MediaTrend 16 (1) 2021 p. 142-152
Media Trend
Berkala Kajian Ekonomi dan Studi Pembangunan
http://journal.trunojoyo.ac.id/mediatrend

Determinant Export of Indonesia Manufacturing Industry in the Long Term

Muhammad Devis Susandika[1*], Rosanto D. H.[2]

[1,2] Airlangga University

Article Information

History of article:
Received February 2021
Approved February 2021
Published March 2021

A B S T R A C T

This study analyze determinant factors exports of Indonesian manufacturing industry such as real FDI inflows, real interest rates, and foreign income, as well as the real exchange rate IDR / USD in the period from the first quarter 2005 - Second Quarter 2019. This study uses time series data in quarterly types through VECM (Vector Error Correction Model) methods to determine the effect in a long-term. This study shows that the determinant factors of exports Indonesian manufacturing industry in the long term are real FDI inflows, foreign income and domestic domestic real interest rates. While real exchange rate IDR / USD does not significantly affect to exports of Indonesian manufacturing industry.

Keywords: *Manufacturing Exports, FDI, Interest Rate, Foreign Income, Exchange Rate.*
***JEL Classification Code*:** F14, L60, N6

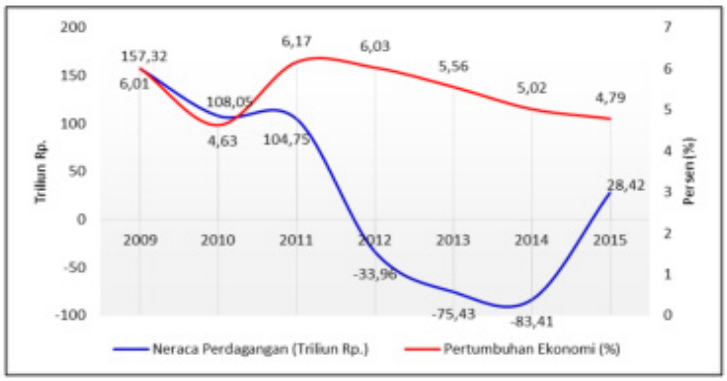
Author correspondence:
E-mail: Devis.s3unair@gmail.com

DOI: https://doi.org/10.21107/mediatrend.v16i1.9834

INTRODUCTION

Economic problems in many countries stem from scarcity. Therefore, to be able to meet the needs of each country, a country conducts trade activities between countries so that there is an exchange of needs to be able to complement each other (Khalighi & Fadaei, 2017).

The scarcity problem that arises in a country encourages that country to conduct international trade. The objectives of international trade for the people or residents of a country include (Mayer & Steingress, 2020): (1) obtaining goods that cannot be produced domestically, (2) obtaining profits from specialization, (3) expanding market share abroad, (4) increasing national income every time countries that export and import, and (5) obtain modern technology that is developing abroad. The importance of international trade in supporting a country's needs even has an impact on the country's economic growth (Khalighi & Fadaei, 2017). Even international trade can also increase economic growth and increase people's per capita income.



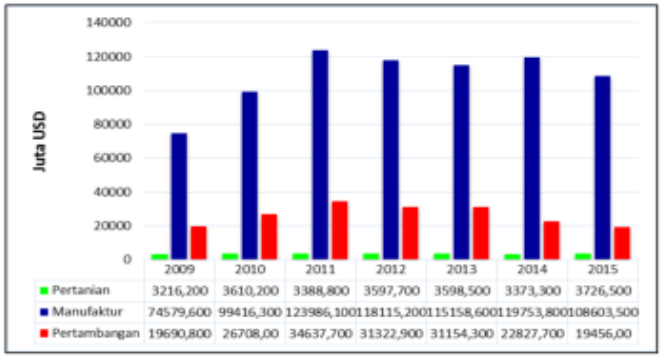
Source : BPS 2016

Figure 1
Trade Balance and Economic Growth 2009-2015

Figure 1 provides an overview of the trade balance and the rate of economic growth in Indonesia. The goods and services trade balance surplus in 2009 to 2011 was able to make a positive contribution to economic growth. However, starting in 2012, Indonesia's goods and services trade balance began to enter an era of trade balance deficits. The deficit in Indonesia's goods and services trade balance is caused by the value of imports that is greater than the value of exports of goods and services. The deficit in Indonesia's trade balance is indicated by a decline in world demand for Indonesian commodities which also has an impact on falling prices for Indonesian export commodities. It should be noted that the competitiveness of Indonesia's export commodities is highly dependent on world commodity prices. In other words, the value of Indonesia's exports will increase when commodity prices increase.

Exports are goods and services that are produced in the country and sold abroad. Export activities are determined by the relative price of domestic goods in foreign markets, the ability of domestic goods to compete in world markets, and the taste of residents in other countries for goods produced by a country (Paudel & Burke, 2015). In addition, exports are one of the macroeconomic variables that have injection characteristics in a country's economy, meaning that if a country's exports increase, the country's economy will increase through the trade balance. Thus, it can be said that exports are a driving

force for the acceleration of economic growth, and are an important part that must be considered for the achievement of a country's sustainable economic development (Nouira et al., 2011).



Source : BPS 2016

Figure 2
Indonesian Export Value by Commodities, 2009-2015

Based on Figure 2, it is known that the commodity of the manufacturing industry is Indonesia's largest export commodity. Besides the export value of manufactured commodities is higher than agriculture and mining due to high added value, but on the other hand the goverment also continues to invite real sector players, particularly business players and manufacturing industry exporters, to work together to take strategic breakthrough steps in the short term to increase exports. products of the Indonesian manufacturing industry. The added value possessed by manufacturing industrial commodity exports is expected to boost Indonesia's trade balance, so that the progress of Indonesia's manufacturing industry commodity exports will be profitable for Indonesia, and the export value of manufactured industrial commodities can also have a big role in foreign exchange earnings through their contribution to Indonesia's total exports.

The approach used in this research is of course related to the theory of the goods market and money market. Mundell Fleming's model, which is able to explain the flow of international capital and goods in an open economy, is used to analyze research problems. An open economy can spend more than its production by owing abroad, or it can spend less than its production and provide loans to other countries. The open economy output is partly sold domestically and partly exported abroad.

Foreign Direct Investment is one of the many factors driving the export of manufacturing industrial commodities. FDI from various countries will strengthen capital-intensive industries and increase exports of manufactured industrial commodities (Sun, 2012). FDI has a two-way impact on the export of a host country. The first direction, FDI will increase exports from the host country to the source country. On the other hand, FDI will reduce exports from the host country to the source country when they determine the full process of production in the host country. As a result, there is no need to re-import semi-finished products to the host country. The second direction, FDI increases exports from the host country to other countries when the source country invests in a production-based host country (Hayakawa et al., 2020). The conclusion is that FDI can have a positive and negative relationship.

Monetary variables such as credit

interest rates also affect exports of manufactured commodities. When there is an increase in credit interest rates, investors in the manufacturing sector are reluctant to borrow money to increase production, especially the purchase of raw materials, so that the export productivity of manufacturing industrial commodities has decreased (Sumantria & Latifah, 2019). The credit interest rate is used as a variable that affects the export of manufacturing industrial commodities because the manufacturing sector is said to be "the manufacturing sector is one lending sector", where most of the manufacturing sector capital comes from bank loans, so it is more appropriate to use the lending rate.

Export activities originate from domestic production that are sold or used by residents of abroad. Then export is an injection variable for income as well as investment. The export activities of a country are influenced by several factors, one of which is the exchange rate between countries. Changes in the exchange rate to changes in exports, in this case the real exchange rate, are positive, meaning that real depreciation makes domestic products relatively cheaper, thereby stimulating exports.

Foreign national income is an important indicator in boosting export performance. Therefore, foreign national incomealso affects the export of Indonesia's manufactured industrial commodities. The relationship between foreign national income and the export of manufactured industrial commodities is unidirectional. An increase in foreign income causes an increase in exports, while the depreciation of the exchange rate will cause an increase in exports. The condition is different if a decrease in foreign income will cause a decrease in exports.

The economic transformation is an important policy practice of economic development in China. In the context of "deglobalization", it is critically important to better understand the impacts of increasing trade costs on China's economic transformation from the perspective of firms'exports. In this study, (Ho, 2012) measure the trade costs of specific manufacturing sectors and provinces. Twostage method and the data from China's manufacturing firms to investigate the impacts of trade costs on heterogeneous firms' exports. Based on these results, (Ho, 2012 further explore the impacts of trade costs on China's economic transformation and discuss policy advisories. Our results indicate that the increase in trade costs have adverse impacts on China's economic transformation. Specifically, increasing trade costs hinder firms' export behaviors and export scales. However, these impacts are heterogeneous on different types of firms, which refersto the ownership reforms, manufacturing sector upgrades and coordinated regional development. In particular, increasing trade costs do not affect coordinated regional development in China, but they are not conducive to ownership reforms and manufacturing sector upgrades. Altogether, our findings provide the first evidence on the impacts of trade costs on China's economic transformation from the perspective of firms' exports, and also shed light on policy implications for promoting firms' exports and economic transformation in the "deglobalization" period.

To compete effectively on a global scale, companies must increase capabilities that lead them to greater performance in developing new products. Panizzon et al., (2020) research validated a model about the influence of the main determinants of the New-Product Development Ability (NPDA) for international and turbulent markets. Involving a cross-sectional survey of 167 manufacturing export companies, the results showed that NPDA is explained by 79 % from these

determinants. The model validation provided support to an emerging framework, sustaining on how these five main determinants are key success factors for NPDA. Consequences of these foundations to research agenda and companies' best practices are discussed.

Sheridan, (2014) research explain about why do many developing countries still rely on primary goods as their main source of export income when evidence suggests they could earn higher returns by exporting manufactured goods? I use data for a wide cross-section of countries over the period 1970-2009 and find that although increasing manufacturing exports is important for sustained economic growth, this relationship only holds once a threshold level of development is reached. Specifically, I use an endogenous sample-splitting technique, known as regression tree analysis, to identify possible economic development thresholds in the relationship between the level of manufacturing exports and GDP per capita growth. The results imply that a country needs to achieve a minimum level of human capital before it is beneficial to transition from a reliance on primary exports to manufacturing exports.

Based on the background of this research, this study aims to analyze and test the factors that determine the export of manufacturing industrial commodities. This research is expected to contribute academically. The contribution of this study compared to previous studies is that this study uses the Vector Error Correction Model (VECM) method which uses data in the form of a time series with a quarterly type, and the sample used is the country of Indonesia. To answer this problem, the formulation of this research is whether foreign direct investment flows, real interest rates, and foreign income, as well as the real exchange rate IDR / USD affect the export of commodities of the Indonesian manufacturing industry.

METHODOLOGY

The influence between FDI inflows, real interest rates, foreign income, and the real IDR / USD exchange rate on the export of Indonesian manufactured industrial commodities, this study uses an estimated VECM calculation approach in answering the problem formulation until finally conclusions will be drawn. The use of VECM analysis tools because this approach can provide long-term structural relationships plus information about adjustments that provide better insights into the economic process (Ho, 2012). Data processing and the estimation of the analysis model in this study used Microsoft Excel and Eviews 8 software.

This study analyzes secondary data in the form of time series with quarterly data observations. The researcher chose the observation period starting from the first quarter of 2005 until the first quarter. Quarter II 2016 with the observation area, namely Indonesia. The choice of the observation period was due to the fluctuation of Indonesia's manufactured exports due to various global economic problems. These various global economic problems have an impact on world goods markets and financial markets, which of course affect fluctuations in the export of Indonesian manufacturing industrial commodities.

The manufacturing industry commodity export data used in this study were obtained from the value of manufactured industrial commodities that are produced domestically and sold abroad which are expressed in units of billions of rupiah. Quarterly data on exports of manufacturing industrial commodities from Quarter I 2005 up to Quarter I 2005. The second quarter of 2016 uses Indonesian Economic and Financial Statistics (SEKI) data published by Bank Indonesia (BI). The variable export of these manufacturing industrial commodities is transformed into a natural

logarithm.

The FDI data used in this study were the FDI data in the first quarter of 2005 s.d. Quarter II 2016 originating from the SEKI published by BI. The FDI data referred to in this study applies to the activities of a number of funds channeled by foreign investors to Indonesia, in order to develop their business and cooperate with Indonesia to run them. The quarterly inflow of FDI data is transformed into a natural logarithm. The real interest rate is the difference between the nominal interest rate and the inflation rate, to obtain real interest rate data, the nominal interest rate data and the quarterly inflation rate in Quarter I 2005 to Quarter II 2016 are obtained from BI data. The nominal interest rate is the loan interest rate. The real interest rate unit is in the form of percent.

The foreign real GDP referred to in this study is the real GDP of the United States (US). The choice of this country is given that the US is the main export destination country for Indonesian commodities, particularly the export of manufacturing industrial commodities. US real GDP originating from the Federal Reserve is in billions of USD, so it needs to be converted into rupiah first. This foreign real GDP data is then transformed into natural logarithms.

EXRIDR / US $ is the real exchange rate between Indonesia and the US, PIND is Indonesia's domestic price, PUSA is the US foreign price, and NEXRIDR / US is the nominal exchange rate between Indonesia and the US. To obtain real exchange rate data in this study, the PIND, PUSA, and NEXRIDR / US data were collected from BI data. The IDR / USD real exchange rate data is transformed into a natural logarithm.

Uses the VECM method of the dependent variable, namely exports of manufacturing industrial commodities with FDI independent variables, real interest rates, and real GDP. VECM is an restricted form of VAR. Restriction is given because of the existence of non-stationary forms of data but the data has cointegration. VECM is used in econometric analysis which is used to determine the long-term relationship due to constant shocks. The selection of the estimation model for this research includes:

1. The stationarity test is the first step in the VECM method. Stationarity test is one of the important concepts in analysis using time series data (Prasetyo, 2018). Time series data is said to be stationary if the mean, variance, and covariance at each lag is the same at all times. If these assumptions are not fulfilled, the data is said to be non-stationary (Li et al., 2015).
2. Determination of the Optimum Lag, this test is an important stage because of the accuracy of the information that will be generated by the estimation of the VECM model. Determination of the optimal lag length in this study using the selection of information criteria with the Akaike Information Criterion (AIC) method, Schwarz Information Criterion (SIC), Final Prediction Error (FPE), and Hannan Quinn (HQ) (Prasetyo, 2020).
3. The cointegration test (Johansen's Cointegration Test), aims to see the possibility of spurious data being stationary on long-term equilibrium and see whether the linear combination of variables in the model used has cointegration or not. This method has two statistical assessments, namely the trace test and the maximum eigenvalue test (Cheung & Sengupta, 2013). If the value of the two tests is greater than the critical value of 5%, then the data used in the model is proven to have cointegration.
4. Statistical test, the statistical test used in this research is the t-statistical test and the F test. The t-statistic test is used to see the effect of the independent variable on the dependent variable partially.
5. Impulse Response Function, to

determine the effect of shocks on the economy, the impulse response function method is used. The impulse response function describes the future k-period expectation of the prediction error of a variable due to the innovation of another variable. So that it can be seen the length of the effect of one variable's shocks on other variables until the effect is lost or returns to the equilibrium point.

6. Variance Decompositions, a tool in the VAR / VECM model that will separate the variation from a number of variables estimated to be components of shocks or become the innovation variable, assuming that the innovation variables are not correlated Variance decomposition provides information about the proportion of the movement of the effect of shocks on one variable to the shocks of other variables in this period and in future periods.

RESULT AND DISCUSSION

The analysis of the VECM model in this study is divided into five stages. The first stage is the stationarity test. Based on the results of stationarity shown in Table 1 at the level level, there are 3 non-stationary variables, namely exports of manufacturing industrial commodities (lnemnfc), US GDP (lnyusa), and the real exchange rate (lnrex). It is said that it is not stationary because the ADF probability at the level is more than 5%, so a first difference is made. The results of the stationarity test at the first difference level are all stationary variables. These results indicate that all variables are not affected by unit root problems

Table 1
Stationarity Test for Level-Intercept and First Difference-Intercept

Variabel	Prob. ADF Tingkat Level	Keterangan	Prob. ADF Tingkat *First Difference*	Keterangan
lnemnfc	0.2537	Not Stationary	0.0000**	Stationary
lnFDI	0.0082	Stationary	0.0000**	Stationary
lnrex	0.8957	Not Stationary	0.0000**	Stationary
lnyusa	0.9610	Not Stationary	0.0000**	Stationary
ri	0.0003	Stationary	0.0000**	Stationary

Where lnemnfc = exports of the manufacturing industry, lnFDI = foreign investment, ri = real interest rate, yusa = United States GDP, rex = real exchange rate in rupiah / USD, ln = natural logarithm, ** = Stationary with α = 5%

The second stage of this research is determining the optimal lag using the selection of information criteria using the AIC, SIC, FPE, and HQ methods. The testing process in this study uses Eviews 8 as in Table 2.

Table 2
Criteria Lag Optimal

Lag	LogL	LR	FPE	AIC	SC	HQ
1	448.8692	NA	4.17e-14	-16.62232	-15.67535*	-16.26045*
2	469.8559	33.74340	4.99e-14	-16.46494	-14.57099	-15.74121
3	493.1508	32.88693	5.69e-14	-16.39807	-13.55715	-15.31247
4	527.6273	41.91256*	4.48e-14	-16.76970	-12.98180	-15.32223
5	558.4077	31.38394	4.53e-14	-16.99638	-12.26151	-15.18705
6	601.6948	35.64824	3.32e-14	-17.71352	-12.03168	-15.54232
7	648.1323	29.13725	2.83e-14*	-18.55421*	-11.92540	-16.02114

where * lag orders selected

Determination of the most optimal lag used is by looking at the highest LR value and the lowest FPE, AIC, SC and HQ values. Based on Table 2, the optimal lag recommended by AIC and FPE is lag 7. The selection of lag 7 is based on the dominant asterisk in lag 7 with the lowest FPE and AIC values (the most dominant asterisk). The third stage in this research is to conduct a cointegration test using the ohansen Cointegration test method. This method has two statistical assessments, namely the trace test and maximum eigenvalue test with the results of the cointegration test in Table 3.

Table 3
Trace Statistic and Max-Eigen Cointegration Test

Hypothesized No. of CE(s)	**Prob** *Trace Statistic*	**Prob** *Max-Eigen*
None*	0,0000	0,0000
At Most 1*	0,0000	0,0000
At Most 2*	0,0009	0,0001
At Most 3*	0,0007	0,0003
At Most 4	0,8029	0,8029

where * lag orders selected

Based on Table 3, the results of the Trace Statistic and Max-Eigen cointegration test show that based on the probability value of the maximum eigenvalue starting from none to at most 3 there are asterisks and less than 5%, so it can be concluded that FDI inflows, real interest rates, and foreign income, as well as the real IDR/USD exchange rate has a long-term relationship with the export of Indonesia's manufactured industrial commodities. After conducting the cointegration test, the fourth stage in this study is to estimate the long term with the dependent variable of manufacturing industrial commodity exports.

Table 4
Long Term Estimation Results

lnFDI(-1)	t-statistic	-5,38	t-table	2.00575	Significant
lnrex(-1)	t-statistic	1,00	t-table	2.00575	Not Significant
lnyusa(-1)	t-statistic	-3,93	t-table	2.00575	Significant
ri(-1)	t-statistic	3,86	t-table	2.00575	Significant

The results of the t significance test in Table 4 show that the FDI variables, United States GDP, and real interest rates have a significant effect on the export of Indonesia's manufactured manufacturing industry commodities, while the rupiah / USD real exchange rate variable does not have a significant effect on the export of Indonesian manufactured industrial commodities. This result is shown by comparing the t-statistic value of each variable with the t-table value (df = 53).

Long-term test results show that FDI has a significant effect on the export of manufactured industrial commodities. In the long run, the lnFDIt-1 variable has a coefficient of 0.23. This means, if lnFDI (-1) increases by 1%, then the export of manufactured industrial commodities will increase by 0.23%, the assumption of ceteris paribus.

The declining trade performance in Indonesia, as evidenced by the decreasing trade balance surplus (deficit) from year to year, should be watched out by the government. This shows that not always profits can be obtained from trading activities, so the government must start

thinking about other alternatives to cover the existing shortcomings. One of the efforts that the government can do is to attract foreign investors to invest in Indonesia in the form of FDI.

Basically, FDI flows into Indonesia are expected to be able to increase productivity, which in turn will have an impact on increasing exports of manufactured industrial commodities. In other words, in order to improve the performance of international trade, investment is absolutely necessary. Improving the performance of international trade, the industrial sector and Indonesia's infrastructure development will ultimately increase Indonesia's competitiveness, which is an attraction for foreign investors to invest in Indonesia. The industrial sector which is open to foreign investment can also be a special attraction for investors. The flow of FDI, which was expected to increase the export of manufacturing industrial commodities, has not yet been fully realized. This can be demonstrated by the negative impact of FDI on the export of manufactured industrial commodities due to the orientation of FDI entering Indonesia which tends to seek markets.

The long-term test results show that the real exchange rate does not have a significant effect on the export of manufactured industrial commodities. The lnrex coefficient (-1) is -0.14. This means that if lnrex (-1) increases by 1%, then the export of manufacturing industrial commodities will decrease by 0.14%, the assumption of ceteris paribus. Meanwhile, the results of the significance test show that the real IDR / USD exchange rate does not have a significant effect on the export performance of Indonesia's manufactured industrial commodities. These results indicate that the real IDR / USD exchange rate is not a determinant of the export performance of manufactured industrial commodities. The results of this study are inconsistent with the Marshall-Lerner theory.

The Marshall-Lerner condition is a condition of real exchange rate depreciation which causes an increase in export trade. The occurrence of this phenomenon is caused by several things (Thorbecke, 2011). First, the slow response to demand from export destination countries when the real exchange rate depreciates. Second, there are indications that the real exchange rate depreciation occurred during the global economic crisis in 2008 so that demand did not increase even though the real exchange rate depreciated (Hayakawa et al., 2020). Third, the export products of the Indonesian manufacturing industry are less competitive so that when the real IDR / USD exchange rate depreciates, what happens to the real exchange rates of other currencies, goods from Indonesia are not an option for consumption.

Long-term test results show that US GDP has a significant effect on the export of manufactured industrial commodities. The day-to-day coefficient is 0.50. This means that if the US GDP increases by 1%, then the export of manufactured industrial commodities will increase by 0.50%, the assumption of ceteris paribus. The result of the t significance test shows that the US GDP has a significant effect, so that the US GDP plays an important role in influencing the export performance of Indonesia's manufactured industrial commodities. US real GDP has a significant and positive impact.

Long-term test results show that real interest rates have a significant effect on the export of manufacturing industrial commodities. The ri coefficient (-1) is -2.10. This means that if the real interest rate increases by 1%, then the export of manufacturing industrial commodities will decrease by 2.10%, assuming cateris paribus. The results of the t significance test show that real interest rates have a significant effect, so that

real interest rates play an important role in influencing the export performance of Indonesia's manufactured industrial commodities. Real interest rates hav a significant effect on exports of manufacturing industrial commodities because the decline in interest rates will be responded quickly by investors in the manufacturing sector to increase their production capacity (He et al., 2020).

Interest rate is the annual interest payment of a loan in the form of a percentage of the loan obtained from the amount of interest received each year divided by the amount of the loan. Interest rate is the cost of borrowing money which is measured in dollars per year per dollar borrowed (Samuelson, 2004: 190). Interest rates are divided into two, namely nominal interest rates and real interest rates. The nominal interest rate is the interest rate paid by the bank, while the real interest rate is the interest rate that has been corrected for inflation.

CONCLUSIONS

This research shows that the determinants of the long-term determinants of Indonesia's manufacturing industrial commodities include FDI inflows, income of export destination countries as shown by US real GDP, and real interest rates. Meanwhile, the domestic IDR / USD real exchange rate factor did not significantly influence the export of Indonesia's manufactured industrial commodities.

FDI inflows and income from export destination countries (US real PDR) have a positive effect on the export of Indonesia's manufactured industrial commodities. Meanwhile, the domestic real interest rate has a negative effect, which means that an increase in interest rates causes a decrease in the export of commodities in the Indonesian manufacturing industry. Therefore, in order to increase the export capacity of Indonesia's manufacturing industry, it is hoped that the Government and the Central Bank will synergize fiscal and monetary policies to increase the export of Indonesian manufactured industrial commodities such as:

1. Maintain a conducive investment climate by maintaining domestic economic, social and political stability.
2. Provision of industrial estates that can accelerate the realization of FDI investment and support the productivity of Indonesia's manufactured commodities.
3. Improving the quality of export products for manufacturing industrial commodities by leaving old technology behind and replacing new technology through research and development.

In the long run, the real exchange rate does not have a significant effect on the export of Indonesia's manufactured industrial commodities. This shows that the products of the Indonesian manufacturing industry are less competitive than those of other countries, so that even though the real exchange rate depreciates, it does not increase the consumption of Indonesian products. It would be more effective if Bank Indonesia implemented an interest rate regulation policy in order to attract capital inflow, however this must also be supported by the Government to immediately revise government regulations that make it difficult for investors to invest in Indonesia and provide tax incentives for foreign companies investing in Indonesia

REFERENCE

Cheung, Y.-W., & Sengupta, R. (2013). Impact of exchange rate movements on exports: An analysis of Indian non-financial sector firms. *Journal of International Money and Finance*, 39, 231–245. https://doi.org/10.1016/j.jimonfin.2013.06.026

Hayakawa, K., Mukunoki, H., & Yang, C. (2020). Liberalization for services FDI and export quality: Evidence from China. *Journal of the Japanese and International Economies*, 55,

101060. https://doi.org/10.1016/j.jjie.2019.101060

He, L.-Y., Lin, X., & Zhang, Z. (2020). The impact of de-globalization on China's economic transformation: Evidence from manufacturing export. *Journal of Policy Modeling*, 42(3), 628–660. https://doi.org/10.1016/j.jpolmod.2020.02.001

Ho, L. S. (2012). Globalization, exports, and effective exchange rate indices. *Journal of International Money and Finance*, 31(5), 996–1007. https://doi.org/10.1016/j.jimonfin.2011.12.007

Khalighi, L., & Fadaei, M. S. (2017). A study on the effects of exchange rate and foreign policies on Iranians dates export. *Journal of the Saudi Society of Agricultural Sciences*, 16(2), 112–118. https://doi.org/10.1016/j.jssas.2015.03.005

Li, H., Ma, H., & Xu, Y. (2015). How do exchange rate movements affect Chinese exports? — A firm-level investigation. *Journal of International Economics*, 97(1), 148–161. https://doi.org/10.1016/j.jinteco.2015.04.006

Mayer, T., & Steingress, W. (2020). Estimating the effect of exchange rate changes on total exports. *Journal of International Money and Finance*, 106, 102184. https://doi.org/10.1016/j.jimonfin.2020.102184

Nouira, R., Plane, P., & Sekkat, K. (2011). Exchange rate undervaluation and manufactured exports: A deliberate strategy? *Journal of Comparative Economics*, 39(4), 584–601. https://doi.org/10.1016/j.jce.2011.08.002

Panizzon, M., Milan, G. S., Dorion, E. C. H., & Coallier, F. (2020). The main determinants of new product development ability for international markets: An empirical study on brazilian manufacturing export com panies. *Journal of Engineering and Technology Management*, 57, 101569. https://doi.org/10.1016/j.jengtecman.2020.101569

Paudel, R. C., & Burke, P. J. (2015). Exchange rate policy and export performance in a landlocked developing country: The case of Nepal. *Journal of Asian Economics*, 38, 55–63. https://doi.org/10.1016/j.asieco.2015.04.003

Prasetyo, A. S. (2018). Analisis Perilaku Kurs IDR/USD Berdasarkan Model Hooper-Morton (Analyze The Behavior of Exchange Rate IDR/USD Based on Hooper-Morton's Model). *Media Trend*, 13(2), 262. https://doi.org/10.21107/mediatrend.v13i2.4368

Prasetyo, A. S. (2020). Peran Ketidakpastian Kebijakan Ekonomi dan Resiko Geopolitik Amerika Serikat Terhadap Indeks Harga Saham Gabungan. *Sketsa Bisnis*, 7(1), 56–71.

Sheridan, B. J. (2014). Manufacturing exports and growth: When is a developing country ready to transition from primary exports to manufacturing exports? *Journal of Macroeconomics*, 42, 1–13. https://doi.org/10.1016/j.jmacro.2014.06.002

Sumantria, F., & Latifah, U. (2019). The Influence of Interest Rate, Money Circulation, Inflation, and CPI Against Export and Import in Indonesia 2012-2018. *Jurnal Ekonomi Pembangunan* (JEP), 17(2), 108-118

Sun, S. (2012). The role of FDI in domestic exporting: Evidence from China. *Journal of Asian Economics*, 23(4), 434–441. https://doi.org/10.1016/j.asieco.2012.03.004

Thorbecke, W. (2011). Investigating the effect of exchange rate changes on china's processed exports. *Journal of the Japanese and International Economies*, 25(2), 33–46. https://doi.org/10.1016/j.jjie.2010.12.001