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Dinamic Interaction of Rupiah and Four Other Currencies Exchange and Its Relation to Indonesia Economy

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ABSTRACT : *The purpose of this study was to analyze and explain Dynamics Interaction of rupiah and four other currencies exchange and its relation to Indonesian Economy. Theoretically this study was expected to enrich and complement the repertoire of science in the exchange rate and the Indonesian economy, so it can be beneficial to the development of science and practitioners. The type of this study used quantitative research. This selection was based on a consideration of data relating to the variables, ie the values of all variables that have occurred. This study consisted of 5 (five) variables, that consists of, 1 (one) dependent variable ie national income (GDP), and four (4) independent variables : Indonesian currency rates against the US currency (GBP / USD), exchange rates Indonesian currency against the Japanese currency (GBP / JPY), the Indonesian currency exchange rate against European currencies (USD / EUR), and currency exchange rate against the currencies of Britain Indonesia (USD / GBP). The results showed that: 1) the interaction of the rupiah to dollar has no significant effect on the Indonesian economy; 2) The interaction of the exchange rate with the yen has no significant effect on the Indonesian economy; 3) The interaction of exchange rate with euro has no significant effect on the Indonesian economy; 4) The interaction of the exchange rate with the pound no significant effect on the Indonesian economy.*

Keywords: *National income (GDP), the exchange rate against US currency (GBP / USD), Japanese yen (USD / JPY), the European currency (USD / EUR) and the British currency (EUR / GBP)*

I. INTRODUCTION

The international economy through globalization growing more rapidly, the economic relations between countries become intertwined and lead to increased trade flows of goods and money and capital between countries. Changes in macro-economic indicators that occurred in other countries are not directly impact on a country's economic indicators (Wibowo, 2005).International economic developments more rapidly and with the implementation of a floating exchange rate system for developing countries, to foreign exchange (forex) has a very important role, especially against some major currencies (hard currencies). Free floating exchange rate system prevailing in Indonesia since August 1997, the position of the rupiah against foreign currencies be determined by market mechanisms. The movement of the rupiah against the US dollar fluctuated since Bank Indonesia imposed a high exchange rate policy of the free (Helmy, 2011). Results of research on the exchange rate has not led to the prediction of the dynamics of the exchange rate (exchange rate), but on aspects related to it. Bekiros & Diks (2008) examine the causality between the exchange rate in a linear and non linear. They took the case of USD, euro (EUR), British pound (GBP), Japanese yen (JPY), Swiss franc (CHF), the Australian dollar (AUD) and Canadian dollar (CAD) with data that spanned from 1991 to 2007. They find causality both directions (bi) and a direction (uni) directional-sequence data. The result also indicated that the exchange rate is not symmetrical and statistically are at higher order. Emekter, Jikarasakuldech & Snaith (2009) also found this ketaksimetrisan in Singapore dollars (SUD) and South African rand (SAR).

United States, Japan, Europe, and the UK are the countries trading parner Indonesia both in the real sector, the financial, as well as in the tourism sector. Their trading activities and excursions population of these countries raises their currency trading activities of these countries, as well as the Indonesian currency, which in turn will have an effect on the currency exchange rate changes each country.

The rate changes will determine the value of the trade balance (Wang, 2009). In terms of expenditure, the balance sheet value perdaangan changes will cause changes in national income or gross domestic product. The effect of each rate to gross domestic product are as follows:

(1). Changes in currency exchange rates against the currencies of Indonesia, United States (GBP / USD) to give effect to the changes in gross domestic product (Grubacic, 2000; Ulfia 2011; Dauda, 2011; Abbas, 2012; Puspitaningrum, 2014)

(2). Indonesian currency rate changes against the Japanese currency (USD / JPY) to give effect to the changes in gross domestic product (Pradeka, 2012)

(3). Changes in currency exchange rates against the currencies of Indonesia Europe (USD / EUR) to give effect to the changes in gross domestic product (Tucker, 1991; McNown and Wallace, 1994; Tabas, 2012; and Sanggor, 2013)

(4). Changes in currency exchange rates against the currencies of Britain Indonesia (USD / GBP) to give effect to the changes in gross domestic product (Jilani 2010; Ariany, 2012).

Interaction between the Indonesian currency exchange rates against the currencies of four countries (USA, Japan, Europe, and the UK) are also associated anyway, to give effect to the change of national income (gross domestic product).

Visually design that shows the relationship between the interaction effect of currency exchange rate currency Indonesia with four other countries (USA, Japan, Europe, and the UK) to GDP is indicated by the path diagram in Figure 1 below.

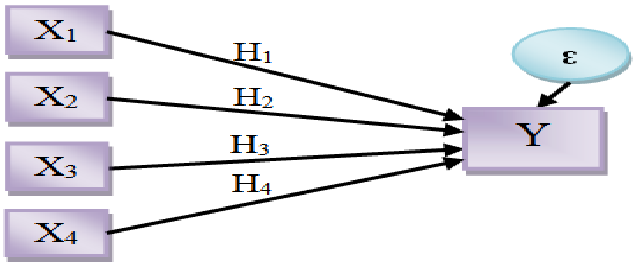

Figure 1. Diagram Relations Line Exchange to GDP

Specification:

X1 = exchange rate AUD / USD; X2 = exchange rate of USD / JPY; X3 = exchange rate of USD / EUR; X4 = the exchange rate USD / GBP; and Y = Indonesian national income (GDP)

Based on the design of the relationship shown by the path diagram in Figure 1 above, the hypothesis can be stated as follows:

1. Indonesian currency exchange rate has influence on United States currency (GBP / USD) toward national income (H1)
2. Indonesian currency exchange rate has influence on Japanese currency (GBP / JPY) toward national income (H2)
3. Indonesian currency exchange rate has influence on European currency (USD / EUR) toward national income (H3)
4. Indonesian currency exchange rate has influence on British currency (EUR / GBP) toward national income (H4)

II. RESEARCH METHODS

The type of this study used quantitative research. This selection was based on a consideration of data relating to the variables, ie the values of all variables that have occurred.

Place of research conducted in the relevant institutions and research data that is associated with PT Bank Indonesia (BI), and the Central Bureau of Statistics (BPS). The data obtained were processed and analyzed at the Laboratory of Computing and Information Technology Unit (UTI), University of Halu Oleo.

The type of data from this study are time series data in the form of secondary data, which uses the data that has been calculated and published by certain institutions that become the object of study, namely Bank Indonesia (BI) and the Central Bureau of Statistics (BPS). As stated previously that the data rate or currency exchange rate of the rupiah against foreign currencies 4 (ie: IDR / USD, USD / JPY, GBP / EUR, USD / GBP), and the national income or GDP is measured in terms of quantitative data at any point of time quarterly. Therefore, the data of this study include the type of quantitative data time series is quarterly data (quarterly) from January to December 2013.4 2004.1

The Source of data from this study were obtained five variables on agency PT Bank Indonesia (BI) and the Central Bureau of Statistics (BPS), as well as other relevant institutions. Necessary data can be obtained from the searches on the website of the agency which provides database services online. Data exchange (rate) obtained from Bank Indonesia (BI), while data on Gross Domestic Product (GDP) was obtained from the Central Statistics Agency (BPS). The necessary data searchable online and downloaded at the website address: http://www.bi.go.id; http://www.ortax.org; http://www.worldbank.org and http://www.bps.go.id

The raw data collected is then compiled into a table worksheet with the Excel application program. Based on an Excel worksheet table is then processed to obtain time series data fifth study variables using formulas that include:

$$Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \dots + \beta X_{i(t-j)} + \dots + \varepsilon_t$$

As for the population of this research is the data rate and the stretch of quarterly GDP from 2004 to 2013. Data rupiah exchange rate against four major currencies, namely (GBP / USD, USD / JPY, GBP / EUR, USD / GBP) and GDP (gross domestic product) in the time interval spanning from January 2004 until the month of December 2013 for 10 years. With a sampling technique based on the destination, which is the point of time the sample quarterly (quarterly). So there are 4 samples of data per year for 10 years in that period of time. Thus, there are 40 samples of data each variable. Because there are five variables, then there are 200 samples of data to be processed by the various models of the required statistical tests, which include using the formula shown above.This study consisted of 5 (five) variables, namely, 1 (one) dependent variable ie national income (GDP), and four (4) independent variables namely: Indonesian currency rates against the US currency (GBP / USD), exchange rates Indonesian currency against the Japanese currency (GBP / JPY), the Indonesian currency exchange rate against European currencies (USD / EUR), and currency exchange rate against the currencies of Britain Indonesia (USD / GBP).

III. DATA ANALYSIS

In accordance with the problem, the purpose of research, and the research hypothesis, then the data analysis used is multiple linear regression analysis using software (SPSS version 20). This technique is used to test the dependent variable ie national income (GDP), and four (4) independent variables namely: Indonesian currency rates against the US currency (GBP / USD), the Indonesian currency rate against the Japanese currency (USD / JPY), the Indonesian currency exchange rate against European currencies (USD / EUR), and currency exchange rate against the currencies of Britain Indonesia (USD / GBP).

In connection with the above test, the statistical test model that will be used is multiple linear regression model proposed by the Great (2009). That to test the hypothesis, used multiple linear regression model

$$Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \dots + \beta X_{i(t-j)} + \dots + \varepsilon_t$$

Where α_0, α_1 dan β the regression parameters, t time, j lag time, and ε_t error at the time, and X_i is variable currency exchange rate with $i = 1,2,3,4$ variable that currency index.

VI. RESULT AND DISCUSSION

Discussion of the results of this study explain the variable currency exchange Indonesia with United States currency (GBP / USD), currency exchange Indonesia with the Japanese currency (GBP / JPY), Currency Exchange Indonesia with the European currency (USD / EUR), and currency exchange rate Indonesia with British currency (USD / GBP) which do not affect the national income. Where it has been stated previously that the variable exchange rates Indonesia with United States currency (GBP / USD), Currency Exchange Indonesia with the European currency (USD / EUR), and currency exchange rate Indonesia with British currency (EUR / GBP) effect significantly to national income, while the Indonesian currency exchange rate with the Japanese currency (GBP / JPY) no significant effect on national income.

1. Effect of currency exchange Indonesia with United States currency (GBP / USD) to national income

   In the results of this study support the hypothesis that the first Indonesian currency exchange rate with the US currency (GBP / USD) had no significant effect on national income. This means that national income rose, the Indonesian currency exchange rate with the US currency (GBP / USD) weakened. Indonesia as a spearhead economic progress of the Indonesian currency weakened exchange rate with the US currency (GBP / USD), although not giving meaning. The results support the research conducted by Pratama and Santosa (2012) obtained results that GDP had a negative and significant relationship to the exchange rate in the period 1997.3 - 2011.4. Vice versa, if the currency exchange Indonesia with United States currency (USD / $) to weaken the national income also improved. No significant influence shows that the Indonesian currency exchange rate with the US currency (GBP / USD) has a less important role in increasing the national income.

2. Effect of currency exchange Indonesia with the Japanese currency (GBP / JPY) against national income
Based on the test results of multiple regression showed that the Indonesian currency exchange rate with the Japanese currency (GBP / JPY) no significant effect on national income. Where this is not in accordance with the second hypothesis that the Indonesian currency exchange rate with the Japanese currency (GBP / JPY) have a significant effect on national income. The results obtained do not support research conducted by Ruslan Azhari (2011) which states that the Indonesian currency exchange rate with the Japanese currency (GBP / JPY) have a significant effect on national income. No Significant in this study are consistent with research Pradeka 2012 that the Indonesian currency rate changes against the Japanese currency (GBP / JPY) to give effect to the changes in gross domestic product.
3. Effect of currency exchange rate Indonesia with the European currency (USD / €) to national income
The results support the hypothesis that the third Indonesian currency rates with European currencies (USD / EUR) no significant effect on national income. The results support the Indonesian currency rate changes against the European currency (USD / EUR) to give effect to the changes in gross domestic product (Tucker, 1991; McNown and Wallace, 1994; Tabas, 2012; and Sanggor, 2013)
4. Effect of currency exchange rate Indonesia with British currency (USD / GBP) to national income
Results of this study support the hypothesis that the four currency rates Indonesia with British currency (USD / GBP) no significant effect on national income. This means that national income can be achieved if currency exchange Indonesia with British currency (EUR / GBP) high. Results of this study support the statement put forward (Jilani 2010; Ariany, 2012) that changes in currency exchange rates against the currencies of Britain Indonesia (USD / GBP) to give effect to the changes in gross domestic product.

V. CONCLUSION

Based on the results of the discussion, and interpretations that have been described, then one can draw some conclusions as follows:

1. Indonesia's currency exchange rate with the US currency (GBP / USD) had no significant effect on national income.
2. Indonesia's currency exchange rate with the Japanese currency (GBP / JPY) no significant effect on national income.
3. Indonesia's currency exchange rate with the European currency (USD / EUR) no significant effect on national income.
4. Currency exchange Indonesia with British currency (USD / GBP) no significant effect on national income.

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