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Analysis Of The Effect Of Exports, Imports And Foreign Debt On Indonesian Foreign Exchange Reserves In 2011-2021

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ABSTRACT:

This study aims to analyze the effect of exports, imports and foreign debt on Indonesia's foreign exchange reserves both simultaneously and partially in the 2011-2021 period. The related variables are foreign exchange reserves and the independent variables are exports, imports and foreign debt. In this study using secondary data in the form of time series data obtained from the Indonesian BPS (Badan Pusat Statistik) and Lokadata. The data analysis used is the classical assumption test (normality test, multicollinearity test, heteroscedasticity test and autocorrelation test), multiple linear regression and statistical tests (test of the coefficient of determination (R2), t test and F test, using the E-Views 9 application as analysis tool.The results of the partial regression coefficient analysis (t test) show that there is a positive and significant effect of the export variable and the foreign debt variable on the variable of Indonesia's foreign exchange reserves in 2011-2021, while the import variable shows no effect on the variable of Indonesia's foreign exchange reserves in 2011-2021. The results of the F test analysis show that there is a simultaneous or joint and significant effect of the variables of exports, imports and foreign debt on the variable of Indonesia's foreign exchange reserves in 2011-2021.

Keywords: exports; imports; foreign debt; foreign exchange reserves.

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INTRODUCTION

Foreign exchange reserves are part of national savings so that the growth and size of foreign exchange reserves is a signal for global financial markets regarding the credibility of a country's monetary policy and creditworthiness. In addition, foreign exchange reserves are an important indicator to see the extent to which a country conducts foreign trade. The size of the accumulation of a country's foreign exchange reserves is usually determined by trading activities (exports and imports) and the country's capital flows (Gandhi, 2006).

Foreign exchange reserves have an important role in foreign trade which can support the country's economy, according to Fitria, Soelistyo, dan Sulilowati (2021), Foreign exchange reserves themselves are used to maintain the stability of the country when there are unexpected external pressures as well as domestic pressures that have an impact on The function of macroeconomic resilience for a country is as a measure of the wealth owned by the country itself, having sufficient foreign exchange reserves is very important whose function is to encourage international trade activities then the function is to maintain the resilience of the value of the currency when there are unexpected external pressures and functions as a type of wealth. Meanwhile, according to Arize dan Malindretos (2012), foreign exchange reserves are generally seen as an indicator of the strength of an economy, especially its export industry. From a policy perspective, foreign exchange reserves influence trade policy.

There are several factors that affect foreign exchange reserves, namely exports, imports and foreign debt which can increase the amount of Indonesia's foreign exchange reserves. Export is an important activity in international trade where export is the activity of selling goods abroad. According to Isramaulina dan Ismaulina (2021), the higher the export level of a country, the more foreign exchange reserves that country earns. Because exports are a source of state revenue. Therefore, the level of exports greatly affects the security of a country's foreign exchange.

The relationship between exports and foreign exchange reserves is that in carrying out export activities, a country will obtain an amount of money in foreign currency or commonly referred to as foreign exchange, which is also one of the sources of state income (Agustina dan Reny 2014). In research conducted by (Arifin dan Juniawaty, 2022; Maranata dkk, 2021; Andriyani dkk 2020) exports have a positive and significant effect on foreign exchange reserves. So that when exports increase, foreign exchange reserves will also

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increase. In addition, simultaneously, exports and imports have a significant effect on foreign exchange reserves. So that if the level of exports decreases, it will be followed by a decrease in foreign exchange reserves.

In research conducted by (Benny 2013), stated that if exports increase, the amount of foreign exchange reserves owned will also increase so that import supplies in the following months will be fulfilled and will increase the country's ability to carry out economic transactions. Related to the effect of exports, imports also have an influence on foreign exchange reserves. Import is trade by entering goods from abroad into Indonesian territory. Imports have the opposite characteristics of exports. If exports can be said to be an "injection" factor, then imports are actually a "leakage" in national income. Based on the estimation results, this is in accordance with the theory which states that the higher the value of imports, the lower the supply of foreign exchange reserves.

Import is the process of illegally transporting goods or commodities from one country to another. The import process is generally an activity of bringing goods or commodities from other countries into the country (Benny 2013). According to Agustina dan Reny (2014), the relationship between imports and foreign exchange reserves is that imports are determined by the ability or ability to produce goods that compete with foreign goods. In addition, a company that imports will require a larger amount of foreign exchange to pay the transaction. So that the availability of foreign exchange will play an important role in import activities.

In research conducted by (Jalunggono, Cahyani, dan Juliprijanto 2020), with a high import value, the tax revenue for importing luxury goods is also high so that it will increase foreign exchange reserves, but this will be able to cause the value of the rupiah to depreciate further, so the government implements a policy by increasing taxes on imports of luxury goods in order to limit these activities. Whereas in research conducted by (Arifin dan Juniawaty, 2022; Rahmawati dan Suriani, 2022), imports have a negative effect on foreign exchange reserves, this is of course in line with the theory and opinion of experts that if imports dominate there will be a trade deficit which will have a negative impact to the economy as experienced by Indonesia in 2018 which experienced a trade deficit and experienced a decline in foreign exchange.

The definition of foreign debt is no different from foreign loans. According to Lubis

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dan Riva (2016), From a material aspect, foreign debt is an inflow of capital from outside to within the country which can increase existing capital in the country. The formal aspect interprets foreign debt as receipts or gifts that can be used to increase investment to support economic growth. So that based on the aspect of its function, foreign loans are an alternative source of financing needed in development. According to Didu, (2017, Foreign Debt is a consequence of costs that must be paid as a result of unbalanced economic management, plus an economic recovery process that is not comprehensive and consistent.

Foreign Debt has a major role in the value of foreign exchange reserves, which will add to the total foreign exchange reserves. From the results of research conducted by (Sayoga dan Tan, 2017; Rahim, Armawaddin, dan Ahmad, 2019) explains that foreign debt and export values have a positive and significant effect on Indonesia's foreign exchange reserves. Foreign debt can be used as a factor that can be used to increase the country's foreign exchange reserves. According to Andriyani dkk (2020), shows that foreign debt and exports simultaneously affect fluctuations in foreign exchange reserves in Indonesia. Partially, foreign debt has a significant and positive effect on foreign exchange reserves. In the research conducted, it was explained that exports had a significant and positive effect on foreign exchange reserves.

Table 1. Development of Foreign Exchange Reserves, Exports, Imports and Foreign Debt in 2011 - 2021.

Year	Foreign exchange reserves (Million US$)	Export (Million US$)	Import (Million US$)	Foreign Debt (Million US$)
2011	110.123	203.496	177.435	225.375
2012	112.781	190.020	191.691	252.364
2013	99.387	128.551	186.628	266.109
2014	111.862	178.178	178.178	293.328
2015	105.931	150.336	142.694	310.730
2016	116.362	145.186	135.652	316.407
2017	130.196	168.828	156.985	352.469
2018	120.654	180.012	188.711	375.430
2019	129.183	167.683	170.727	404.330
2020	135.897	163.191	141.568	410.810
2021	144.905	196.190	196.190	415.065

Source : *Badan Pusat Statistik, dan Lokadata*

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The table above explains the development of foreign exchange reserves, exports and imports for 2011-2021, which have fluctuated, while the Foreign Debt data continues to increase every year. The increase and decrease in the amount of foreign exchange reserves from year to year is due to government spending in the context of paying off foreign debt, this can endanger economic stability in Indonesia if there is a drastic and continuous decline so that the management of foreign exchange reserves is very important. This research was conducted to analyze how much influence the variables of exports, imports and foreign debt have on the value of Indonesia's foreign exchange reserves, where can these variables have a significant positive or negative effect on Indonesia's foreign exchange reserves in 2011-2021, so that they can be a reflection of economic growth in Indonesia in the management of Indonesia's foreign exchange reserves. This research was also conducted to prove from previous research whether the variables of exports, imports and foreign debt had a significant effect on Indonesia's foreign exchange reserves in 2011-2021, so that it could be a comparison of previous research and future research.

RESEARCH METHOD

Data Types and Sources

The type of data used in this study is secondary data which consists of: (a). Indonesian Exports in 2011-2021; (b). Indonesian Imports 2011-2021; (c). Indonesia's Foreign Debt for 2011-2021 and (d). Indonesia's Foreign Exchange Reserves for 2011-2021. The data sources were obtained from related agencies, especially at the Indonesian BPS (Badan Pusat Statistik) and Lokadata.

Research Variable

In this research, the dependent variable is Foreign Exchange Reserves (Y). While the independent variables are Exports (X1), Imports (X2) and Foreign Debt (X3).

Data analysis technique

Classic assumption test

This test includes the normality test, multicollinearity test, heteroscedasticity test and autocorrelation test.

Multiple Regression Analysis

This study used multiple linear regression analysis techniques using the OLS (Ordinary Least Square) method which used E-views analysis tools to analyze the data.

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Multiple linear regression analysis in this study was used to determine the effect of the independent variables which in this study were explained through the variables of exports, imports and exchange rates on the dependent variable, namely Indonesia's foreign exchange reserves. From this explanation, the model can be formulated as follows:

Y = $\alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$

Information :

Y : Foreign exchange reserves

α : Constant

X_1 : Export

X_2 : Import

X_3 : Foreign debt

$\beta_1 \beta_2 \beta_3$: regression coefficient

e : Error

Statistic test

Statistically, the accuracy of the regression function in estimating the actual value can be measured from the coefficient of determination (R^2), the value of the F statistic and the value of the t statistic.

Result and Discussion

Normality test

Table 2. Normality Test Results

Normality test	
Jarque-Bera	0.971204
Probability	0.615327

Source : E-Views 9 (Processed Data)

From the calculation results in table 2 above using E-views 9, the results obtained from the Normality Test can be seen that the Jarque-Bera probability value is 0.615327 which is greater than the significance level used (α = 5% or 0.05) means it can it was concluded that the regression model data in this study were normally distributed.

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Multicollinearity Test

Table 3. Milticolinerity Test Results

Milticolinerity Test	
Variable	Centered VIF
Export (X1)	1.359900
Import (X2)	1.393856
Foreign debt (X3)	1.033135

Source : E-Views 9 (Processed Data)

From table 3 above it can be seen that in this research model there is no multicollinearity problem because the Variance Inflation Factor (VIF) value of each independent variable is less than 10.

Heteroscedasticity Test

Table 4. Heteroscedasticity Test Results

Heteroscedasticity Test	
Probabilitas Chi-Square(3)	0.5186

Source : E-Views 9 (Processed Data)

From table 4 above it can be seen that the results of the heteroscedasticity test with the Glejser test show that the Chi-Square probability value is 0.5186 which is greater than the significance level used (α = 5% or 0.05), meaning that it can be concluded that this regression model There is no heteroscedasticity problem.

Autocorrelation Test

Table 5. Autocorrelation Test Results

Autocorrelation Test	
Durbin-Watson stat	1.924362
Runs Test	R1 : 6.000000 R2 : 0.770588

Source : E-Views 9 (Processed Data)

From table 5 above it can be seen that the Durbin-Watson value is 1.924362 where to be able to find out if there are symptoms of autocorrelation you have to do a runs test, after testing with a runs test the R2 result is 0.770588 where the value is greater than the significance level used (α = 5% or 0.05), meaning that it can be concluded that this

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regression model has no symptoms of autocorrelation.

Multiple Linear Regression Equation Analysis

Based on calculations using E-views 9, the following equation is obtained:

$$Y = 28891.374382 + 0.267957640434*X1 + -0.0681005828529*X2 + 0.172551719678*X3 + e$$

From the estimation results, it can be interpreted as follows:

1. The value of the constant of 2889137 means that with the influence of the independent variables, namely exports, imports and foreign debt which is considered zero, the value of the dependent variable, namely foreign exchange reserves, is worth US$ 28,891.37 million.
2. The regression coefficient of the export variable on foreign exchange reserves is positive with a coefficient value of 0.267957 meaning that if the average variable value of total exports increases by US$ 1 million, the average foreign exchange reserves will increase by US$ 0.267957 million. Assuming the export variable does not change or is constant.
3. The regression coefficient of the import variable on foreign exchange reserves is negative with a coefficient value of -0.068100 meaning that if the average variable value of imports increases by US$ 1 million, the average foreign exchange reserves will decrease by US$ 0.068100 million. Assuming the imported variable does not change or is constant.
4. The regression coefficient of the foreign debt variable on foreign exchange reserves is positive with a coefficient value of 0.172551 meaning that if the average variable value of the amount of foreign debt increases by US$ 1 million, the average foreign exchange reserves will increase by US$ 0. 172551 million. Assuming that the foreign debt variable does not change or is constant.

Statistic test

Deretmination Coefficient Test (*R*2)

Table 6. Deretmination Coefficient Results (R2)

Determination Coefficient Test (R^2)	
R-square	0.87938
Adjusted R-square	0.827686

Source : E-Views 9 (Processed Data)

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From table 6 above, the regression estimation results are obtained, namely the Adjusted R^2 value of 0.827686, which means that foreign exchange reserves in Indonesia can be explained by variations in the variables of exports, imports and foreign debt of 82.76% and the remaining 17.24% is explained by variables in outside of these models.

Individual Parameter Significant Test (t test)

Table 7. Significant Test Results for Individual Parameters (t test)

Individual Parameter Significant Test (t test)			
Variable	t-Statistic	Probability	t-table
Export (X1)	2.871858	0.0239	1.684
Import (X2)	-0.696621	0.5085	
Foreign debt (X3)	6.259221	0.0004	

Source : E-Views 9 (Processed Data)

Based on the results of the t test in table 7 above, it can be described:

1. Effect of Exports on Foreign Exchange Reserves. From the results of the partial test, the t-count value is 2.871858 so that the t-count > t-table results are 2.871858 > 1.684 with a probability value of 0.0239 < the significance level used is 0.05, so it can be concluded that Ho is rejected and Ha is accepted or it can be interpreted that the export variable has a positive and significant influence on the foreign exchange reserve variable.
2. Effect of imports on Foreign Exchange Reserves. From the results of the partial test, the t-count value is -0.696621 so that the t-count <t-table results are -0.696621 <1.684 with a probability value of 0.5085> the significance level used is 0.05, it can be concluded that Ho is accepted and Ha rejected or it can be interpreted that the import variable has no effect on the import variable on foreign exchange reserves.
3. Effect of foreign debt on Foreign Exchange Reserves. From the results of the partial test, the t-count value is 6.259221 so that the t-count > t-table results are 6.259221 > 1.684 with a probability value of 0.0004 < the significance level used is 0.05, so it can be concluded that Ho is rejected and Ha accepted or it can be interpreted that the foreign debt variable has a positive and significant influence on the foreign exchange reserve variable.

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Simultaneous Significance Test (F Test)

Table 8. Simultaneous Significant Test Results (Test F)

Simultaneous Significant Test (Uji F)	
R-square	0.879380
Adj R-square	0.827686
F-statistic	17.01121
Prob(F-statistic)	0.001351
F-table	4.35

Source : E-Views 9 (Processed Data)

From table 8, the F-count value is 17.01121 so that the F-count > F-table is 17.01121 > 4.35 with a probability value of 0.001351 < the significance level used is 0.05, so it can be concluded that Ho is rejected and Ha is accepted or it can be interpreted that the independent variables namely exports, imports and foreign debt jointly affect foreign exchange reserves.

The Effect of Exports on Indonesia's Foreign Exchange Reserves 2011 - 2021

Based on the results of the research that has been done, it shows that the export variable has a positive and significant influence on the variable of Indonesia's foreign exchange reserves. This can happen because by exporting a country, that country will get a certain amount of money as payments in foreign exchange which can increase the amount of foreign exchange reserves. One of them can be shown through the export value in 2021 of US$ 196,190 million so as to increase the amount of foreign exchange reserves by 9% from the previous year, which was US$ 135,897 million to US$ 144,905 million. The results of this study are in line with previous research conducted by Jalunggono, Cahyani, dan Juliprianto (2020) which showed that exports had a positive and significant effect on foreign exchange reserves.

The Effect of Imports on Indonesia's Foreign Exchange Reserves for 2011-2021

Based on the partial test results, it can be concluded that the import variable has no effect on foreign exchange reserves. The results of this study are in line with previous research conducted by Agustina & Reny, (2014) which stated that imports have no effect on foreign exchange reserves. Import is trading by bringing goods from abroad into the country, in importing, the importing country will finance the import using foreign exchange

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reserves, which if the amount of imports increases, the value of foreign exchange reserves will decrease.

The Influence of Foreign Debt on Indonesia's Foreign Exchange Reserves for 2011-2021

Based on the partial test results, it can be concluded that the foreign debt variable has a positive and significant influence on the foreign exchange reserve variable. The results of this study are in line with previous research conducted by Andriyani et al (2020) which stated that foreign debt has a significant and positive effect on the foreign exchange reserve variable. Foreign debt is no different from foreign loans, in which these loans will indirectly increase the amount of foreign exchange reserves, effective and efficient management and utilization of foreign debt can maintain and increase the amount of Indonesia's foreign exchange reserves.

CONCLUSION

Independent Variable (X1), namely exports have a positive and significant influence on the dependent variable of Indonesia's foreign exchange reserves in 2011-2021, Independent Variable (X2), namely imports are said to have no effect on the dependent variable of Indonesia's foreign exchange reserves in 2011-2021, Independent variable (X3), namely debt foreign countries have a positive and significant influence on the dependent variable of Indonesia's foreign exchange reserves in 2011-2021. The independent variables namely exports, imports and foreign debt simultaneously or simultaneously have a significant effect on the dependent variable, namely Indonesia's foreign exchange reserves in 2011-2021.

Based on the results of this study, the Indonesian government should further increase the number of exports, by providing convenience for exporters such as providing easy licensing so that the export process of goods will be easy to carry out, then providing facilities to export producers in the form of technological assistance or by providing product innovation training, by Thus, Indonesia's foreign exchange reserves will continue to increase.

In order to keep the value of Indonesia's foreign exchange reserves safe and stable, the Indonesian government must reduce the amount of imports by providing quotas for each product or brand of goods so that there will be no excess imports, not importing commodities that have been produced domestically. Then, Indonesia must further develop

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domestic products by increasing national productivity so that it is able to meet domestic needs.

Foreign debt can increase the amount of Indonesia's foreign exchange reserves if managed properly and correctly, but uncontrolled foreign debt will be detrimental to Indonesia's foreign exchange reserves, as a result foreign debt will become a burden in the long term so that large amounts of foreign exchange are needed to the payment. Therefore, the Indonesian government must control foreign debt turnover so that Indonesia's foreign exchange remains safe and stable.

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