Analysis Of The Influence Of Large Trade Price Indices, Dollar Exchange Rates, Interest Rates On Imports Of Capital Goods

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ABSTRACT: Import of capital goods is a decision to help meet the domestic needs of its production sector that can produce capital goods to maximize materials in the country. Import of capital goods is one way out for a country to inhabit its domestic needs that can not be produced alone, therefore must buy from other countries that are able to make such capital goods. This study aims to find out how the Influence of Large Trade Price Index, dollar exchange rate, and Interest Rate on the import of capital goods in the period 2000-2019 both simultaneously and partially. In addition, this study aims to find out the variables that have the most effect on the import of capital goods in the period 2000-2019 by using EViews-9. The results of the data analysis showed simultaneously Indonesia's large trade price index, the dollar exchange rate against the rupiah and Indonesia's interest rate simultaneously influenced the import of capital goods in Indonesia in 2000-2019. Indonesia's large trade price index variables and the dollar exchange rate against the rupiah partially positively and significantly affect the import of goods in 2000-2019 while the Indonesian interest rate variable partially negatively and significantly affects the import of goods in 2000-2019. The variable that has the most influence on the import of capital goods is the variable interest rate on the import of capital goods.

Keywords - large trade price index, dollar exchange rate, interest rate, import of capital goods

I. INTRODUCTION

Indonesia itself has a weakness that has not been able to produce capital goods, due to the limitations of human resources owned by Indonesia, so as to meet the need for capital goods Indonesia must import it from other countries, with the import of capital goods carried out will make Indonesia able to produce its own finished or semi-finished goods that were previously still imported.

The problem of the development of this industry in Indonesia becomes something to consider and in reality there are still problems that twist this industry, if it can be solved and developed to meet 75% of raw materials or capital goods that are still imported. Indef Executive Director, Mr. Ahmad Erani Yustika, said that "the domestic capital supply industry sector is still weak and this should be the direction of government policy if it wants to compete with the growth of other countries" when contacted by the Balance Sheet, Monday (22/10) (kemenperin.go.id). It is expected that in the future Indonesia will not have to rely on other countries, and is able to meet its own needs and even export goods previously imported (Mardianto, 2014).

Indonesia's economy will in the future experience intense competition at the Asian level, namely liberasization raised in various multilateral cooperation, one of which is asean cooperation named ASEAN Economic Community (MEA) 2015. MEA aims to create ASEAN as a single market and a unified production base where there is free flow of goods, services, production factors, investment and capital as well as the elimination of tariffs for trade between ASEAN Countries. In addition to the challenges in the Southeast Asia region, Indonesia must also face economic competition with developing countries and even developed countries around the world, such as ASEAN multilateral cooperation plus the People's Republic of China named ASEAN-China Free Trade Area (ACFTA), cooperation of countries across Asia Pacific (APEC), and so forth (Ayu &Yogi, 2015).

Indonesia as one of the countries in Asia that continues to boost the production of goods to be sold with the aim of competing with countries at other foreign levels in order to increase economic growth in the future.
This increase in economic growth should be supported by optimal domestic production, certainly by looking at aspects of supporting such production such as land, labor, and capital goods.

Indonesia's population of 269,536,482 million in 2019 and will continue to grow, and Indonesia will receive a demographic bonus in 2020-2030 (Indonesiastudents.com), in other words Indonesia has reliable human resources as a factor in labor production. The required land area is sufficient, we know that Indonesia consists of various islands with enough land to be used as a place of production. Indonesia's current shortcomings in optimizing production are capital goods, this is one that makes Indonesia still under other countries.

Empirical studies conducted by Fan and Hu (2008) at the company level have shown that the import of capital goods will increase productivity. The results of the study also found that companies that use technology from abroad obtained through the import of capital goods in a developing country have a higher productivity than companies that use only domestic technology.

Capital goods are heavy equipment such as excavators (dredging machines), forklifts, metal processing machines, vehicles, which require a very large investment to buy them. The nature of capital goods is durable or durable so that it can be used in a period of many years. Metals and electrical products are fundamental components of capital goods (Carreras & Tafunell, 2005).

Mutreja, et.al (2013) revealed that 80 percent of capital goods production in the world is concentrated in only 8 countries, Eaton and Kortum (2001) further described these countries as France, Germany, Japan, Italy, Sweden, The United Kingdom, the United States, and Korea. Poor countries import most of the capital goods used domestically from those countries. Similarly, Indonesia as a developing country also imports large amounts of capital goods. This can be seen from the structure of Indonesian imports according to the type of use of goods.

The condition of the ups and downs of the import value of capital goods is certainly strongly influenced by several economic factors. When referred to economic theories as expressed by Mankiw (2006:231) factors that affect imports include; first, Consumer tastes, second, Prices of goods at home and abroad, third, Exchange rates (exchange rates), fourth Public income as consumers, fifth, The cost of carrying goods from one country to another, and sixth, policies taken by governments to regulate international trade.

Based on data from the Central Bureau of Statistics in 2019 it is known that the number of Imports of Indonesian Capital Goods from 2000-2019, where there is an increase from 2009-2012 and fluctuates again until 2019. This import activity occurs due to the absence of capital goods needed in the national market so that it must carry out import activities by buying it from abroad, with the results expected to help the government in the production of goods and services in order to meet domestic needs. The highest number of imports in Indonesia occurred in 2012, and the least amount occurred in 2003. This shows the seriousness of the government in building production optimization in order to achieve a better economy and can compete among Asian countries. However, by increasing the import of capital goods will have an impact on the increasing unemployment and depletion of foreign exchange reserves, therefore this import must remain controlled so as not to turn around the harm to the State, and must still be followed by the development of good education on human resources in order to prevent the increase in the unemployment rate in the country, therefore import activities are mainly carried out on capital goods aimed at supporting growth (Dison & Saskara, 2015).

Another variable believed to affect imports according to Mankiw (2006:231) is price. Price developments, especially trading prices at the sales level on a large party basis can be indicated by the Large Trade Price Index (PPI) figures. IHPB or Wholesale Price Index (WPI) is a common indicator used to see price developments other than Consumer Price Index (CPI) as used by Bayraktutan and Arslan (2003) in its research looking for a link between prices, exchange rates, and import demand. An index number is a number that represents a relative change in price, quantity, or value compared to an initial period, with the aim of showing a percentage change from one period to another.

Large trade price index is the reference price in the import activities of capital goods that the State wants to do, in other words this price index is used as one of the considerations in the decision making to be made, fluctuations in the price of goods in the large trade price index of Indonesia. Based on data from the Central Bureau of Statistics in 2019 it is known that the large trade price index in Indonesia from the industrial goods sector continues to fluctuate from 2000-2019, with the highest import rate in 2012, and the lowest in
2003. The positive impact of the increase in imports of capital goods according to BI is assumed to contribute to helping the balance of payments that are running a deficit by boosting economic growth through optimization of production, while the negative impact of too much import activity is the depletion of foreign exchange reserves owned by the country, so that our foreign currency savings are less.

The capital goods industry in the country still does not meet the needs that must be met, this is due to the dependence of raw materials and tools that must be used that should be able to be produced in the country, forced to import from abroad. Not only that, the government's lack of attention to the industrial sector is also one of the causes. The decrease was caused by the weakening of imports of capital goods from year to year. As a result, domestic production capacity also decreased, affecting the value of investments entering the country.

Interest rates are factors that can affect the import of capital goods, a similar opinion was also expressed by Septiana (2011) which states that relatively low interest rates are a condition of creating a domestic investment climate. The higher the interest rate, the less eager investors are to invest. The difference in interest rates will have an impact on the change in the amount of investment in a country, both from domestic and foreign investors.

Bank interest rates are used to control a country's economy. Interest rates are regulated and set by the government aimed at maintaining the economic viability of a country. This interest rate is important to take into account because the average investor always expects a greater return on investment. Interest rate determination is carried out by Bank Indonesia in accordance with Law No. 23 of 1999 concerning Bank Indonesia. Based on Bank Indonesia data in 2019, fluctuations in Indonesia's interest rate over a period from 2000 to 2019 are the benchmarks in foreign investment investors as well as imports of capital goods made by the State. Many factors are suspected to influence the development of imports of capital goods in Indonesia, especially in the period 2000 to 2019 where in that period the interest rate position in Indonesia continues to change.

Exchange rate or commonly called the exchange rate of the dollar, especially the United States against the rupiah is a very important thing to look back on before importing capital goods or anything, because appreciation or depreciation of the rupiah against the dollar will benefit the State in terms of imports and exports that want to be done. The U.S. dollar exchange rate is used as the international standard currency due to its high currency stability and can be easily traded and can also be accepted by anyone as a means of payment latief (2001:15). While Mankiw (2003) distinguishes the exchange rate into two, namely nominal exchange rate and real exchange rate. Nominal exchange rate is the value at which a person can trade currencies from one country to another. Real exchange rate (real exchange rae) is the value at which one can trade goods and services of a country with goods and services from another country.

The exchange rate affects the economy through many channels, this scales the national price system to the world, affecting the ratio of key macroprices, such as those between tradable and non-traded goods, capital and labor goods, and even exports and imports (Roberto&Lance, 2006). Exchange rates can be used as a tool for the economic condition of a country, this exchange rate instability affects the flow of capital or investment and international trade. Indonesia as a country that imports a lot of industrial raw materials is experiencing the impact and instability of the exchange rate, which can be seen from the increase in production costs that cause the price of Indonesian goods to increase.

Based on data from the Central Bureau of Statistics in 2019 it is known that fluctuations in the rupiah exchange rate that occurred from 2000-2019, in this sense the currency exchange rate will not last long at the highs and lows, all these circumstances will always change in a short time. When the rupiah position weakens then the prices of goods will rise, as well as if the value of the rupiah in the highest position then the price of imported goods will be cheaper, at that time the best opportunity in importing into the Country.

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The relationship of the large trade price index with the import of capital goods in this study is positive and significant, in other words the rise of the IHPB will have an impact on the rising cost of production and the selling price of products. If this happens, then the price of goods produced in the country becomes expensive so that the demand for imports increases. Therefore, the hypothesis is obtained as follows.

H1: IHPB partially positively and significantly affects the import of capital goods in 2000-2019.

The exchange rate in economic theory contained in Mankiw (2006:231) states that the exchange rate or exchange rate is one of the factors that influence the high low imports that the State wants to make. In situations
where the State needs capital goods to support exports, the high low exchange rate is not a reference of the government or the public because of the need for capital goods that can not be delayed, because imports are carried out due to unstable economies such as the 2008 crisis that indirectly affects the economy. The exchange rate relationship with the import of capital goods in this study is positive and significant, which means that rising exchange rates continue to make imports increase at the necessary needs and in unstable economic situations. Therefore, the hypothesis is obtained as follows.

H2: The dollar exchange rate partially positively and significantly affects the import of capital goods in 2000-2019.

Interest rates are set through consideration so that the set interest rate can be a counterweight in the investment market. The higher the interest rate, the lower the import of capital goods, the difference in interest rates will have an impact on systematically solving problems (Hidayat and Sedarmayanti, 2002:25). The interest rate reduction is carried out in a situation where domestic investment decreases due to the high interest rate set by the State, so that the interest rate reduction is done so that investors want and can put shares in Indonesia. Therefore, the hypothesis is obtained as follows.


Previous research by Agung & Wita (2014) stated that inflation, foreign exchange reserves, and gross domestic product simultaneously had a significant impact on the import of capital goods in Indonesia in 1994-2011. But partially, the variable gross domestic product alone has a significant effect. Other studies have also concluded that partially, GDP, IHPB, and PMA have a positive and significant influence while the dollar exchange rate has a negative and significant influence (Ayu & Yogi Swara, 2015). Therefore, the research hypothesis is as follows.

H4: PPI, Dollar Exchange Rate, Interest Rate simultaneously significantly affect the import of capital goods in 2000-2019.

III. METHODS

This research will examine about the import of capital goods in the territory of Indonesia because Indonesia is a country rich in natural resources that has the potential to produce goods or produce its own capital goods but still have to import to meet domestic needs.

The variable bound in this study is the import of capital goods (Y). Import data obtained in this study is the value of imports of capital goods such as a number of heavy equipment in the form of machinery used as input factors to produce goods imported from abroad. The data was obtained from the Indonesian Central Bureau of Statistics (BPS) which was declared in units of US$ million during the period 2000–2019. The free variables in this study were IHPB (X1), dollar exchange rate (X2), and Interest Rate (X3). The Large Trade Price Index (PPI) is an overview of price developments at the level of large traders (wholesalers). Price developments covered are price developments in agriculture, mining and quarrying sector, industrial sector, export goods group, and imported goods group at the national level with percent (%). The dollar exchange rate in this study is the middle exchange rate, which is the price of the currency between the selling and buying exchange rates (divided in two) which compares the currency of a country against the currency of another country. In this study, the exchange rate of US$ against rupiah, data taken from 2000 - 2019 with rupiah units obtained from the Central Bureau of Statistics. The use of rupiah against the dollar is because the dollar is used as the reference currency for most countries in the world in conducting international trade activities in jutarupiah (Rp). It is an annual interest payment of a loan in the form of a percentage that can have a broad impact on the economic fundamentals of a country. The interest rate data used in this study is taken from Banki Indonesia through Bank Indonesia certificate for the quarter period from 2000 to 2019 with a unit of percent (%).

Analysis techniques used to find out or obtain an overview of the influence of IHPB, dollar exchange rate against rupiah and interest rate on the import of capital goods in 2000-2019, namely with multiple linear regression analysis for the population (PRF).

IV. RESULTS AND DISCUSSION

The regression model used in this study is a multiple linear regression model using the EViews-9 program. Based on the results of the processed data shown in appendix 4, it can be seen the equation of multiple linear regression as follows.
\[ Y = -15.57190 + 2.228663X_1 + 1.708490X_2 - 0.826679X_3 \]

\[
\begin{align*}
\text{Std.E} & = (5.918026) \quad (0.407439) \quad (0.471847) \quad (0.240768) \\
\text{t-value} & = (-2.631266) \quad (5.469935) \quad (3.620859) \quad (-3.433502) \\
\text{P value} & = (0.0181) \quad (0.0001) \quad (0.0023) \quad (0.0034) \\
R^2 & = 0.860593 \\
F & = 32.92408 \\
\text{Prob.F} & = 0.000000
\end{align*}
\]

The results of the data obtained in this study state that residuals from the variables of Indonesia’s large trade price index, the dollar exchange rate against the rupiah and the interest rate are normally distributed. Based on the processed data obtained jarque-bera value of 1.292 with probalibility 0.498 > 0.05 then it can be concluded that the data is normally distributed and the model is worth using for further analysis.

The results of the heteroskedastisitas test in this study used glejser test. Based on the processing of the data obtained obtained p value indicated by the prob value. Chi square (3) in Obs*R-squared is 0.1443> 0.05 then, it can be concluded that there are no symptoms of heteroskedastisitas in this study.

Multicolonrity tests calculated using the Eviews-9 application get results that indicate that the centered value of VIF X1 = 1.4492; X2= 1.5146; X3= 1.5675 where the value is less than 10, it can be stated that there is no multicolinearity problem in this study.

The autocorrelation test in this study using the Breusch-Godfrey Serial Correlation LM test can be seen in appendix 6. Based on the test results using Breusch-Godfrey Serial Correlation LM test obtained a result of 0.0841 where the result is greater than 0.05 or 0.0841>0.05 so that H0 is accepted or has other meanings there is no autocorrelation problem in this study.

The results of statistical test analysis using Eviews9 program at a real level of 0.05 obtained the value of Fhitung of 32.924 where Fhitung = 32.924 > Ftabel = 3.20 and Ho was rejected. Thus it can be concluded that simultaneously variables PHPB (X1), Exchange Rate (X2) and Interest Rate (X3) have a simultaneous effect on the import of capital goods in 2000-2019 (Y). This is supported by multiple determination coefficients (R2). The value of R2 indicates a variation of the bound variable (Import of capital goods in 2000-2019) described by its free variables (large trade price index, exchange rate and interest rate) simultaneously. Based on Appendix 4, obtained the value of R2 is 0.860 this means that 86.0 percent of imports of capital goods are influenced by large trade price indexes, exchange rates and interest rates, while 14.0 percent is influenced by other variables outside the research model.

The calculated result processed using the Eviews-9 application obtains a result indicating that the value of X1 t-count 5.470 > t table = 2.120 and probability value 0.000< 0.05 then H0 is rejected and H1 is accepted, and the result means that Indonesia’s large trade price index (X1) has a significant positive effect on the import of capital goods in 2000-2019 (Y). This result is in accordance with the research hypothesis. The results of EViews-9 output in this study showed the value of IHPB regression coefficient (X1) of 2,230 this means that if the IHPB variable is assumed to increase by 1% it will increase the import of capital goods by 2,230 tons assuming other variables are constant. Bayraktutan” and Arslan (2003), Pramana and Meydianawathi (2013) and Ayu Apsari and Yogi Swara (2015) who found that IHPB had a significant positive effect on imports. t calculate 3.621 > t table = 2,120 and probability value 0.002 < 0.05 then H0 is accepted, and this result means that the exchange rate of dollar against rupiah has a significant positive effect on the import of capital goods in 2000-2019. These results are in accordance with the research hypothesis. In theory when the dollar exchange rate appreciates then imports will decrease and vice versa if the dollar rate depreciates then imports will increase. EViews-9 Output results in this study showed the value of regression coefficient Kurs (X2) of 1,708 this means that if the variable exchange rate is assumed to increase by 1 US$ / Rp it will increase the import of capital goods by 1,708 tons assuming other variables are constant. Based on the results of the study showed the value of t count of 1,708 with a table t value of 2,120Because the value of t-count < the table then H0 received and rejected H1 which means there is a positive and significant influence of the dollar / rupiah exchange rate (X2) on the import of capital goods in Indonesia. The results of this study are supported by research. Dewayani (2015), Triyono (2008), Aditya and Saskara (2013) and Rustam Efendi (2009) concluded that imports are not solely dependent on rupiah exchange rate but rather influenced by the level of need. This result is also in line with the research of Oluwarotimi Odeh el al (2003) which states that the strengthening of the United States
dollar against the domestic currency in a country causes domestic consumers to have the ability to buy less which causes domestic importer activity to decline, so it can be concluded that if the United States dollar strengthens then the volume of imports will decrease.

The calculated results processed using the Eviews-9 application get a result that shows that the value of X3 t calculate -3,433 < t table = 2.120 and the probability value of 0.003 < 0.05 then H0 is accepted, and means that the interest rate does not have a significant positive effect on the import of capital goods in 2000-2019. These results are in accordance with the research hypothesis. Theoretically, the lower the interest rate, the higher the public's desire to borrow money in the bank. If this is the case then the level of public consumption will increase and it can trigger an increase in imports. The results of EViews-9 output in this study showed the value of the regression coefficientsuku interest (X3)by -3,433 this means that if the variable interest rate is assumed to weaken 1 percent it will increase imports of capital goods by 2,120 ton assuming other variables are constant. Based on the results of the study showed the value of t count of -3,433 with a t-table value of 2,120 because the value of t-count < the table then H0 received and rejected H1 which means there is a negative and significant influence of interest rates (X3) on the import of capital goods in Indonesia. The result was supported by the statement of Clifford Kendrick Hlatywayo (2014), Florentina Kurniasari (2019) who stated that when interest rates are relatively low it will encourage an increase in consumption which will ultimately also increase the volume of imports. There is a decrease in interest rates because the demand for deposits is reduced and the supply of public funds is abundant, the policy of lowering interest rates will be taken. This decrease is done in order to increase the interest of the public to borrow to borrow funds and reduce the amount of deposits.

V. CONCLUSION

The conclusions of this study are: 1) Variable indonesia's large trade price index, dollar exchange rate against rupiah and Indonesian interest rate simultaneously affect the import of capital goods in Indonesia in 2000-2019; 2) Indonesia's variable trade price index and the dollar exchange rate against the rupiah partially positively and significantly affect imports of goods in 2000-2019; and 3) Indonesia's variable interest rate partially negatively and significantly affects the import of goods in 2000-2019.

Advice for the government should start paying attention to the domestic industry. Especially industries that produce capital goods products. So as to reduce Indonesia's dependence on imports of capital goods. Analysis on the import of capital goods is still quite difficult to find, so the problem that occurs in the import of capital goods is not widely known. Hopefully for the researchers can further develop new models related to the import of Indonesian capital goods. For academics, this research should be able to make a reference or scientific reference on factors that affect the import of capital goods and is expected to develop the results of research by adding other factors that affect the import of capital goods.

REFERENCES


