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Analysis of Effect Macro Variable on International Trade of Indonesia

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Abstract

This study aims to determine the effect of macro variables which include Indonesia's real gross domestic income, money supply, consumer price index and interest rates on international trade mediated by the exchange rate of rupiah against the dollar. This type of research is descriptive research with quantitative approach. Determination of the sample based on quarterly time series data 2010-2014. This study uses path analysis. The results showed domestic gross product, the money supply, and interest rates together have a significant effect on the exchange rate but the consumer price index do not have significant effect on the exchange rate. The results also show that the exchange rate has no significant effect on imports and exports.

Keywords: Gross domestic product, Money supply, Consumer price index, Interest rates, Exchange rate, International trade

1. Introduction

Globalization on the economic led to the development of the economic system to open more between countries. Open economy brings an economic impact that is the international trade between countries. The complexity of the payment system in international trade is increasing higher in the global economy as it developed lately. This happens due to the growing volume and diversity of goods and services that will be traded in other countries. Therefore, the efforts to achieve the benefits of economic globalization must be preceded by an attempt to

determine the foreign exchange rates at a favorable rate. The determination of foreign exchange rates became an important consideration for involved countries in international trade because of foreign exchange rates have a big impact on the costs and benefits of international trade.

The phenomenon of the weakness of rupiah against US dollar recently is interesting to follow. Every country wants a stable exchange rate. However, to achieve this, is not only determined by the conditions and economic policy in the country, but also the economic condition of the other countries especially its trading partners as well as the conditions of non-economic such as security and political conditions of the country.

There are two events that can form the exchange rate. The first is the foreign trade (exports – imports) and the buying and selling of the currency itself with the motive of speculation. The research will use the first perspective that the events can shape the exchange rate through foreign trade (exports – imports). With the weakening of the exchange rate Indonesia condition indicates the weakness of conducting foreign transactions. From the standpoint of monetary approach, foreign exchange rate is influenced by the fundamental economic variables, such as the money supply, the level of real output and interest rates (Mac Donald and Taylor, 1992). Meanwhile Tucker et al, (1991) add the inflation variables in the model. Monetary approach is the development of the purchasing power parity concept and the quantity theory of money.

2. Literature Review

According to Abimanyu (2004), exchange rate is the price of a currency relative to currencies of other countries, and therefore the exchange rate of the two currencies include the balance point is determined by supply and demand of both currencies. With changes in conditions of economic and social policies that happen in a country, the exchange rate of a country's currency against the currencies of other countries may change substantially. Under certain conditions, the increase and decrease occurred in the exchange rate on intervention of the government, this case the policy of banks in increasing and lowering the exchange rate of domestic currency to adjust the exchange rate of the real currency in the market.

There are two major powers that interact in the market, that is demand and supply, thus forming a balance which is reflected in the level of price and quantity the demand and supply curves meet. The law of connecting supply the various points of the combination the amount of goods or services and the level of prices offered. Where the higher price, the higher quantity supplied or vice versa if the price drops, assuming ceteris paribus so that is a positive relationship between price and supply.

According Krugman (2005) the exchange rate is the price one of country's currency against another country or a country's currency expressed in another country's currency. Changes in exchange rates may cause an increase or decrease in domestic value currency against foreign currencies which can be termed as follows: depreciation is an increase in the price of foreign currency in the country and appreciation that the decline in prices of foreign currency in the country.

A theory regarding the exchange rate or foreign exchange trading and the elasticity approach, according to this approach equilibrium exchange rate of the domestic currency of a country against foreign currencies determined equilibrium value of exports and imports of the country. There are three types transactions of demand and supply or buying and selling foreign currencies, is 1) Spot Transaction, is implementation buying and selling foreign exchange in the same time with the time purchase agreement was made in foreign currency. 2) Forward Transaction, is an agreement called the contract foreign exchange between two parties on a number of specific currency exchange with other currencies in the future. 3) Swap Transaction is a contract of purchase or sale of foreign currency an agreed exchange rate is now appropriate combined spot rate to make purchases or sales of foreign currency forward exchange rate.

According to Samuelson (2004) increases international trade with increasing degree of openness of the economy. Price plays an important role in international trade, the difference in causes price a country can export or import of goods and services. International trade will involve a variety of currencies. Thus, the first exchange rate to be important in the interaction economic between countries.

One economic indicator is the Gross Domestic Product (GDP). All income GDP measures on goods and services that are final, is the entire value of goods and services produced in the economy in a given period of time and produced within the borders of a particular country. In the monetary approach, differences on the level of national income between countries will be able to influence the export and import transactions of goods and cross-border asset transactions concerned. This will affect the demand and supply of foreign currency in the country, which will also automatically affect the exchange rate in affect on free floating exchange rate system.

According to Joseph, et al (1999) that the influence of money in circulation has a positive relationship with the exchange rate, where if there is additional money supply will lead to depreciation of the rupiah and increases USD pressure. In developing countries, the money supply including an increase caused by deficit government's budget. If the deficit is financed by printing money could lead to the expansion of the money supply.

The influence of the inflation rate to the value of foreign currency exchange rates can be explained by the theory of Purchasing Power Parity (PPP). This theory was introduced by Gustav Cassel after World War I. Based on the theory the exchange rate will change to maintain its purchasing power. In the long-term economic development will become increasingly worse if inflation can not be controlled, because inflation tends to be accelerated. The increasing inflation would reduce productive investment, reduce exports and increase imports. The state will reduce the demand for money in the country and will increase the demand for foreign currency, thereby decreasing the value of the rupiah of US dollar.

The interest rate is closely linked to the inflation rate. When the inflation rate rises, the interest rate tends to be higher. Policy aims to raise interest rates to suppress inflation rate and to strengthen the affect of the interest rate to changes in foreign currency exchange rates is the theory of the International Fisher Effect. According to the IFE theory the interest rate

differential between the two countries due to differences in expectations for inflation.

The real exchange rate of a country will affect the macro economic conditions of a country, especially with net exports or the balance trade, so there is relationship between exchange rate with net exports or balance of trade (Mankiw, 2003).

In a floating exchange rates system, the depreciation or appreciation of the value of the currency will result in a change to the exports and imports. If the exchange rate depreciates, the value of domestic currency relative to foreign currencies decreased, the volume of exports will be rising. In other words, if the value of the dollar exchange rate rose, the export volume will also increase (Sukirno, 2004).

3. Research Methodology

In this research, using quantitative and secondary gained through publications of the Central Bureu of Statistics (BPS) and Bank Indonesia. Researchers will use a quantitative approach in question and the calculation of the secondary data, data in the money supply, interest rates, gross domestic product, consumer price index, export and import. In the collected data in this research were obtained from several methods of data collection by time series. The data of analysis used is descriptive analysis is a data statistic used to analyze by describing or depicting data that has been collected as without intending to make conclusions apply to the public or generalization (Sugiyono, 2007), 2) Path analysis is the analysis at the relationship of direct or indirect causality (Augusty, 2002)

4. Results

The table coefficients results indicate that the Gross Domestic Product (GDP), Money Supply and interest rate of the level have a significant effect on exchange rate of the dollar. However, the variable consumer price index shows positive but not significant affect on the exchange rate. Summary analysis of SPSS results of the model indicate that the R Square is 0.956 or 95.6 %. Variable exchange rates can be explained by the consumer price index, money supply, gross domestic product and interest rate of 95.6 % and 4.4 % is explained by other variables outside the model.

The exchange rate coefficients table result shows the value of unstandardized beta coefficients of -1.017 and significant indicates at > 0.05. It can be concluded that the exchange rate variable has significant negative effect to imports. Summary analysis of SPSS results of the model indicates that the R Square is 0,782 or 78.2 %. Variable exchange rates can be explained by the consumer price index, money supply, gross domestic product, interest rate and exchange rate amounted to 78.2 % and 21.8 % explained by other variables outside the model.

The exchange rate coefficients table result shows the value of unstandardized beta coefficients of -1.017 and indicates significant at > 0.05. It can be concluded that the exchange rate variable significant negative effect directly on exports. Summary analysis of SPSS results of the model indicate that the R Square is 0.748 or 74.8 %. Variable exchange rates can be explained by the consumer price index, money supply, gross domestic product,

interest rate and exchange rate amounted to 74.8 % and 25.2 % explained by other variables outside the model.

From these results it can be seen that the gross domestic product, money supply, and interest rates do not affect the imports through the exchange rate. Thus, it can be concluded that exchange rate does not become an intervening variable between the gross domestic product, money supply, and interest rates on imports. From these results it can be seen that the gross domestic product, money supply, and interest rates do not affect the export via the exchange rate. Thus, it can be concluded that the exchange rate does not become an intervening variable between the gross domestic product, money supply, and interest rates on export.

The negative effect of the gross domestic product of the exchange rate consistent with the hypothesis. This is because if the Indonesian GDP rise, investors tend to maintain the rupiah so it will lead to high demand for the currency. The explanation according to Keynes's theory that increased revenues will increase imports will increase the demand for foreign exchange to finance imports. It supports research by Lismiyanti (2003) in which of the study stated that the domestic product has negative effect on the exchange rate.

The positive effect of money supply in Indonesia to the exchange rate consistent with the hypothesis. This is because if the amount of money circulation in Indonesia increased, it will cause inflation in Indonesia. This increase in the rate of inflation will cause the purchasing power of the rupiah in the Indonesian market will drop and the dollar appreciated and the rupiah will depreciate. This is reinforced by the theory of purchasing power deserve that money supply will cause a rise in inflation from domestic to foreign inflation, this resulted in the domestic currency decreased compare with foreign currencies. The higher the domestic money supply will cause the domestic currency depreciates

The positive effect of Indonesia's consumer price index consistent with the hypothesis. This is because rising prices for producers and consumers so that transactions slowed economy and cause an increase in the rupiah against the dollar. This is supported Dauda (2011) which showed the consumer price index has positive influence on the exchange rate. The positive effect of the interest rate on the exchange rate consistent with the hypothesis. It is in because if the interest rate in the country Indonesia decreased there will be no capital inflow (including those from America). The condition means that there will be no release of exchange trading partners (in this case dollars) to acquire rupiah. From the above explanation, according to the theory of the International Fisher Effect (IFE) that the interest rate differential between the two countries due to differences in expectations for inflation. It supports research Muchlas and Alamsyah (2015), which shows the influence of interest rates on the value of the rupiah against the dollar, with a positive influence.

The negative effect of the exchange rate on imports is not consistent with the hypothesis. This is because if the exchange rate goes down or rupiah to appreciate the price of imported goods relatively cheaper in the eyes of buyers and purchasing power of imported goods will increase. Furthermore, this reduction will cause an increase in imports of goods. It supports the research of Siti (2011) which showed that imports are negatively affected by the exchange rate. Insignificant variable exchange rate to import, it shows that imports are not only

influenced by the exchange rate, but the other factors that affect consumer purchasing power and income.

The negative effect of exchange rate on exports consistent with the hypothesis that expected. That is because the economic slowdown resulted in the destination countries and those countries lowered their demand for goods and services in Indonesia. This decrease would have an impact on the decline in exports of Indonesia. This is supported by the research of Mulianta (2013) which showed that exports are negatively affected by the exchange rate. Insignificant variable exchange rate on exports shows that the export is not only influenced by the exchange rate, but the other factors influencing that is international price, the greater the difference between the price on the international market with domestic prices will increase export and tariff and non-tariff development policy.

5. Conclusion

Variable gross domestic product (GDP) of Indonesia is having a negative effect on the exchange rate. So the higher the gross domestic product (GDP), the rupiah against the dollar will be more appreciated and vice versa. The variable money supply in Indonesia has positive impact on the exchange rate. So the higher the amount of money circulation in Indonesia, the exchange rate will depreciate.

Variable consumer price index (CPI) Indonesia has a positive impact on the exchange rate. So the higher the consumer price index (CPI), rupiah will depreciate. Variable interest rates has a positive impact on the exchange rate. So the lower the interest rate, rupiah will depreciate. The relationship exchange rate has a negative impact on imports. So the appreciation of rupiah will decrease imports. The relationship between exchange rate and exports is negative. The depreciation of rupiah will decrease exports. This happens because the slowdown of global economics.

The rupiah exchange rate of the dollar has always fluctuated, the fluctuation is caused by international trade activities. Thus the international trade activities aimed at improving Indonesia's main commodities exports and maintain price competitiveness in the international market and seek to reduce imports through a policy of increasing import substitution industry in the country. With the interest rates that is tend to decrease, Bank Indonesia as the monetary authority needs to be careful in defining the BI rate.

References

Abimanyu, Y. (2004). Understanding Foreign Exchange Rates. Jakarta: Issuing Faculty of Economics, University of Indonesia .

Alan, I. T., Madura, J., & Chiang. (1991). *International Financial Market.* West Publishing Comphany: St Paul.

Aminah, S. U. (2011). *Effect of Money Supply, Interest Rate Sertifikat Bank Indonesia, Import,* Export Of Rupiah/ US Dollar Period January 2006 through March 2010. Semarang: FE UNES.

Pine, B. J., & Gilmore, J. H. (1999). *The Experience Economy: Work Is Theatre and Every Business a Stage*. Boston: Harvard Business School Press.

Dauda, P. (2002). *Analysis of Fundamental Economic and Exchange Rate Movements of US Dollar (USD / IDR).* Jakarta: Penerbit Andi.

Ferdinand, A. (2002). *Structural Equation Modelling in Management Research*. Semarang: FE UNDIP.

Krugman, R. P., & Maurice, O. (2005). *Theory International Economic and Policy Volume 2.* Jakarta: Rajawali Pers penerjemah: Dr. Faisal H Basri, SE. M. Sc.

Lismiyanti, S. (2013). *Analysis Macro Variable Effect of the Exchange Rate and International Trade Against Indonesia Period 2001-2010.* Bandung: FE Universitas Pasundan.

MacDonald, R., & Mark, P. T. (1992). *Exchange Rate Economics, A Survey.* IMF Staff Paper Vol 39 No 1. http://dx.doi.org/10.2307/3867200

Mankiw, N. G. (2003). T*heory Macroeconomic Indonesian Fifth Edition*. Jakarta: Erlangga.

Muchlas, Z., & Alamsyah, A. R. (2015). *Factors Affecting the Rupiah of US Dollar Post Krisis (2000-2010). JIBEKA Journal Volume IX # 1*. Malang: STIE Asia Malang.

Mulianta, A. G. (2013). *Exchange Rates Effect of Against the Export of Indonesia. Journal P3DI, (Online) vol.7 No.1*. Accessed October 16, 2015.

Samuelson, P. A., & Nordhaus W. D. (2004). *Macroeconomic Science Edition Seventeen. Translated by Gretta, Theresa Tanoto, Bosco Carvallo, and Anna Elly*.Jakarta: PT Media Global Edukasi.

Sugiyono. (2007). *Approach Quantitative Research Methods, Qualitative and R & D*.Bandung: ALFABETA.

Sukirno, S. (2004). *Theory Macroeconomic and Introduction to Issue Three.*Jakarta: PT. Raja Grafindo Persada.

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