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The Impact of Exports and Imports on Economic Growth in Indonesia: The Mediating Role of Exchange Rates

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Abstract:

Indonesia's growth prospects are revising due to the increasing intensified social unrest and geopolitical tension between the United States and China that affected Indonesia's international trade. On the other hand, several obstacles usually prevent economic growth, such as surging population growth, inadequate infrastructure, limited resources or their inefficient utilization, and excessive government intervention. Since Indonesia's economic growth fluctuated every year, this study aimed to investigate the country's economic growth through exports, imports, and exchange rates from 1980 to 2019. In addressing these objectives, multiple regression analysis is used as a research method with the ordinary least square regression approach to examine the effects of the exports, imports, and exchange rates on Indonesia's economic growth. The findings show that exports and exchange rates indirectly influence economic growth, while imports play an essential role in positively affecting the growth. Surprisingly, after being mediated by the exchange rate, the relationship between export and imports shows significant positive results. Furthermore, the outcomes of this study can be helpful for the Government as input and consideration in determining policies, especially those related to increasing economic growth through export and import activities.

Keywords: economic growth, Indonesia, exchange rates, export, import.

进出口对印度尼西亚经济增长的影响：汇率的中介作用

摘要：

由于影响印尼国际贸易的美国和中国之间日益加剧的社会动荡和地缘政治紧张局势，印尼的增长前景正在发生变化。另一方面，一些障碍通常会阻碍经济增长，例如人口激增、基础设施不足、资源有限或利用效率低下以及政府过度干预。由于印度尼西亚的经济增长每年都有波动，因此本研究旨在调查该国从 1980 年到 2019 年的出口、进口和汇率的经济增长情况。针对这些目标，采用多元回归分析作为普通最小二乘回归的研究方法检验出口、进口和汇率对印度尼西亚经济增长的影响的方法。研究结果表明，出口和汇率间接影响经济增长，而进口在积极影响经济增长方面发挥着重要作用。出人意料的是，在受到汇率的调节后，进出口关系呈现出显著的正向效应。此外，本研究的结果有助于政府在制定政策时提供投入和考虑，

尤其是那些与通过进出口活动促进经济增长有关的政策。

关键词：经济增长、印度尼西亚、汇率、出口、进口。

1. Introduction

Developing countries focus on improving economic growth to encourage the welfare of citizens. One of the most popular ways to increase the growth of an economy is conducting international trade. There is no country worldwide that can fulfill their own needs by themselves. There will be exchanging goods and services between two or more countries through export and import activities, increasing production and economic growth in those countries. However, the International Monetary Fund (IMF), in January 2020, stated that the prediction of the global growth economy in 2020 would have estimates slowing down by 0.5%. Simultaneously, developing countries in Asia expects economic growth to increase by 2%, except for Indonesia and Thailand. Indonesia and Thailand's growth prospects were revised, followed by weakening exports weighing domestic demand. Nevertheless, Indonesia's growth prospects are revising due to the increasing intensified social unrest and geopolitical tension between the United States and China that affected Indonesia's international trade.

On the other hand, several obstacles usually prevent economic growth, such as surging population growth, inadequate infrastructure, limited resources or inefficient utilization of resources, and excessive government intervention. The effectiveness and efficiency of natural resources can encourage a country's economic growth because it can increase its production capacity. According to the research by Abiad et al. (2019) that studied the prospective consequences of a trade war between the US and China, indicated that it had slowed down the economic growth in Indonesia by reducing gross domestic product (GDP), employment rate, export, and import. In this term, the US and China trade war will reduce the chance of Indonesian export products entering the trade blocs. Therefore, this tension trade also impacted slowing down economic growth.

The Indonesian economy has strong linkages with China and the United States since they are Indonesia's biggest export destination countries. Besides, Indonesia is known as the world's biggest producer and exporter of crude palm oil (CPO) and exports most of its oil, mineral, and gas to China (Ali et al., 2017). However, Indonesia primarily exports raw materials and unrefined oil rather than end products. Furthermore, statistical data from the Central Bureau of Statistics (BPS) states that Indonesia's exports in 2019 fell by about 6% compared to exports in the same period in 2018. It indicates that Indonesia is still unable to manage its natural resources properly.

In addition, Indonesia also imports most products from China. China has contributed 25.32% of all total import products in Indonesia. Since China and

Indonesia have a strong relationship, Indonesia can be affected by Chinese economic engagement in export and import. In an era of the trade war between the United States and China, Indonesia should take advantage of the current economic situation to boost exports to countries that conflict with China because China is the largest exporter of manufactured goods.

However, Indonesia has more limited replacement potential than neighboring countries such as Vietnam, Thailand, and Malaysia, which have taken advantage of this opportunity. One reason is the level of similarity between Indonesian export products with China, which is very low, so even though Indonesia has abundant natural resources, it has not been beneficial in this regard. On the other side, the infrastructure for export routes in Indonesia is also considered inadequate. Export and import transactions also involve currency exchange rates because foreign trade uses international currency. At the same time, the Indonesian currency (IDR) depends on the US Dollar (USD). That is why the exchange rate in Indonesia is very volatile.

Furthermore, Indonesia uses a pure floating exchange rate regime system, which means domestic currencies' value against foreign currencies is determined by the market mechanism (Suseno & Simorangkir, 2004). This system leads to the risk of exchange rates of currencies due to uncertainty. Fluctuating exchange rates will affect the prices of goods and services in foreign trade. The exchange rate between USD and IDR in early February 2020 started to fluctuate, making Indonesia's currency deteriorate rapidly. In March 2020, the value of 1 USD was equal to IDR 16.000. It is the highest amount for USD 1 in the last 20 years.

The depreciation of the Indonesia Rupiah will cause goods to be more expensive for foreign parties. The supply and demand relationship will directly affect international trade flows, reflecting the macro indicator on the trade balance. Moreover, changes in exports and imports are economic indicators that affect Indonesia's economic growth.

The effect of exports and imports on economic growth in Indonesia using exchange rates as mediating variables is still relatively little studied, especially during the last three years after the US-China trade transition. Whereas Indonesia's trade balance always experiences a deficit, it is not easy to maintain a surplus if there are surpluses in certain months. Indonesia is known as a country that has abundant natural resources. The problem is Indonesia's ability only to mine the unrefined oil but unable to process it, and it became semi-processed goods or even processed goods.

Tracing the background above, the researcher was interested in the analysis determinant factor that affected Indonesia's economic growth through exports

and imports mediated by the exchange rate as variable mediating. This paper investigates the impact of export, import and exchange rates on Indonesia's economy. This study has conducted multiple regression analyses to examine time-series data of Indonesia's exports, imports, exchange rates, and economic growth from 1980 to 2019. The next section of this paper will briefly discuss and support the findings.

2. Literature Review

This section reviews the theoretical and empirical literature on exports, imports, exchange rates, and economic growth. The theory of economic growth arises because of social change in society, especially in developing countries, which experts put forward to improve socio-economic conditions in developing countries.

2.1. Theoretical Review

Economic growth is a benchmark of the progress and development of a nation. Therefore, many theories of economic growth are emerging. For example, in the second half of the eighteenth century, Adam Smith and David Ricardo initiated the economic growth theory, emphasizing international trade openness. Adam Smith views the prosperity of the people in such a country through production and trade to produce universal wealth. Production and trade must remain maximal; for this reason, Smith suggested that the Government in each country gives economic freedom to its people to conduct free trade domestically and internationally.

Nevertheless, David Ricardo criticized the theory of absolute advantage, where international trade is only possible by countries that can carry out the production process to achieve an absolute advantage. Moreover, Adam Smith's theory seems to apply only to countries concentrating on producing goods. Based on these weaknesses, David Ricardo put forward a new idea in international trade in the form of comparative advantage. According to modern economic theory, a country without absolute advantage can carry out profitable international trade to determine goods with relatively lower costs than other countries. Therefore, countries that succeed in producing goods at relatively lower prices have a comparative advantage. Then a new theory emerged, known as the Heckscher and Ohlin theory.

Heckscher and Ohlin's theory reveals that each country exports and imports goods and services because of the availability of different resources among these countries. The Heckscher-Ohlin theory explains that two countries will trade because of differences in resources and production between these two countries. This theoretical model has several main assumptions: that there are only two countries that use the same technology, two commodities (labor-intensive and capital-intensive), and two factors, production and constant. There is no overall specialization in production in the second country; both countries have the same tastes and perfect competition, excellent

mobility, and no transportation costs. These countries must use the complete resources of their own country and balance international trade.

2.2. Empirical Review

There is a growing literature on the empirical relationship between exports, imports, and the exchange rates on economic growth in the world. Most of these studies examined the economic growth in developing countries, including Indonesia. Speed development of international trade in developing countries is a concern of the world economy, and this is because international trade in the goods and services sector can accelerate the country's economic growth. The empirical review contains empirical evidence related to economic growth in Indonesia. Based on conducted literature reviews on recent studies about exports, imports, and exchange rates, the studies show the variety of variables correlated to economic growth (Table 1).

Table 1. Empirical review

Authors	Research Title	Research Result
Borhan, H. B. and Subramaniam, G. (2020)	Impact of International Trade on Economic Growth in A Developing Nation-A Case Study of Malaysia	•Export is an insignificant and positive effect on economic growth in Malaysia •The exchange rate significantly negatively affects the economic growth of Malaysia.
Slesman, L.Y., Naseem, N.A.M and Aldomi R. F. M. (2017)	Economic Freedom, Real Exchange Rates and Economic Growth in Emerging Markets and Developing Countries	•The exchange rate has a statistically significant and negative influence on the economic growth
Yusoff, M. B. and Nulambeh N.A. (2018)	Exports, Imports, Exchange Rates, Gross Domestic Investment, and Growth: Empirical Evidence from Cameroon	•Export and exchange rates positively influence Cameroon's economic growth •Import negatively influence economic growth in Cameroon
Ahmed, K., Qasim, M., and Chani M.I. (2017)	Impact of Exchange Rate on Export in Case of Pakistan	•Exchange rate and export in Pakistan have a negative and insignificant relationship •Exchange rates and imports significantly affected economic growth in Saudi Arabia •Export and economic growth have a causality relationship in the short and long run.
Alkhateeb, T.T.Y., Haider Mahmood, and Sultan, Z. A. (2016)	The relationship between exports and economic growth in Saudi Arabia	

Summary of empirical studies above uses the same method in various countries but found different research results. There are also studies in the same country with the same research variables but using different methods and finding different research results from some of the sources above that still found inconsistencies from the research results. However, the result is variety; each country has different outcomes. For example, in some country, export and import boost economic growth and the opposite cause decrease in economic growth. While the exchange rate commonly negatively affects economic growth in several countries, it may happen with Indonesia. Moreover, the research above has

similarities and differences with this study.

3. Materials and Methods

3.1. Data

This study analyses Indonesia's annual data for the period 1980-2019. The variables in this study include Economic Growth (EG), Export (EX), Import (IM), and Exchange Rate (ER). Economic growth in Indonesia is expressed as a percentage. Exports and imports measured in US dollars. Meanwhile, the exchange rate uses the US dollar to compare the rupiah exchange rate. The source of data is from the World Bank Database. Summary statistics are provided in Table 1. The highest growth of Indonesia's economy was 9.8% in 1980, and the lowest was -13% in 1998 due to Indonesia's financial crisis. The Jarque-Bera (J-B) normality test results indicate that variables are approximately normal.

Table 2. Statistic summary of the variables (Output of Eviews 10)

Variable	Economic Growth	Exchange Rates	Exports	Imports
Mean	5.1507	6460.725	9.2667	8.7365
Median	5.5291	8499.454	6.1366	5.2981
Maximum	9.8800	14236.94	2.3660	2.2960
Minimum	-13.126	626.9940	1.6388	1.6076
Std. Dev.	3.4040	4702.851	7.4356	7.4816
Skewness	-3.9531	0.085793	0.7122	0.8373
Kurtosis	22.1131	1.470284	1.9521	2.1281
Jarque-Bera	713.0393	3.949122	5.2122	5.9403
Probability	0.0000	0.138822	0.0738	0.0512
Sum	206.0294	258429.0	3.7166	3.4946
Sum Sq. Dev.	451.9159	8.625533	2.1562	2.1839

3.2. Method

This study uses multiple regression analysis with the Ordinary Least Square (OLS) method to describe the relationship between exports, imports, and exchange rates to Indonesia's economic growth. The conceptual framework of this study is illustrated in Figure 1.

Based on the conceptual framework, the following hypothesis can be drawn:

H_1 : The export has a positive effect on the exchange rate

H_2 : The import has a positive effect on the exchange rate

H_3 : The export has a positive effect on economic growth in Indonesia

$H_{3(a)}$: The export has a positive effect on economic growth in Indonesia mediated through exchange rate

H_4 : The import negatively affects economic growth in Indonesia

$H_{4(a)}$: The import negatively affects economic growth in Indonesia mediated through exchange rate

H_5 : Exchange rate negatively affects economic growth in Indonesia.

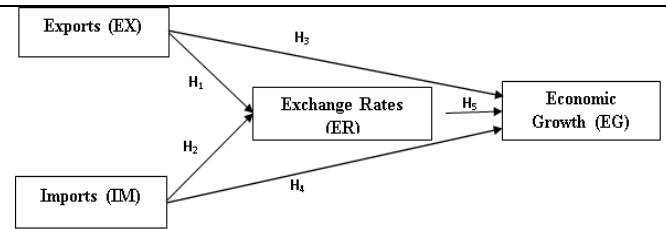


Figure 1. Conceptual framework

However, to simplify the analysis process, two estimation questions were made. The first estimation question analyses the effect of exports and imports on the exchange rate. The second estimation equation analyses exports and imports on economic growth mediated by the exchange rate. The regression model specifications are formulated as follows:

$$ER = \beta_0 + \beta_1(EX_t) + \beta_2(IM_t) + e_1 \quad (1)$$

$$EG = \beta_0 + \beta_3(EX_t) + \beta_4(IM_t) + \beta_5(ER_t) + \beta_6(EX_t) * (ER_t) + \beta_7(IM_t) * (ER_t) + e_2 \quad (2)$$

In Equations 1 and 2, time-series denoted by subscript t . Then, β_0 is the constant parameter, β_{1-7} is the coefficient to be estimated, and e is the residual or standard error (Gujarati, 2004). However, before conducting regression analysis, the research data must contain stationery. Therefore, the statistical test will use the Augmented Dickey-Fuller (ADF) unit root test to check stationery data. Furthermore, the test will be continued with the Cointegration test to determine whether the stationary residual regression integrates well or not. If the cointegration test results show that the variables are cointegrated, the relationship between variables is stable in the long run. The cointegration test will use the Johansen cointegration test. Finally, the hypothesis test will use the Ordinary Least Square (OLS) test.

4. Findings and Implications

This research uses 40 years of data observation from 1980 to 2019. Graph 1 shows the movements of economic growth, exports, imports, and the Rupiah exchange rates against the US Dollar over forty years.



Figure 2a. Economic growth in Indonesia

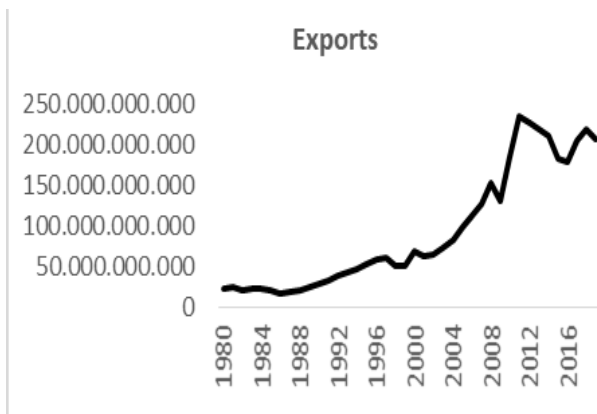


Figure 2b. Exports in Indonesia

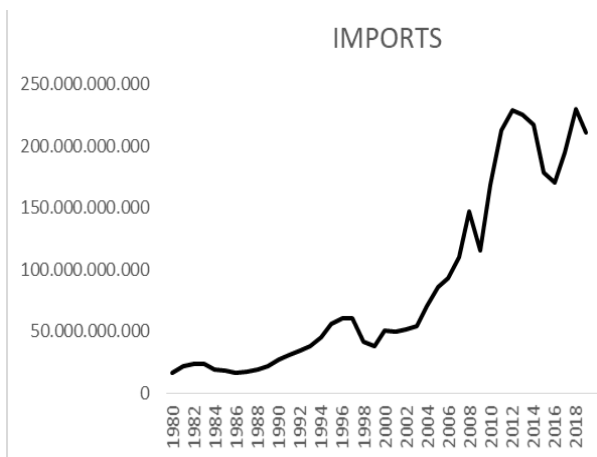


Figure 2c. Imports in Indonesia

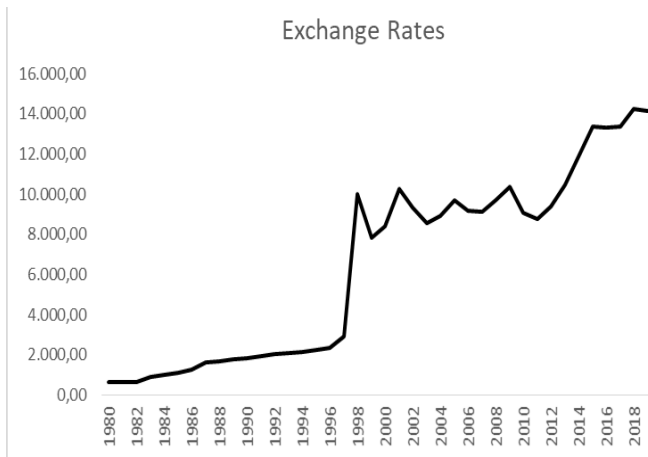


Figure 2d. Exchange rates in Indonesia

The lowest condition for Indonesia's economic growth (Figure 2a) occurred in 1998, during the financial crisis that happened in Indonesia. Consequently, economic growth plummeted to a negative thirteen% (-13%). According to the Indonesian Finance Minister, Sri Mulyani said that the economic crisis in 1998 was the financial crisis in Asia. Then, Indonesia's economy slowly declined in early 1999 and moved at 4-6% throughout 2000-2007. In 2018, Indonesia experienced another financial crisis due to the global economic crisis. However, this crisis's consequences are not as dire as the crisis ten years earlier; the Indonesian economy only fell by 2%. Indonesia managed to recover until 2011 when Indonesia achieved the highest economic growth of

6.48% in the 20 years from 2000 to 2019. Furthermore, starting in 2013, Indonesia's economy slowly declined and was only able to sustain growth in the range of 5%.

Indonesia's export growth has increased quite significantly (Figure 2b). However, exports have decreased depending on the global market situation in specific years. For example, in 1998, exports had been reduced by almost 15% from the previous year due to high inflation caused by Indonesia's financial crisis. In 2009, exports also fell by USD 21.732 billion due to the financial crisis that occurred in 2008. Furthermore, Indonesian exports increased, reaching a maximum value in 2011 of USD 235.095 billion. However, this growth not be sustained over a long period. The decline in exports in the next phase occurred in 2012-2017. It went up to USD 218.580 billion in 2018 but fell to USD 206.015 billion in 2019. Thus, the global market conditions and the domestic political economy contributed to the increase and decrease in Indonesia's imports.

Indonesia's import growth was gentle in the first ten years, ranging from USD 16 million to USD 23 million (Figure 2c). In the second decade, import growth experienced a significant upward movement of up to USD 60 million in 1996. It decreased by USD 19 million in 1998 due to the financial crisis in Indonesia. The import growth was relatively rapid in the third decade. In the early 2000s, Indonesia's imports were USD 50 Million, but in 2009 it was USD 115 Million. The change in imports indicates that many foreign products are entering Indonesia. It suggests that there is an increase in consumption in Indonesia. In the last ten years, imports entering Indonesia increased to USD 211 million in 2019, although they had fallen to USD 170 million in 2017.

The exchange rate is the value of one US dollar in Rupiah (IDR) from 1980-2019 (Figure 2d). Slightly different from other variable charts, this variable exchange rate is an average exchange rate that changes every day. USD 1 in 1980 was IDR 626.99, slowly increasing every year. In 1984 the price of USD 1 was equal to IDR 1,025. From here on, the exchange rate has never decreased in 15 years in 1997, touching the price of IDR 2,909. The financial crisis in 1998 caused very high inflation to the point where USD 1 was equal to IDR 10,013. Changes in exchange rates are susceptible to changes in the global economy. The financial crisis in 1998 caused the Bretton Woods system (the 1990s) to collapse. Several American and Asian countries were facing exchange rate crises. The exchange rate was driven and shaken the country's economy, causing social and political unrest in various countries, including Indonesia. To overcome this crisis, Indonesia abandoned the fixed exchange rate system and proposed a market mechanism that determines the exchange rate, better known as the floating exchange rate system. However, most of Indonesia's export and import activities use the dollar in their transactions, so changes in the exchange rate significantly affect export and import activities. After this change in the exchange

rate system in the last ten years, the Indonesian exchange rate increased from IDR 10,000 to IDR 14,147 in 2019.

As earlier outlined, before conducting the regression test, the research data must be stationary. The unit root test with Augmented Dickey-Fuller (ADF) shows that the data will be stationary if the t-statistic value is less than 0.05. This study's unit root test results indicate that only the economic growth variable is stationary at the current level. At the same time, exports, imports, and exchange rates are not stationary. Therefore, it is necessary to conduct a stationary test at the first difference level. The unit root test results on the first difference showed that all the variables were stationary with a significance value below 0.05, as shown in Table 3.

Table 3. Result of unit root and cointegration test

Unit Root Test				
Variable	t-Statistics	Level	t-Statistics	1 Difference
	ADF	Prob.	ADF	Prob.
EG	-3.965	0.0039	-7.031	0.0000
EX	-1.494	0.5259	-6.482	0.0000
IM	-0.352	0.9074	-4.115	0.0001
ER	-0.619	0.8545	-5.276	0.0001
Cointegration Test				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized	Eigenvalue	Trace	0.05	
No. of C.E. (s)		Statistic	Critical Value	Prob.**
None *	0.792	91.945	47.856	0.0000
At most 1 *	0.431	32.260	29.797	0.0255
At most 2	0.200	10.800	15.494	0.2241
At most 3	0.059	2.3140	3.8414	0.1282

A cointegration test is a follow-up test after finding out that data is stationary. The cointegration test result showed that the value of Eigenvalue is 0.79 with trace statistic 91.95 greater than the critical value at significance 0.05. Thus, can be concluded that the variable Exports (EX), Imports (IM), and Exchange Rates (ER) on economic growth (EG) mutually cointegrated at a significance level of 5%; the estimation model can be interpreted then (refer to Table 3). Hypothesis Testing uses the ordinary least square method. The result of the regression analysis for variables exports, imports, exchange rates, and economic growth is illustrated in Table 4.

Multiple regression analysis model function is formulated as follows:

$$D(ER) = -0.200663 \cdot D(EX) + 0.869722 \cdot D(IM) + 0.032311 \quad (3)$$

$$D(EG) = -2.380339 \cdot D(ER) - 0.124362 \cdot D(EX) + 2.427194 \cdot D(IM) + 7.422495 \cdot D(EX) \cdot D(ER) + 8.013132 \cdot D(IM) \cdot D(ER) - 0.061798 \quad (4)$$

Table 4. Results of the hypothesis testing

Variable	Coef.	Std. Error	t-stats	Prob.
D(EX) -> D(ER)	-0.2006	0.0726	-2.7643	0.0089
D(IM) -> D(ER)	0.8697	0.1182	7.3586	0.0000
D(EX) -> D(EG)	-0.1243	0.6811	-0.1826	0.8562

Continuation of Table 4

D(IM) -> D(EG)	2.427	0.9227	2.6304	0.0129
D(ER) -> D(EG)	-2.380	0.8267	-2.8793	0.0069
D(EX) -> D(ER) -> D(EG)	7.422	2.1846	3.3975	0.0018
D(IM) -> D(ER) -> D(EG)	8.013	3.7234	2.1520	0.0388
Dependent Variable	Economic Growth		Exchange rates	
R-squared	0.636584		0.708916	
Adjusted R-squared	0.581521		0.692745	
SE of regression	0.421346		0.089784	
F-statistic	1.156.102		4.383.781	
Prob(F-statistic)	0.000002		0.000000	
Mean dependent var	-0.017337		0.066071	
S.D. dependent var	0.651332		0.161976	
Akaike info criterion	1.249.915		-1.909.013	
Durbin-Watson stat	2.390.262		1.723.052	

5. Discussion

This section presents the determinant factor influencing economic growth in Indonesia through export, import, and exchange rates. Based on the result of hypothesis testing, exports and imports influenced 70% of exchange rates. Another 30% was influenced by other variables that do not exist in this study. Therefore, the effects of exports, imports, and exchange rates on Indonesia's economic growth are 63%, and the rest is influenced by other variables. Simultaneously exports and imports significantly affect the exchange rate. It is related to the strong relationship between these variables. However, exports and imports are the main factors influencing the exchange rate, even though another factor is not examined in this study. On the other hand, exports, imports, and exchange rates simultaneously significantly influence Indonesia's economic growth. That indicated that exports, imports, and exchange rates encourage the growth of the economy in Indonesia.

5.1. Effect of Exports on Exchange Rates

Exports negatively influence exchange rates; the hypothesis results are consistent with Ahmed et al. (2017), which states that Pakistan's exports and exchange rates have a negative relationship. However, Ngondo & Khobai (2018) also examined the relationship between exports and exchange rates in South Africa, and the findings are insignificantly negative. Based on the exchange rate theory, an increase in the export value is directly proportional to increased demand for rupiah currency. Thus, the Rupiah (IDR) value will strengthen against the US Dollar (USD). Conversely, when exports decline, the Indonesian Rupiah (IDR) also decreases, which causes the rupiah exchange rate to weaken against the US dollar (Mustika et al., 2015). Furthermore, according to World Bank Database, from 1980 to 2019, the export value and exchange rate fluctuated. However, Indonesia's exports have tended to increase over the past forty years.

5.2. Effect of Imports on Exchange Rates

Imports positively and significantly affect exchange rates. This result contradicts the research result by Gondaliya & Dave (2015), which state that imports

negatively correlate with the exchange rates. However, Naseem, Tan, & Hamizah (2009) found that in Malaysia, when the exchange rate was overvalued before the crisis and undervalued during the crisis period, imports in Malaysia have a significant positive relationship to the exchange rate. Furthermore, Indonesia also faced a financial crisis in 2008 due to a financial crisis in ASEAN, which caused the net import value in 2008 to rise by 33% from the previous year. Therefore, it is assumed that Indonesia faced the same thing as Malaysia during the 2008 financial crisis, which mainly hit ASEAN countries. Therefore, it is not surprising that in 1980-2019, Indonesian imports had a positive impact on the strengthening of the rupiah exchange rate.

5.3. Effect of Exports on Economic Growth in Indonesia

The exports coefficient on economic growth is -0.124362 (Table 4), indicating a negative relationship between exports and economic growth. The hypothesis test results show that the relationship between exports and economic growth in Indonesia is not significant. This outcome is in line with the previous studies (Ahmed et al., 2017), which states that exports negatively affect economic growth in Pakistan. The research results by Kim and Oh (2012) also found that the relationship between exports and economic growth in South Korea was not statistically significant. Nevertheless, contrary to the research results (Borhan & Subramaniam, 2020), exports have a positive and insignificant effect on Malaysia's economic growth. Elias et al. (2018) also found that exports had a significant and positive influence on economic growth in Nigeria. However, even though the relationship between exports and economic growth in this study is negative and insignificant, it does not mean that exports do not benefit economic growth in Indonesia. This hypothesis indicates that exports growth is no longer the primary support for Indonesia's economic growth.

The empirical findings of this study have important implications for policymakers in Indonesia because currently, there is still a widespread tendency of the public to view exports as profitable and imports as detrimental. Apart from that, policymakers must be more careful in examining goods exported abroad because Indonesia exported raw materials abroad. Sustainable export of raw materials will cause domestic natural resources to run out within a certain period, especially for non-renewable raw materials. Besides that, exporting raw materials has made Indonesia never get added value from the exported goods (Ali et al., 2020). It is a different story if Indonesia carries out the domestic production process; there will be many jobs that can reduce the unemployment rate in Indonesia.

Furthermore, exports of final products and raw materials encourage Indonesia's economic growth. Therefore, the relation between exports on economic growth mediated by exchange rates is positive and significant. These findings indicate that the exchange

rate is essential for the relationship between exports and economic growth. The coefficient value is 7.422495, which indicates that the effect of exports and exchange rates is relatively high on economic growth. The exchange rates have significantly affected Indonesia's exports and economic growth in the last forty years. The exchange rates affect the calculation of exports product because export transactions use dollars. Therefore, the price of export products set by the producer will follow dollar price movements.

5.4. Effects of Exports on Economic Growth in Indonesia Mediated by Exchange Rates

In this case, the increase or decrease in the exchange rates equally affects exports and economic growth. Strengthening the exchange rates will benefit exporters in the sales of export products. The value of the product will increase when the dollar price rises. In addition, export income increases and directly affects economic growth. On the other hand, decreased exchange rates also affect exports and economic growth. According to research by (Jun & Liangliang, 2017), the depreciation of the exchange rates will reduce export prices and increase the export quantity. On the other hand, the decline of the exchange rate will increase exports of goods to increase the production of goods that can be used domestically, absorb labor, and ultimately increase economic growth.

5.5. Effects of Imports on Economic Growth in Indonesia

The relationship between imports and economic growth in Indonesia is positive and significant. Unfortunately, though, some of the literature supports the negative and significant impact of import on economic growth, such as results from (Borhan & Subramaniam, 2020), Yusoff & Nulambek (2018), and Ali et al. (2017) that found if the relationship between import and economic growth is negative. At the same time, the result of this study shows the opposite. However, Indonesia imports three principal components from other countries, based on the Indonesia central bureau of statistics: consumer goods, raw materials, and capital goods. As a developing country, Indonesia continues to increase domestic products to boost economic growth. To support the increase in domestic products, Indonesia imports raw materials from abroad to meet domestic demand and maintain price stability. Therefore, imports have a significant effect on economic growth in Indonesia if done in the right amount. If Indonesia imports capital goods and raw materials, it will be suitable for the domestic industry because it meets domestic needs that cannot be produced domestically due to limited resources. However, if Indonesia imports many consumer goods and finished products, it will affect domestic products and slow down sales of domestic products.

5.6. Effects of Imports on Economic Growth in Indonesia Mediated by Exchange Rates

The hypothesis testing result shows that exchange rates positively affect the relationship between imports on economic growth. The coefficient value is 8.013132, which means that for every increase in imports that mediated the exchange rates by 1%, economic growth will increase by 8.013132% (Table 4). Interestingly, this relationship is significant, which means that exchange rates have contributed to the relationship between imports and economic growth. As a result of the trade war between the US and China (2017-2019), Indonesia's imports have decreased.

There are indications that the decline in imports was due to the increase in import tariffs for several Chinese Products, which led to the higher prices. If Indonesia cannot import raw materials, there will not be any products in the industry. Likewise, suppose no capital goods nor consumer goods enter the country. In that case, it will affect the economic growth in Indonesia because there will not be investors (capital goods) to uplift the economy, and neither will Indonesia be able to purchase consumer goods.

5.7. Effects of Exchange Rates on Economic Growth

The result of the hypothesis testing shows that the relationship between exchange rates and economic growth in Indonesia is negative and significant. These results were consistent with the previous studies from (Borhan & Subramaniam, 2020) and (Magdalena & Sudiana, 2020) stated that the exchange rates negatively affect economic growth. Even though (Nasir & Valdrina, 2017) found the opposite. Therefore, although the coefficient between exchange rates and economic growth in Indonesia is -2.380339 (Table 4), it is indicated that exchange rates significantly impact economic growth. If the exchange rates increase 1%, then economic growth will increase Indonesia will decrease -2.380339 and vice versa.

Figure 2d shows that the rupiah has continued to depreciate over the past forty years. The Governor of Bank Central Indonesia stated that depreciation of the Indonesian rupiah caused by the rupiah currency's value is often depressed due to global uncertainty. This situation requires Indonesian banks to take the right policies to maintain a balanced exchange rate. A stable exchange rate will prevent the trade balance from being over-valued, which can cause the trade balance to deteriorate and harm the national economy (Suseno & Simorangkir, 2004). Based on the research that has been done on economic growth in Indonesia, it can be concluded that the results of this study answer the research objectives.

6. Conclusion

The study answers the research questions and hypothesis that the relationship between exports and imports depending on the exchange rate is significant. After being mediated by exchange rates, the relationship between exports and imports to economic

growth is significantly positive. In addition, the relationship between exports, imports, exchange rates, and economic growth in Indonesia is simultaneously significant. All independent variables have influenced 63% of Indonesia's dependent variable economic growth. Then, the remaining 37% is influenced by other variables not included in this study.

However, the effect of a trade war between the US and China affected the economic growth in Indonesia. Indonesia could neither import raw materials, capital goods, nor consumer goods because it was a global crisis that affected the exchange rates and made it difficult for Indonesia to have enough currency and maintain its production status. This study deliberated the influence of exports, imports, and exchange rates on economic growth in Indonesia. Furthermore, the researcher hopes that implication of this study will be beneficial, whether theoretically or practically. This study can contribute to knowledge and more in-depth enhancement of academic theories related to exports, imports, exchange rates, and economic growth. Furthermore, the findings of this study can develop existing social science literature, especially in economics, to give new perspectives on the previous study related to the information about exports, imports, exchange rates, and economic growth.

Moreover, the result of this study can also provide empirical evidence for academics and consideration for conducting further studies. This study was conducted to analyze the impact of exports, imports, and exchange rates on economic growth in Indonesia. This research obtained some evidence based on findings of the study that can recommend several implications as an input to the Indonesian Government. First, the findings of this study will help the researchers understand how exports, imports, and exchange rates influence the growth of the economy in Indonesia. Second, understanding the importance of exports, imports, and exchange rates to encourage Indonesia's economy will motivate the Government to improve its strategy to maintain Indonesia's economic growth.

7. Limitation and Further Study

The researchers realize that this study has several limitations that need to be addressed. The first limitation of this research is that the research only looks at Indonesia's economic growth, which is influenced by exports, imports, and the exchange rate. Undoubtedly, many other variables influence economic growth. In addition, this study also sees that the effect of exports and imports on exchange rates is insignificant. There is an indication that the exchange rate is influenced by other variables such as inflation, global economic conditions, and global political turmoil.

The second limitation of this study arises from the research data source that only uses data on Indonesian rupiah exchange rates against US dollars. Maybe other foreign currencies can be added further to clarify the effect of exchange rates on economic growth for further research.

The third limitation is the lack of research sources on this topic for Indonesia. In the future, it is hoped that a new line of researchers will be developed from this research, which will assist in gaining a deeper understanding of economic growth in Indonesia.

However, first and foremost, because of the scarcity of studies on this economic growth performance influenced by exports imports and mediated by exchange rates, this study can be considered a potential area for future research.

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Authors' Contributions

P. HARYANI conceived the presented idea, developed the theory, and performed the computations. S.M.F. AZAM verified the analytical methods, encouraged and supervised the findings of this work. All authors discussed the results and contributed to the final manuscript.

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