seen from the general equilibrium process, where the three markets simultaneously move

towards equilibrium. The labor market follows the goods market, if output increases, the number of people who get jobs or the level of employment opportunities also increases, and vice versa. If there is a change (eg. investment, government expense, and the money supply), it will have a chain effect on all markets. The economy will adjust to these changes until a new general equilibrium position is reached (Mankiew, 2009).

Changes in output can be analyzed in two parts, namely study in the short term and study in the long term. In the long run, the increase in output can be influenced by technology and inputs of production factors, such as capital and labor. Investment will increase the amount of capital. So that the additional capital will certainly increase the availability of employment, then will lead to an increase in national output. The implication is when there is an increase in the availability of employment, so it has increased the level of employment opportunities and the hiring of full employment. Keynes said that the economy is not always reaches the level of full employment, unemployment will be certainly exist but the amount of it depends on the economic conditions at that time. Economic conditions do not always run smoothly, sometime it often faces the troubles and shocks, where these shocks can cause macro problems such as unemployment (low levels of employment opportunity), inflation, economic growth, and balance of payments. One of these shocks occurs in monetary variables so that it affects the amount of output and employment opportunities of a country (Dogan, 2012). To reduce the effects of these shocks, as the monetary authority, the central bank has implemented monetary policy that can control the monetary amount of the interest rate variable to achieve the expected development of economic activity.

In order to create and expand employment opportunities to reduce the problem of unemployment, then interest rates and inflation need to be taken into account. The reference interest rate of Bank Indonesia or BI Rate is a signal for banks to set interest rates such as savings, deposits and loans. Raising interest rates is an effort of central bank to fight inflation. By making loan costs more expensive, the amount of money supply in the community will decrease and so the economic activity will decrease either. The opposite way can happen. Lower interest rates will cause loan costs become cheaper. Investors will tend to be encouraged to expand their business or new investments, and consumers will increase their spending. Thus the output of the economy will increase and more labor is needed, besides that investment in the stock market will also increase.

## Literature

Monetary policy is the policy of the central bank or monetary authority to maintain macroeconomic stability. Fundamentally, monetary policy is aimed at keeping liquidity in the economy at the right amount so that trade transactions can be smoothed without causing inflationary pressure. In the economy, several indicators that are usually used to assess monetary policy include the money supply, inflation, interest rates, exchange rates, and public expectations. Interest rates affect investment in the industrial sector which will encourage production. While the exchange rate affects prices (products and production inputs). Interest rates and exchange rates are monetary policy instruments that greatly affect the trade in industrial products, both domestically and internationally. If what is being done is to increase the money supply, the government is said to be pursuing an expansionary monetary policy. Otherwise, if the money supply is reduced, the government takes a contractionary monetary policy (Sukirno, 2012 and Rambe et al., 2018). The exchange rate between two countries according to (Mankiw, 2009) is the price level agreed upon by residents of the two countries to trade with each other. The exchange rate according to Mankiw (2003) is divided into real and nominal exchange rates. The real exchange rate shows the relative prices of goods between two countries, while the nominal exchange rate shows the relative prices of the currencies of two countries. There are 3 types of exchange rate system: 1. Fixed exchange rate is the exchange rate of a country's currency whose value does not pay attention to the balance of supply and demand in the money market, but it is directly determined by the state (central bank). 2. Managed Floating Exchange Rate is the exchange rate of a country's currency which is apart from being influenced by supply and demand in the money market, it is also affected by government intervention. 3. Free Floating Rate is

the exchange rate of a country's currency which is allowed to reach the equilibrium of supply and demand in the money market in accordance with the country's internal and external conditions. The government does not directly intervene in the value of the currency. In addition to exchange rates, this study used a literature review of international trade. Indonesia adheres to an open economic system. This means that the fulfillment of domestic needs does not only rely on domestic production, but also imports when it is necessary. And when the production of goods and services exceeds domestic needs, the exports can be carried out. According to Suryanto (2017) international trade greatly affects the domestic economy of a country because it creates competition among the countries in the world. Thus, countries can be encouraged to specialize and increase efficiency. The countries which are successful in international trade can be taken the benefit from rising incomes, capital transfers and absorption of labor, while developing countries will be prone to exploitation, import dependence and the destruction of local industries.

According to the Ministry of Trade of the Republic of Indonesia states that export is an activity of removing goods from the Indonesian customs area to another country' customs area. Thus, the definition of import can be concluded as the activity of importing goods from abroad to the Indonesian customs area. Certainly, export and import activities are carried out in accordance with applicable laws and regulations.

Economic growth is the most common economic indicator to describe the progress of a country in a certain period of time. Economic growth shows a greater added value than the previous period. Economic growth is calculated from the percentage increase in Gross Domestic Product (GDP) at constant prices in a year against the previous year. There are several approaches to calculating GDP, namely; production, income and expenditure approaches. The calculation of GDP with a production approach is carried out by calculating all added values that occurs in a domestic area within 1 year from various business fields. The calculation of GDP with the income approach is to calculate national income by calculating all income of economic actors in a domestic area within 1 year. The calculation of GDP with the expenditure approach is carried out by calculating all expenditures of various economic sectors in a domestic area within 1 year. Several studies have been done before. One of them is by Aliman & Purnomo (2001) who conducted a causality test between exports and economic growth in Indonesia. The result of this study shows that economic growth is driving exports. The test conducted by Aliman & Purnomo (2001) is a test of empirical data from 1969-1997.

Job opportunity is the opportunity or condition indicate the availability of employment opportunities so that all people who are willing and able to work in the production process can get jobs according to their own expertise, skills and talents. Job opportunity is the number of people who can be accommodated to work for a company. This job opportunity will accommodate all workers if the available employment opportunities are sufficient or balanced with the number of existing workers. In practice, a country is considered to have reached the level of full employment if the unemployment rate is less than four percent (Sukirno, 2010). According to constitution No. 13 in 2003, job opportunity is needs in labor which are then actually required by companies or institutions that accept employment at certain levels of wages, positions, and work conditions, which are informed through advertisements and so on whose proxies are seen through the labor force.

Several studies have been conducted previously, including Amalita and Fakhruddin (2016), the results showed that the current period's labor force is strongly influenced by the previous period's labor force, exchange rates, and interest rates both in the short and long term. Meanwhile, inflation does not significantly affect the labor force in both the short and long term. Likewise a study conducted by Syahputra (2018), interest rates and inflation affect employment opportunities in Aceh, but partially inflation has no effect on employment opportunities.

## Research Methodology

The data analysis method of this research used several steps, namely: (1) conducting a stationarity test on the independent and dependent variables; (2) testing the degree of integration; (3) cointegration testing; (4) ECM estimation analysis; and (5) interpretation of the estimation results.

The estimates in this research used the Error Correction Model (ECM) developed by Engle-Granger. The estimation model used from the ECM method for both short and long term which is described as follows:

$$TKBt = \alpha_0 + \alpha_1 DSBIt + \alpha_2 DKurst + \alpha_3 DExport + \alpha_4 DINFLASI + \alpha_5 SBI_{t-1} + \alpha_6 Kurs_{t-1} + \alpha_7 Export_{t-1} + \alpha_8 INFLASI_{t-1} + \alpha_9 ECT$$

or

$$PDBt = \alpha_0 + \alpha_1 DSBIt + \alpha_2 DKurst + \alpha_3 DExport + \alpha_3 DInflasi + \alpha_4 BSBI + \alpha_5 BKurs + \alpha_6 BExport + \alpha_7 BInflasi + \alpha_8 ECT$$

Where D is the first difference, B is backward lag operator, TK (Labor) is job opportunity, SBI is the interest rate, Exchange rate is the rupiah and Export is the amount of exports and inflation. CT is an error correction, with the formula:

$$CT = \alpha_8(\alpha_4 SBI_{t-1} + \alpha_5 Kurs_{t-1} + \alpha_6 Export_{t-1} + \alpha_7 Export_{t-1} - TK_{t-1})$$

Next, the analysis model of multiple linear regression for long term is:

$$TK_t = C + \beta_1 SBI + \beta_2 Kurs + \beta_3 Export + \beta_4 Inflasi + e_t$$

Where TK (Labor) is a job opportunity, SBI is the interest rate, the exchange rate is the rupiah and Export is the amount of exports and inflation. Meanwhile, α is a constant, β1,2,3 is the estimated coefficient, and e is the error term.

**Results and Discussion**

The initial step taken was a stationary test of each variable, this aimed to anticipate the occurrence of spurious regression (Gujarati, 2014). If the test result was non-stationary at level, then it was continued to level of integration testing so that the variable became stationary. The way to get the result was by comparing between ADF value and the critical value. When the ADF value was greater than the critical value, then the variable was stationary; However, if the ADF value was less than the critical value, then the variable was non-stationary.

**Table 1. Stationary Test Results of Research Variables**

| Variables | *Level* | | | *1st Difference* | | |
|---|---|---|---|---|---|---|
| | *ADF Value* | *Critical Value* | Result | *ADF Value* | *Critical Value* | Result |
| LABOR | -3,0048 | -3,0048 | Non stationary | -6,1617 | -3,0123 | Stationary |
| INTEREST RATE | -3,1129 | -3,0048 | Stationary | -8,7095 | -3,0123 | Stationary |
| EXCHANGE RATE | -3,3639 | -3,0048 | Stationary | -7,7884 | -3,0123 | Stationary |
| INFLATION | -4,6454 | -3,0048 | Stationary | -9,9269 | -3,0123 | Stationary |
| EXPORT | -1,6190 | -3,0048 | Non Stationary | -7,7189 | -3,0123 | Stationary |

Source: Secondary Data Processing, 2021.

**Table 2. The Result of Cointegration Test of Research Variables**

| *Johansen Fisher Test* | *p-value* | *Critical Value* | *Prob.* |
|---|---|---|---|
| *Trace Statistic* | 117,6332 | 69,8189 | 0,0000 |
| *Max Eigen Test* | 58,1056 | 33,8768 | 0,0000 |

Source: Secondary Data Processing, 2021.

Table 1 shows the results of the stationary test which is only two variables that are not stationary, namely Labor and Exports, while the variables of interest rates, exchange rates and inflation are stationary. However, at the first difference level, all variables are stationary.

Furthermore, To see whether or not there is a long-term correlation tracking inter variables, then the cointegration test was conducted using the Johansen Test method. The step to find out the cointegrated variables was by comparing the statistic value with the critical value (0.05). If the p-value was less than the critical value, then the data variables were not cointegrated; otherwise, if the p-value was greater than the critical value, then all variables were cointegrated.

The results shown in Table 2 illustrate that the critical p-value was greater than the value, either it was through the results of trace statistic test or through Max-Eigen test. Thus, the variables of MSME gross domestic product, interest rates, exchange rates and exports were stationary in long-term relationships.

**Short Term Equation Estimation**

This section described the short-term estimation results using the error correction model (ECM), which were summarized in Table 3. The test results in Table 3 stated that in the short term, all variables had the effect on the employment opportunities in Indonesia. This was proven with the value of Prob. (F-stat) of 0.015 which was smaller than 0.05. Furthermore, the results of the partial analysis showed that the variables of export had an effect in the short term to employment opportunity. On the other hand the variables of interest rates, exchange rates and inflation had no effect on labor absoption, with imbalance value of 31% of the data used.

The results are not similar to several previous studies, including Amalita and Fakhruddin (2016) which stated that monetary variables such as exchange rates and interest rates affected employment opportunities in the short term. Meanwhile, inflation had no effect on employment opportunities. Similar to the research conducted by Syahputra (2018), stated that interest rates affected employment opportunities, but inflation did not have a partial effect.

**Table 3. The result of Short Term Regression Estimate**

| *Variable* | *Coefficient* | *t-stat* | *Prob* |
|---|---|---|---|
| Constant | 0,0385 | 3,1607 | 0,0061 |
| D(INTEREST RATE) | -0,0013 | -0,3672 | 0,7182 |
| D(EXCHANGE RATE) | -0,1209 | -0,1469 | 0,8850 |
| D(EXPORT) | -0,1747 | -2,1045 | 0,0491 |
| D (INFLATION) | 0,0005 | 0,5008 | 0,6233 |
| RES(-1) | -0,3145 | -2,2327 | 0,0393 |
| $R^2$ | 0,5551 | | |
| *Adj* $R^2$ | 0,4613 | | |
| *Prob,(F-stat)* | 0,0152 | | |

Source: Secondary Data Processing, 2021.

**Table 4. The result of Long Term Regression Estimate**

| *Variable* | *Coefficient* | *t-stat* | *Prob* |
|---|---|---|---|
| Constant | 14,8162 | 15,4936 | 0,0000 |
| INTEREST RATE | -0,0046 | -0,3681 | 0,7170 |
| EXCHANGE RATE | -0,0066 | -0,0421 | 0,9668 |
| EXPORT | 0,3056 | 3,8653 | 0,0011 |
| INFLATION | -0,0004 | -0,1212 | 0,9043 |
| $R^2$ | 0,8151 | | |
| *Adj* $R^2$ | 0,7740 | | |
| *Prob,(F-stat)* | 0,0000 | | |

Source: Secondary Data Processing, 2021.

**Long-Term Equation Estimation**

The next step was to make a long-term estimation using an error correction model (ECM). The results were shown in Table 4. The results of the long-term test between the variables of interest rates, exchange rates, exports and inflation have a significant effect on employment opportunities. This was proven by the value of Prob. (t-stat) of 0.000 which was smaller than 0.05. But partially, only export variables had an influence on employment opportunities, while interest rates, exchange rates and inflation have no effect on employment opportunities.

In the long term, interest rates and exchange rates greatly affect employment opportunities but it is not accordance with with Amalita and Fakhruddin (2016). However, there are job opportunities, especially in the agricultural sector, which is strongly influenced by the amount of money supply (Agustono, A. D. A. D, 2016). In this study, the variable of export is a variable that affects employment opportunities in Indonesia. This is in line with a study conducted by Wibowo (2013), which states that exports greatly affect employment opportunities in Indonesia. However, inflation does not have a significant effect on employment opportunities. Syahputra, 2018; Amalita and Fakhruddin, 2016; Indradewa, I. G. A., & Natha, K. S., (2015). Wibowo, 2013).

**Conclusion**

The results of this study show that the variable of export greatly affects employment opportunities in Indonesia both in the short and long term partially. However, all variables of interest rates, exchange rates, inflation and exports affect employment opportunities in Indonesia. The results of this study recommend the need for a study of opportunities per sector, such as the agriculture, mining, services, and other sectors. In order to obtain the dominant sector results on the policy will be carried out.

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