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THE INFLUENCE OF EXCHANGE RATE ON EXPORT ACTIVITIES: A STUDY ON INDONESIAN EXPORTS TO JAPAN

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ABSTRACT
Several aspects may affect the export activities. One of them is the exchange rate of a country's currency against US Dollar as one of the parameters of world's currency exchange standard. Indonesia is part of the export activities of international trading through export activities to Japan. This study is intended to examine the influence of the currency of Indonesian Rupiah (IDR) against US Dollar (USD) on the Indonesia export activities. This is an explanatory research involving samples derived from secondary data from the Central Bureau of Statistics of Indonesia within the period of 2011-2015, Ministry of Trade of Indonesia, and Bank of Indonesia. The results indicate that the IDR exchange rate in US dollar has a significant effect on the export activities of Indonesia. This is due to changes in production costs as well as the cost of entry tariffs as the exchange rate changes.

KEY WORDS
Exchange rate, export, international trading, Japan, Indonesia.

Smith in Musadieq (2010: 9) states that trade between two countries is based on the absolute advantage of one country that produces goods utilized from nature or other available sources and has a high advantage, and then sells its goods as commodities to countries that cannot produce the goods. In contrast to Ricardo's theory in Musadieq, (2010: 9) that the advantage should be the comparative advantage of which a country can produce goods more efficiently than any other countries. The existence of the different advantages of available resources and the level of efficiency in each country encourages such trading activities between countries. International trade helps some country to get the goods or services with good quality and low price.

There are several methods to conduct international trades, one of which is exporting. Export is an activity of transporting any domestic goods or services abroad (Ball, et all, 2014: 20). Export is one type of international business that is generally done by companies that have important roles in increasing foreign exchange reserves as well as expanding the economic condition of a country.

In relation with export activities, export prices certainly involve foreign currency. Trading with other countries requires currency conversion as the involved countries may have different currency with different exchange rates in those countries. Changes in currency values become factors that may influence the decision to purchase the exported goods and commodities due to a law of one price. One price law is where the same products sold in different countries are charged the same price, and the price is converted to other currencies (Will, et all, 2014: 378). The use of this one price law will have impacts on the prices in other countries in case of exchange rate fluctuations. If the exchange rate of a currency against other currency is subject to tax or decline, and then the buyers may need more or less money to convert to another currency. This study is intended to test whether there is influence of Indonesian Rupiah (IDR) exchange rate on US Dollar (USD) to export activities in Indonesia.

LITERATURE REVIEW

Export activities means exporting or transporting goods from customs areas in accordance with Law on Customs (Beacukai, 2013). Import, on the other hand, is an activity

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of bringing in goods to customs area in accordance with the law (Beacukai, 2013). Export and import activities becomes the basis of the international trades and is usually the largest business activity in many countries.

According to Ball, et al. (2014: 20), "export activity is transporting any goods or services domestically abroad or outside the region". The essence of the above theory is that the export activities can be said as to sell a number of regular production domestic goods, either goods or services, to outside customs areas in accordance with customs laws.

Exports are often utilized as they require less investment with less risks; exports do not require additional manpower with large capital. The increase of export activities may also have positive impacts on other sectors such as domestic output growth, the increasing number of employment opportunities which in turn will increase public income and the growth of gross domestic product (GDP) (Tambunan, 2001: 2-3).

Definition of Exchange Rate. The exchange rate is the value of which one currency is converted into other currency. "The conversion of currency can be done in foreign exchange market, which is a market specialized for currency converter of one country with currency of other country" (Hill et al., 2014: 370). According to Madura (2008: 85), "the exchange rate is used as a measure of the value of one currency against another currency". Based on the definitions above, it can be concluded that the exchange rate is as a measure of a currency value that will be converted into other currencies.

The currency value of one country may vary depending on the economic conditions of the country. Frequent changes in the value of the currency may cause concern for the businessmen and foreign investors who will invest their capital in the country. For exporters, the fluctuation of exchange rate may have impacts on the value of export companies because they can affect the amount of cash inflows (revenue from export prices of goods) and cash outflow (if using imported raw materials) (Madura, 2008: 85).

Exchange rate system. The exchange rate system is classified according to the government level controlling the exchange rate. Here are some classifications of exchange rate system according to some experts:

Fixed Exchange Rate. This exchange rate system is used in countries where the government is heavily in control of the exchange rate movements. In this system, governments maintain the exchange rate, or else it is only allowed to fluctuate within narrow limits. The implementation of this currency system is believed to lead to several benefits for the country, with a stable exchange rate of security for businessmen and investors to do business and invest their money and capital in the country because they are not worried about future changes in the value of the currency that might be able to jeopardize them. Countries with high levels of foreign direct investment (FDI) usually apply low interest rates; this is what can increase the economic growth (Madura, 2008: 154).

Freely Floating Exchange Rate. This system implements the law of demand and supply. The government does not participate in the determination of the exchange rates. The exchange rate is determined by the market resistance and fluctuations occur in every day bases (Hill et al., 2014: 398). Madura (2008: 156-157) states that the exchange rate on this system is fully set by market forces without any intervention from the government. The advantage of this system is that the central bank does not need to keep the exchange rate to a certain extent, and it does not affect other countries if the country is experiencing any economic problems. The downside of this system is the frequent changes of currency value that causes inflation. The only way to deak with this system is that the companies should be able to predict and anticipate the exchange rates in the future.

Managed Floating Exchange Rate. This system is called managed floating system because theoretically the value of currency is determined by the market forces as well as the central bank of the country. The central bank retains its authority to intervene in the foreign exchange market as well as to keep its currency exchange rate if the currency might depreciate too extreme (Hill et al, 2014: 398). This system is criticized because the government is considered to be able to manipulate the exchange rates for the benefits of its own country, and in the future, it may affect other countries (Madura, 2008: 158).

Pegged Exchange Rate System. Currency value on this system is relatively fixed in the certain currency that becomes the standard or benchmark. The exchange rate between the currencies with other currencies is determined by the pegged currency (Hill et al, 2014: 398). According to Madura (2008: 158), pegged exchange rate system is where the value of the currency of the origin country is pegged with the value of one country's exchange rates. When the value of the currency of the origin country is set at the value of the currency of another country, which is the benchmark reference, the movement of the value of the currency of the origin country against the other currency will follow the movement of the pegged currency.

The use of this system may be able to attract investors to invest their capital because it is expected that the exchange rates will remain stable. On the other hand, there are concerns in the minds of investors until when the country can maintain its benchmark value. Countries that use this exchange rate system must have strong economic or political conditions in order to maintain the value of benchmarked country.

The Influence of Exchange Rate on Export Volume. Changes in the exchange rate may affect the value of a firm because it can affect the amount of cash inflows (revenue from export prices of the commodities) and cash out (if using imported raw materials) (Madura, 2008: 85). The exchange rate may affect the value of the price when it will be converted to the original country. The application of a one-price law emphasizes the same price movements in different places or countries (Simorangkir & Suseno, 2004: 28).

Income of sellers from various countries that is obtained from the set price should be converted to the currency of the country of origin in order to be used for production in the country. The value of local currency as it is converted from foreign currency will be greatly influenced by the prevailing exchange rate. If there is a decline in the local currency against the foreign currency, the value of exports will increase because the exporters will earn more local currency (Simorangkir & Suseno, 2004: 29).

From the the consumers' point of view, a weakening of the exchange rate may cause the export goods become cheaper; the consumers as the results could buy more goods, and it has impact on the increasing exports. The weakening of the exchange rate will increase the prices of the imported goods in one country. The strengthening of the local currency against foreign currencies may cause the declining export values even though the amount of exports remains because fewer local currency values are obtained when converting the currencies (Simorangkir & Suseno, 2004: 30). Due to the strengthening of the currency, the price of imported goods will also decrease. Based on the above explanation, it can be concluded that changes in currency values may affect the value of exports as exporter's income which will then affect the production volume in the future.

METHODS OF RESEARCH

This is an explanatory research employed through quantitative approach. This research utilized secondary data obtained from Central Bureau of Statistics of Indonesia, Ministry of Trade of Indonesia, and Bank of Indonesia. The sample data in this study were the monthly data of the Indonesian Rupiah (IDR) exchange rate against US Dollar (USD) and the number of Indonesia export activities to Japan in 2011 - 2015.

RESULTS OF STUDY

Exchange rate of IDR against USD. The exchange rate occurs between one currency and currencies in other countries. In this study, the exchange rate used was the exchange rate of the Indonesian Rupiah (IDR) against the United States Dollar (USD). The data used were the median rate obtained from the selling rate with the buying rates. This data were calculated and recorded monthly by Bank of Indonesia (BI). This study employed median rata data within January 2011 to December 2015 of IDR per USD.

The exchange rate may reflect the economic condition of one country at a certain period. The better the economic condition of the country, there will be a strengthening trend

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of the currency. Here is the result of descriptive statistical calculation of the exchange rate of IDR against USD:

Table 1 – Exchange Rate of Indonesian Rupiah (IDR) against US Dollar (USD) in 2011-2015

Months	Years				
	2011	2012	2013	2014	2015
January	9,037.38	9,109.14	9,687.33	12,179.65	12,579.10
February	8,912.56	9,025.76	9,686.65	11,935.10	12,749.84
March	8,761.48	9,165.33	9,709.42	11,427.05	13,066.82
April	8,651.30	9,175.50	9,724.05	11,435.75	12,947.76
May	8,555.80	9,290.24	9,760.91	11,525.94	13,140.53
June	8,564.00	9,451.14	9,881.53	11,892.62	13,313.24
July	8,533.24	9,456.59	10,073.39	11,689.06	13,374.79
August	8,532.00	9,499.84	10,572.50	11,706.67	13,781.75
September	8,765.50	9,566.35	11,346.24	11,890.77	14,396.10
October	8,895.24	9,597.14	11,366.90	12,144.87	13,795.86
November	9,015.18	9,627.95	11,613.10	12,158.30	13,672.57
December	9,088.48	9,645.89	12,087.10	12,438.29	13,854.60
Highest rates	9,088.48	9,645.89	12,087.10	12,438.29	14,396.10
Lowest rates	8,532.00	9,025.76	9,686.65	11,427.05	12,579.10
Averages	8,776.013333	9,384.239167	1,0459.09333	11,868.6725	13,389.41333
Standard of deviation	209.7203255	220.3173614	898.0045001	322.6647563	527.5902624
Highest rate = 14,396.10 Lowest rate = 8,532.00 Average = 10,775.48633 Standard of deviation = 1,760.345754					

Source: Bank of Indonesia, 2011-2015.

The table indicates a trend of weakened value of the IDR against USD in terms of the average value of the exchange rates each year, in which it depreciates. In 2011, the average value of the exchange rate was IDR 8,776 per USD. In 2012, the average value of the exchange rate depreciates with the total value of IDR 9,384 per USD, and then the average value continues to depreciate considerably to 2015, reaching the rate up to IDR 13,389 per USD.

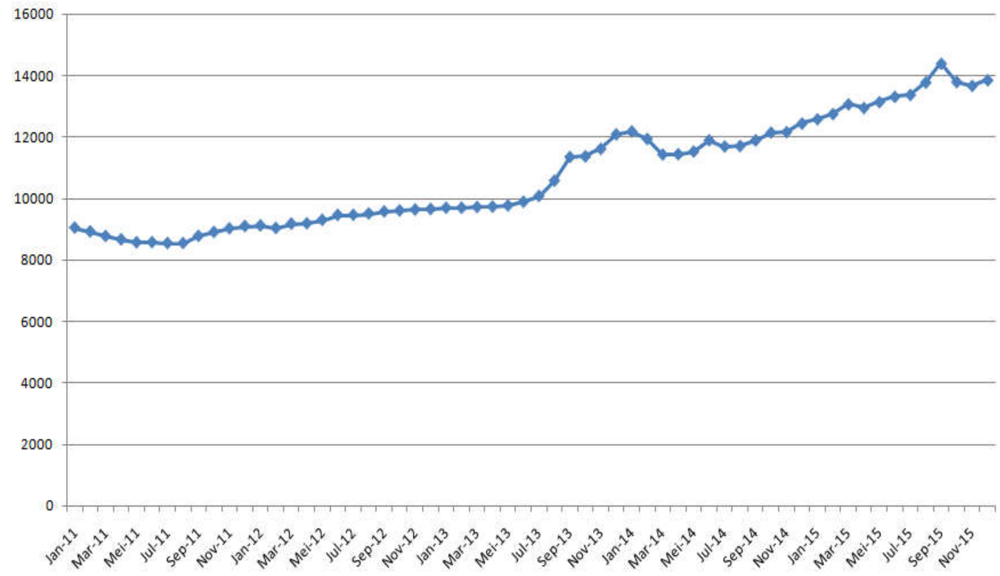

Figure 1 – Graph of the exchange rates of IDR against USD
Source: Data processed (2017)

The graph shows that the exchange rates of IDR against USD keep experiencing depreciation. The highest rate occurred in September 2015, while the lowest rate was in

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August 2011. The average exchange rate in 2011 to 2015 was IDR 10,775 per USD with standard of deviation of IDR 1,760 per USD. The exchange rate of the Indonesian Rupiah against US Dollar kept to fluctuate due to the cessation of the Fed's stimulus sent the Asian stock market on a decline that affected the stock market in Indonesia as well. This decline allows investors to withdraw their investments so that the exchange rate may depreciate.

Export Volume of Indonesian Products to Japan. The export volume of Indonesian products to Japan is mainly defined as the amount of tuna export value made by Indonesia to Japan in kilograms (kg). The export volume of the product was calculated monthly from January 2011 to December 2015. The following is the result of the descriptive statistics of variable of the export volume of Indonesian products to Japan in the last five years shown in Table 2:

Table 2 - Export volume of Indonesian products to Japan in 2011-2015 (in USD per kg)

Months	Years				
	2011	2012	2013	2014	2015
January	1,540,308	2,289,329	2,155,193	1,516,556	1,753,229
February	1,414,640	1,689,805	1,185,163	1,418,712	1,381,200
March	1,539,728	1,454,024	1,759,884	1,983,978	2,199,582
April	3,180,364	1,627,995	2,823,566	2,270,116	842,541
May	1,743,971	1,817,365	3,087,626	1,929,413	1,579,018
June	2,073,585	2,421,995	3,025,263	1,548,346	1,344,979
July	1,945,629	2,136,533	2,803,252	3,033,920	2,260,315
August	2,398,686	2,385,416	2,005,341	1,883,972	3,024,481
September	1,978,160	3,104,534	3,394,379	2,259,858	2,182,003
October	5,487,654	4,395,890	4,843,048	2,398,814	2,958,404
November	5,978,848	3,138,893	3,365,129	2,208,715	3,895,685
December	5,728,651	2,774,838	2,668,737	2,665,740	2,728,082
Highest volumes	5,978,848	4,395,890	4,843,048	3,033,920	3,895,685
Lowest volumes	1,414,640	1,454,024	1,185,163	1,418,712	842,541
Averages	2,917,518.667	2,436,384.75	2759715,083	2093178,33	2179126,58
Standard of deviation	1762955,575	829435,0453	939791,7895	481042,824	865359,074
Highest volume = 5,978,848 Lowest volume = 842,541 Average = 2477184,683 Standard of deviation = 474161,1056					

Source: Ministry of Trades of Republic of Indonesia, 2011-2015.

Based on the Table, the average export volume of Indonesian products to Japan has fluctuated in recent years. The average export volume for five years is 2,436,384.75 kg with a standard deviation of 474161.1056 Kg. The highest point of the export volume of Indonesia occurred in November 2011 amounting of 5,978,848 Kg, while the lowest volume was in April 2015 of 842,541 kg. The average export volume of Indonesian Products to Japan in 2011 was 2,917,518 Kg. In the following year, the average export volume of Indonesian products to Japan decreased with the volume of 2,436,384 kg. In 2013, the average export volume of the products was subject to volume of 2,759,715Kg. In 2014, the export volume again declined with the value of 2,093,178 Kg. The average exports of Indonesian products to Japan were slightly less than the previous year with a volume of 2,179,126 kg by 2015 (Figure 4.3). The decline in product exports to Japan was due to the decline in consumption figures that were dominated by Japanese population of both adulthood and old age.

T-test was done to know the result of hypothesis testing. Based on the statistical calculation of the t-test, it can be concluded that there is a significant negative effect of the exchange rate of IDR against USD (X) on the export volume of products (Y). The negative effect can be seen when the exchange rate of IDR against USD (X) has increased, while the export volume of products (Y) will decrease. Based on the t-test, the hypothesis stating that there is significant influence of the exchange rate of IDR against USD (X) on the export volume of products (Y) is partially acceptable. This study is in accordance with previous

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research by Yudiarosa (2009) that there is a significant negative effect of the exchange rate of IDR against USD on the export volume of products.

The results of this study are not in accordance with the theory proposed by Simorangkir and Suseno, saying that the depreciation of the exchange rate against foreign currencies may result in the increased exports as the importers are able to buy more goods, so that this may increase the exports. This discrepancy is likely due to several factors of production which are still using imported goods, so that this may increase the production costs.

CONCLUSION

There is a significant negative effect between the exchange rate of IDR against USD (X2) on the export volume of products, e.g. Tuna (Y) with the production significance of 0.000, that is smaller than the specified production level of 0.005. Based on the t-test, the hypothesis stating that there is significant influence of products of the exchange rate of IDR against USD (X2) on the export volume (Y) is partially acceptable. The impact of exchange rate fluctuations may affect the production costs.

RECOMMENDATIONS

The government is expected to be able to improve and maintain the procurement policy of product quality inspection before exporting. Quality standards should be tailored to the standards of the trading partners; enhancing the quality assurance and product safety may also boost the export volume of Indonesian products as it opens opportunities in other international markets. It is expected in subsequent research to develop this research by considering various other variables.

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