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The Influence of Oil and Gas Exports and Non-Oil and Gas Exports on Indonesia's Economic Growth with the Exchange Rate of the Rupiah as a Moderating Variable

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Abstract:

Economic growth is an important topic to study. This is because economic growth is a reflection of the welfare of the people of a country. Exports are a sector with the potential to contribute to economic growth. Additionally, the exchange rate can influence the relationship between exports and economic growth. The purpose of this research is to understand how the export of oil and gas and non-oil and gas exports affect economic growth. And to determine whether the exchange rate can moderate the relationship between oil and gas exports and non-oil and gas exports on economic growth. The analysis in this research is a moderated regression analysis using data from 2014 to 2023. The results show that oil and gas exports have a significant negative effect on Indonesia's economic growth. Non-oil and gas exports have a significant positive effect on Indonesia's economic growth. The exchange rate of the rupiah have a significant positive effect on Indonesia's economic growth. The exchange rate of the rupiah can moderate by weakening the relationship between oil and gas exports and Indonesia's economic growth. The exchange rate of the rupiah can moderate by strengthening the relationship between non-oil and gas exports and Indonesia's economic growth.

Keywords:

Economic growth, oil and gas exports, non-oil and gas exports, exchange rate of the rupiah

BACKGROUND

Economic growth is a key indicator in measuring the success of a country. According to the sukirno in Salsabila (2021), economic growth can be defined as an increase in economic development that implies an increase in the production of goods and services, which ultimately affects the improvement of community welfare. This shows that economic growth is not just a number, but also an indicator of social welfare. Thus, economic growth depends not only on production factors but also on the quality of human development and the development policies implemented at the national level. Economic growth is a reflection or indicator of effective and efficient economic development (Ivonia Auxiliadora Freitas Marcal et al., 2024). An increase in economic growth indicates that economic development is progressing well, as reflected in the decrease in unemployment and poverty rates. This is due to the increase in national output, which is the value of goods and services produced, which in turn encourages the creation of new jobs and the development of existing industries.

The fluctuating economic growth requires sectors that can stabilize it, and even has the potential to make significant contributions to economic growth. Although consumption is the dominant factor in Indonesia's economic growth, other sectors, such as the export sector, also play an important role in supporting that growth. The export sector has great potential because



it is supported by resources that can be optimally utilized. According to Marpaung & Purba (2017), Indonesia began to promote export activities since 1983, in line with the change in industrial strategy from import substitution industries to export promotion industries. This policy indicates that Indonesia has recognized export potential as an important factor in supporting economic growth. Exports play a significant role in enhancing Indonesia's economic growth, thus it is very important for economic actors to empower this potential to the fullest.

Export and import activities are an important part of international trade, which requires a currency that is globally accepted. Therefore, an exchange rate that can serve as a standard in international transactions is needed. To this day, the United States dollar remains the primary currency in international trade, including in Indonesia (Adhista, 2022). This makes the US dollar a benchmark for measuring the strength or weakness of the rupiah exchange rate. Exchange rates or currency rates are a very important economic indicator for a country's economy (Reza Nurul Ichsan, 2019). In an open economy, the exchange rate becomes a main concern for economic actors. Fluctuations in exchange rates, both increases and decreases, are a frequent topic of analysis to understand the causes and solutions. Changes in exchange rates can have an impact on various other economic indicators, including international trade.

The exchange rate plays a very important role for all countries in the world, including Indonesia. Therefore, the monetary authority of a country, in this case Bank Indonesia, needs to intervene in the exchange rate to achieve economic stability. To avoid unstable exchange rate fluctuations, Indonesia, through Bank Indonesia, carries out interventions that align with the established monetary policy, such as buying or selling foreign exchange reserves (Pramesti & Rahmi, 2024). The purpose of this intervention is to stabilize the Indonesian economy. According to Asiva Noor Rachmayani (2015), the exchange rate functions as a variable that can moderate the relationship between exports and economic growth. A stable exchange rate can positively influence export performance and economic growth. Therefore, managing the exchange rate needs to be done carefully through instruments managed by Bank Indonesia as the central bank. When the exchange rate can be well-controlled, the macro economy will operate more stably, as reflected in the context of Indonesia's exports and economic growth.

The urgency of this research lies in the context of Indonesia's macroeconomics. The results of this study can provide knowledge and information to policymakers. This is reflected in the ability to create more effective export policies. Policymakers can also control the exchange rate so that Indonesia's exports can compete with foreign products in the global market. Furthermore, the results of this research can contribute to enriching the economic literature that focuses on the dynamics of the influence of exports on economic growth, considering the exchange rate. The gap in this research is that several previous studies have examined how exports affect economic growth, both oil and gas exports and non-oil and gas exports. However, some previous studies have not included the exchange rate variable as a moderating factor. In reality, the exchange rate can affect export performance. Therefore, this research will fill that gap by analyzing more deeply the role of the exchange rate in the relationship between oil and gas exports and non-oil and gas exports on Indonesia's economic growth.

Based on the formulated problem statements, the objectives of this research are as follows:

1. To determine the effect of oil and gas exports on Indonesia's economic growth.



2. To determine the effect of non-oil and gas exports on Indonesia's economic growth.
3. To determine the effect of exchange rates on Indonesia's economic growth.
4. To find out whether exchange rates can moderate the effect of oil and gas exports on Indonesia's economic growth.
5. To find out whether exchange rates can moderate the effect of non-oil and gas exports on Indonesia's economic growth.

THEORETICAL FRAMEWORK

2.1 Economic Growth Theory

Economic growth can be defined as an effort to increase production capacity to achieve output additions, which is usually measured through Gross Domestic Product (GDP) or Gross Regional Domestic Product (GRDP) in a certain area (Adisasmita, 2013). This process of economic growth refers to the increase in per capita output over the long term. There are three important aspects in this definition: process, per capita output, and long term. Economic growth is a process, which means it cannot be viewed as a snapshot of the economic condition at a single point in time, but rather as a dynamic change occurring in the economy over time. The main focus of economic growth is on the changes or increases in output that occur continuously as time progresses.

According to Prof. Simon Kuznets, economic growth can be understood as the long-term increase in a country's capacity to provide various economic goods to its population. This increase in capacity is influenced by factors such as technological progress, institutional, and ideological aspects related to the socio-economic conditions of the country. In a broader sense, economic growth encompasses comprehensive changes in the economic structure of society. Furthermore, economic growth is closely related to economic development. Comprehensive economic development can drive an increase in national output, which ultimately reflects an increase in the economic growth of a country.

2.1.1 Endogenous Economic Growth Theory

The endogenous economic growth theory is an approach that explains that the economic growth of a country comes from its internal system, as a direct result of the processes occurring within that economy (Liberto, 2023). In this theory, human capital, which includes knowledge, is considered a crucial component that drives economic growth. Enhancing the quality of human capital will produce more advanced knowledge and technology, which in turn can create efficiency and effectiveness in the production process. Thus, this will lead to an increase in output in the form of goods and services within a country's economy.

Aside from human capital, the endogenous growth theory also emphasizes the importance of investment capital and innovation. This theory does not view external factors as



having a significant influence on a country's economy, as external forces are considered difficult to control. Instead, this theory emphasizes the importance of internal forces in driving economic growth, namely by improving the quality of human capital, encouraging innovation, and strengthening capital investment. Thus, focusing on internal strengths is expected to stimulate export competitiveness and sustainable, more stable economic growth.

2.1.2 Modern Economic Growth Theory

The modern economic growth theory was developed by two prominent economists, Sir Roy Harrod and Evsey Domar. These two economists explain that to address the economic growth problems of a country, an active role of the government is required. Harrod and Domar reject the view that a free market system is effective without government intervention. They argue that investment spending not only affects aggregate demand (AD), but can also influence aggregate supply (AS) through an increase in production capacity. According to them, to enhance society's ability to produce output, an increase in capital stock is necessary.

In the Harrod-Domar theory, investment plays a key role in the economic growth process. To increase investment, steps that need to be taken include creating income that can stimulate aggregate demand, as well as expanding production capacity. In addition, an increase in the capital stock, which is related to aggregate supply, also contributes to enhancing production capacity. Therefore, when the level of investment continues to perform well, the output and real income of a country are expected to continue to rise.

2.2 Exports

Export activities can be understood as the sale of goods and services from one country to another ((Dewi, 2020). According to (Mankiw, 2018), exports refer to goods produced domestically and sold abroad. Meanwhile, Murni (2006) defines exports as an economic activity that involves selling domestic products to international markets. As explained by Sasono (2013), exports are activities of selling products from one country to another that cross the customs territory of that country. The main purpose of exports is to obtain foreign exchange, which is greatly needed by the country, create jobs for domestic labor, earn revenue from export duties and other taxes, and maintain a balance between the flow of goods and the flow of money circulating domestically.



The high level of exports from a country can lead to an increase in demand for goods and services, which in turn will create more jobs and increase the number of workers involved in the production process (Harahap et al., 2023). This indicates that exports have a significant impact on GDP and can drive economic growth in the country (Febriyanti, 2019). There are several factors that influence exports, the first being domestic factors, which include prices in the domestic market and policies implemented internally. Second, international market factors, which include prices in the international market, exchange rates, as well as demand from importing countries (Blanchard, 2017).

2.3 Export Led Growth Theory

The export-led growth theory suggests that a country can enhance its economic growth through international trade, particularly exports (Johnston, 2016). This theory explains that by actively engaging in export activities, a country can gain significant benefits that would not be obtained if it does not participate in international trade. One of the main advantages of exports is the increase in foreign exchange reserves, which impacts the strengthening of the country's currency.

Export-led economic growth has great potential to help developing countries achieve sustainable growth and become more competitive in the international market (Johnston, 2016). The export-led growth theory provides significant benefits for developing countries such as China, Vietnam, India, and Indonesia. Therefore, it is important for developing countries to identify and leverage the resources that are their economic strengths to export to the global market. For example, Indonesia, which is rich in natural resources, has great potential to increase the added value of these resources through international trade.

According to (Sumiyarti, 2015a), in econometric studies, many research efforts have been made to analyze the relationship between exports and economic growth. One theory that is often used to explain this relationship is the Export Led Growth Hypothesis (ELG Hypothesis), which states that exports have an impact on economic growth. This hypothesis asserts that an increase in exports can drive the economic growth of a country. (Sumiyarti, 2015) also explains that to test the relationship between exports and economic growth, the analysis is conducted by incorporating the export variable into the production function and using cross-country data (time series). However, Sumiyarti (2015) warns that if there is a



reverse relationship, namely economic growth driving exports, then the estimation results obtained may become inconsistent and biased. This highlights the importance of a cautious approach in testing the causal relationship between these two variables.

2.4 Exchange Rate

The exchange rate can change over time, and the changes that occur are referred to as appreciation and depreciation (Lisdiani, 2021). Appreciation of the exchange rate may mean a strengthening of the domestic currency against foreign currencies. Meanwhile, depreciation of the exchange rate means a weakening of the domestic currency against foreign currencies. A country experiencing strengthening or weakening refers to changes in the nominal exchange rate. A country can buy more foreign currency when its exchange rate strengthens. However, when a country experiences weakening, it needs more domestic currency to buy foreign currency (Mankiw, 2018).

The exchange rates applied by each country refer to the United States Dollar. This means that almost all countries engaged in international trade use the United States Dollar as their currency (Widia & Azizah, 2021). Therefore, this research uses data obtained in the form of United States Dollars. This is because the export variable in this study is macro or overall. This is different from when trading between two countries or bilaterally. The use of local currencies also has weaknesses, such as economic and political instability between countries that leads to a trade balance deficit (Ardaneswari & Fauzi, 2024).

2.5 Purchasing Power Parity Theory

The theory that discusses the relationship between price levels or inflation and fluctuations in exchange rates is known as the purchasing power parity theory. According to (Simanjuntak, 2015), this theory explains that the ratio of price levels or inflation between two countries should correspond to the movement of exchange rates between those two countries. This can be illustrated by the phenomenon where, when the purchasing power of a country's population decreases due to rising inflation levels, the exchange rate of that country's currency will experience depreciation in the international foreign exchange market.



2.6 Mundell-Fleming Theory

The Mundell-Fleming model is a model that explains short-term fluctuations in various macroeconomic variables, such as exchange rates, Gross Domestic Product (GDP), consumption, investment, government spending, and net exports (K & Putri, 2017). This theory provides a broader understanding of economic phenomena, especially in the context of macroeconomics, by emphasizing the role of exchange rates as a variable that can influence a country's GDP and net exports.

According to (Attaullah et al., 2024), the Mundell-Fleming theory assumes that fluctuations in exchange rates can affect the movement of exports and imports. Therefore, the exchange rate is considered a variable that interacts with the export and import performance of a country. When there is an increase in exports, the value of the domestic currency, such as the rupiah, tends to strengthen. Conversely, if exports decline, the value of the currency will weaken. In a situation where the exchange rate weakens, it will positively affect the increase in exports. However, when the exchange rate strengthens, it will lead to a decrease in exports.

METHOD

The data analysis method used in this research is moderated regression analysis. The software used in this research is E-Views 12. With this method, it can be determined how exports (oil and gas and non-oil and gas) affect economic growth. As well as the exchange rate in moderating the relationship between oil and gas exports and non-oil and gas exports on Indonesia's economic growth as described below:

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

Y = Economic Growth

α = Konstanta

$\beta_1, \beta_2, \beta_3$ = Regression Coefficient

X1 = Oil and gas exports

X2 = Non-oil and gas exports

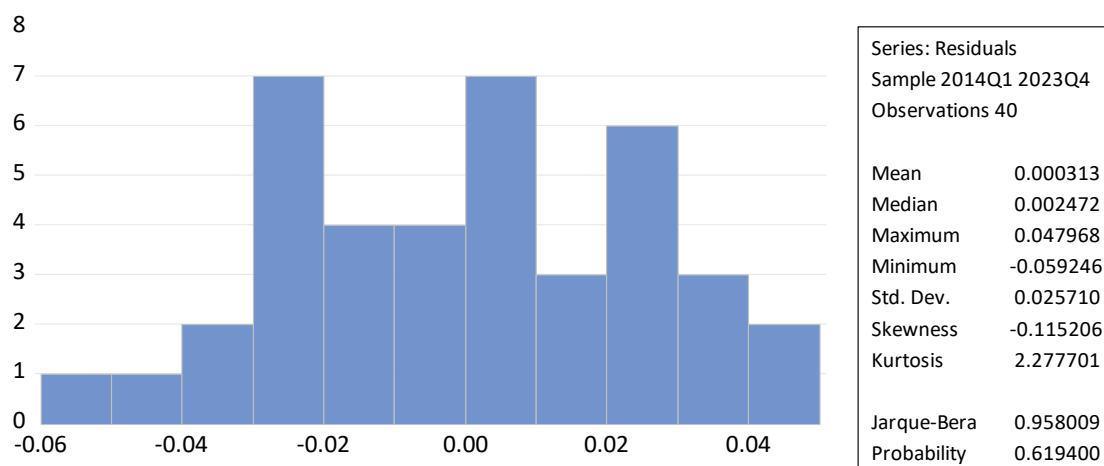
X3 = Exchange rate

e = Error Term

RESULT

4.1 Results Of Classical Assumption Tests

4.1.1 Normality Test



Based on the results of the normality test above, the probability value of Jaque-Bera is above 0.05. Therefore, it can be concluded that this study has no issues with normality.

4.1.2 Multicollinearity Test

Variance Inflation Factors
Date: 05/05/25 Time: 22:43
Sample: 2014Q1 2023Q4
Included observations: 40

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	1.800370	51069.01	NA
LOG(EM)	0.000846	1625.486	2.215367
LOG(ENM)	0.002470	7862.007	2.778036
LOG(KURS)	0.024511	63263.86	3.220184
EM_KURS	2.09E-17	2.424709	2.062976
ENM_KURS	9.89E-19	2.771533	2.022573

Based on the results of the multicollinearity test above, The Centered VIP value is below 10. Therefore, it can be concluded that this study is free from multicollinearity issues.

4.1.3 Heteroscedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	0.414708	Prob. F(5,34)	0.8352
Obs*R-squared	2.299235	Prob. Chi-Square(5)	0.8064
Scaled explained SS	0.878469	Prob. Chi-Square(5)	0.9718

Based on the results of the heteroscedasticity test above, The Obs*R-squared value is above 0,05. Therefore, it can be concluded that this research is free form heteroscedasticity issues.

4.1.4 Autocorelation Test

Based on the results of the hypothesis test, the Durbin-Watson statistic value is 1.8 or close to 2. Therefore, it can be concluded that this study is free from autocorrelation issues.



4.2 Hypothesis Test

4.2.1 Moderated Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.371034	1.261060	3.466160	0.0015
LOG(EM)	-0.043486	0.025218	-1.724384	0.0940
LOG(ENM)	0.208344	0.040084	5.197709	0.0000
LOG(KURS)	0.894462	0.141943	6.301539	0.0000
AR(1)	0.746041	0.169310	4.406369	0.0001
AR(2)	-0.447191	0.175323	-2.550676	0.0156
SIGMASQ	0.000649	0.000200	3.252563	0.0026
R-squared	0.948936	Mean dependent var	14.76592	
Adjusted R-squared	0.939652	S.D. dependent var	0.114169	
S.E. of regression	0.028047	Akaike info criterion	-4.133394	
Sum squared resid	0.025958	Schwarz criterion	-3.837840	
Log likelihood	89.66788	Hannan-Quinn criter.	-4.026531	
F-statistic	102.2090	Durbin-Watson stat	1.800939	
Prob(F-statistic)	0.000000			

Based on the management results above, the following conclusions can be drawn: • If the value of oil and gas exports (EM) and non-oil and gas exports (ENM) and the Exchange Rate (KURS) are constant, then economic growth is 4.371034%. • If the value of oil and gas exports (EM) increases by 1 million USD, the economic growth rate will decrease by 0.043486%. • If the value of non-oil and gas exports (ENM) increases by 1 million USD, the economic growth rate will increase by 0.208344%. • If the Indonesian Rupiah Exchange Rate (KURS) increases by 1%, economic growth will increase by 0.894462%.

4.2.2 Moderating Regression of the Interaction Variables of Oil and Gas Exports & Exchange Rate

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.94486	1.036342	16.35064	0.0000
LOG(EM_KURS)	-0.122614	0.058309	-2.102819	0.0422

Based on the moderation regression equation above, it can be concluded that: • The Exchange Rate variable can weaken the relationship between the Oil and Gas Export variable and Indonesia's Economic Growth.

4.2.3 Moderating Regression of Interaction Variables Non-oil and Gas Exports & Exchange Rate

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.75719	0.845014	15.09702	0.0000
LOG(ENM_KURS)	0.098466	0.041861	2.352204	0.0243
AR(1)	0.985921	0.046501	21.20223	0.0000
SIGMASQ	0.000603	0.000198	3.040479	0.0044

Based on the results above, the interpretation obtained is as follows: • The Exchange Rate variable can strengthen the relationship between the Non-Oil and Gas Export variable and Indonesia's Economic Growth.



4.2.4 Test t

- Oil and Gas Exports Based on the table above, it is obtained that the oil and gas export variable has a coefficient value of -0.043486 and a probability value of 0.0940 with an alpha value of 10%. This indicates that the oil and gas export variable has a negative and significant effect on Indonesia's economic growth from 2014 to 2023.
- Non-Oil and Gas Exports Based on the table above, it is found that the coefficient value of the non-oil and gas export variable is 0.208344 and the probability value is 0.000 with an alpha value of 5%. This indicates that the non-oil and gas export variable has a positive and significant effect on Indonesia's economic growth from 2014 to 2023.
- Moderating Variable of Exchange Rate Based on the moderation regression table above, the coefficient value of the exchange rate variable is 0.894462 and the probability value is 0.0000 with an alpha value of 5%. It can be concluded that the exchange rate variable has a positive significant effect on Indonesia's economic growth from 2014 to 2023. This result represents the direct relationship of the exchange rate variable to economic growth.
- Interaction Variable of Oil and Gas Exports_Exchange Rate Based on the moderation regression table above, the coefficient value of this variable is -0.122614. The probability value for the moderation variable of oil and gas exports and the exchange rate is 0.0422 with an alpha value of 5%. This indicates that the exchange rate variable can weaken the relationship between oil and gas exports and Indonesia's economic growth from 2014 to 2023.
- Interaction Variable of Non-Oil and Gas Exports_Exchange Rate Based on the moderation regression table above, the coefficient value of this variable is 0.098466. The probability value for the moderation variable of non-oil and gas exports and the exchange rate is 0.0243 with an alpha value of 5%. The exchange rate variable has a significant positive effect as a moderation of non-oil and gas exports on economic growth. It can be concluded that the exchange rate variable can strengthen the relationship between non-oil exports and Indonesia's economic growth.

4.2.5 F Test

Based on the Prob. F value in the table above which is 0.0000. It can be concluded that simultaneously (Oil and Gas Exports, Non-oil and Gas Exports, Exchange Rate, Moderation of Oil and Gas Exports, Moderation of Non-oil and Gas Exports) have a significant effect on Indonesia's Economic Growth in the years 2014-2023.

4.2.6 Determination Coefficient

To determine the coefficient of determination in the study, you can look at the Adjusted R-Squared value. In this study, the Adjusted R-Squared value is 0.939652. This means that overall, the independent variables have an effect of 93.9652% on the dependent variable.

DISCUSSION

4.3.1 The Influence of Oil and Gas Exports on Economic Growth

The significant negative influence on oil and gas exports has several arguments. First, there is a decline in oil production in several regions of Indonesia. This is caused by field factors, namely aging oil wells (Atmaja et al., 2016). By the end of August 2024, there are data on 545 oil and gas drilling wells. This data shows a decrease of about 16% compared to the



previous year (Mela Syaharani, 2024). Second, the volatility of world oil prices affects the revenues of oil and gas export players. Fluctuating world oil prices can disrupt the trade balance for oil and gas exporting countries (Edy Soesanto et al., 2025). When world oil prices fall, it will decrease the trade balance of oil and gas exporting countries. Added to this is the current geopolitical situation in regions like the Middle East which is heating up. This can exacerbate or create uncertainty in world oil prices. Therefore, oil and gas exports are very sensitive to global geopolitical conditions. It has a significant negative impact on Indonesia's economic growth.

According to Ramadhan et al. (2018), the oil and gas sector tends to be capital-intensive with limited connections to other economic sectors. As a result, oil and gas exports create less of a chain effect for the development of MSMEs or large-scale employment absorption. In contrast, non-oil and gas exports, which involve large-scale labor such as agriculture, services, manufacturing, tourism, and others, significantly contribute to Indonesia's economic growth. When oil and gas exports are booming, it can impact the appreciation of the exchange rate of the rupiah (Edy Soesanto et al., 2024b). This makes non-oil and gas exports less competitive in the international market. This phenomenon can be seen in the decline of Indonesia's manufacturing sector contribution from 29% of GDP in 2000 to 20% in 2021 when Indonesia focused on oil and gas exports. This phenomenon is referred to as the Dutch Disease, which is the phenomenon where the exploitation of natural resources influences the economy.

4.3.2 The Influence of Non-Oil and Gas Exports on Economic Growth

Non-oil and gas exports include several sectors such as agriculture, manufacturing, non-oil and gas mining, services, and tourism. This will create economic diversification in Indonesia. Diversification is the variety of businesses in goods and services aimed at avoiding risks associated with product or business singularity (Nur Jamal Shaid, 2023). With many types of products that can be produced and are capable of being exported, the country's economy is strong enough to face economic uncertainties.

Non-oil and gas exports have the potential to create extensive job opportunities for the workforce in Indonesia. There is widespread labor absorption, particularly in manufacturing exports (Ministry of Finance, 2022). Data shows a 27% (year-on-year) growth in manufacturing exports in 2022. Therefore, the Indonesian government's program is currently focused on enhancing the downstream processing of resources. This is due to the vast market share that includes countries around the world, presenting opportunities for non-oil and gas products such as manufacturing. Manufacturing products that have the potential to add high value in the future include nickel, iron, steel, and others.

The unemployment rate will continue to decline with the increase in job availability. However, it must be accompanied by improvements in human resource competencies such as enhancing the quality of education and training. This presents a great opportunity for Indonesia to solve or at least reduce economic problems. One of the economic issues often encountered in Indonesia is unemployment. The International Monetary Fund (IMF) projects the unemployment rate in Indonesia to be 5% in 2025 (Hasiana, 2025). This percentage makes Indonesia the country with the highest unemployment rate in Southeast Asia. Therefore, non-oil and gas export variables are needed to lower the unemployment rate in Indonesia.



4.3.3 The Influence of Exchange Rate Moderating Variables on Economic Growth

The depreciation of the rupiah exchange rate (the decline in the value of the rupiah against foreign currencies) increases the competitiveness of domestic products in international markets (Anggraeni Eka Sulistya et al., 2024). This is based on the reason that domestic production costs will become cheaper. This will impact the enhancement of Indonesia's export competitiveness in international markets. The prices of Indonesian export products will decrease/make them cheaper, which will boost global demand. Ultimately, this will contribute to the growth of Indonesia's economy.

According to (Aimon, 2024), a stable exchange rate plays a significant role in maintaining foreign capital flows. This will contribute to Indonesia's economic growth. Therefore, the government, through Bank Indonesia as the monetary authority, needs to make efforts to maintain the stability of the rupiah exchange rate. Efforts that can be undertaken include monetary policies in the form of planning and setting interest rates that are appropriate to economic conditions Indonesia's and global.

4.3.4 The Influence of Interaction Variables of Exchange Rates on Oil and Gas Exports on Economic Growth

Based on the results of the research analysis, it shows that strengthening the exchange rate variable, or in other words, the appreciation of the exchange rate actually reduces oil and gas export results. This will eventually impact the decrease in Indonesia's economic growth. This is in line with the Mundell-Fleming theory which states that the strengthening of the exchange rate will reduce export performance. This is due to the weakening of export competitiveness in the global market. In the end, this results in a decrease in the economic growth rate of Indonesia.

The increase in global oil and gas demand significantly influences the relationship between oil and gas exports and economic growth. Data shows that about 80% of global energy comes from oil and gas (Aprilia Ika, 2025). This proves that oil and gas are still needed by the global community. Oil and gas will continue to be produced to meet the needs of the global community. OPEC predicts that from 2022 to 2045, global oil demand will actually increase by 16%. Although renewable energy such as electricity has become one of the attractions for the public to be used as an energy source, such as household appliances, electric cars, electric motorcycles, and others.

The fluctuations in exchange rates can have significant positive potential depending on the economic structure of a country (Divka Avedish et al., 2024). When a country's economic structure is dominated by non-oil and gas exports, exchange rates significantly positively affect non-oil and gas exports. Indonesia is a country that is dominant in non-oil and gas exports. The quantity of this type of export is greater than that of oil and gas exports. This is due to the diversity of non-oil and gas exports, which allows for greater production output.

4.3.5 The Influence of Interaction Variables of Exchange Rates on Non-Oil Exports on Economic Growth

From the research and empirical data above, it is evident that the depreciation of the rupiah can enhance the competitiveness of Indonesia's non-oil and gas products. The strongest factor in increasing the competitiveness of non-oil and gas products is production cost. This is



because when the rupiah depreciates, domestic non-oil and gas production costs decrease. This is followed by an increase in the volume or quantity of non-oil and gas products in Indonesia due to economies of scale. The increase in non-oil and gas export supply, along with competitive prices, will impact the rise in national income. This will increase foreign exchange earnings. The variable of economic growth will also rise in line with the increase in a country's income.

However, the depreciation of the rupiah does not always have a positive impact. Policymakers or the government need to design monetary and fiscal policies that can balance other macro variables (Triani & Novianti Sari, 2018). In previous studies, the depreciation of the rupiah had a positive impact on increasing exports. However, other macro variables such as inflation would be negatively affected. This is in accordance with the theory of purchasing power parity, which explains that the depreciation of the exchange rate will increase the inflation rate of a country.

CONCLUSION

Economic growth is an important macroeconomic variable to study. This is because economic growth serves as one of the benchmarks for economic development. Additionally, economic growth is one of the indicators of the welfare of a country's society. This is due to the fact that an increase in economic growth signifies an increase in a country's national output. Therefore, the issue of economic growth in Indonesia is something that needs to be sought for solutions or ways out.

The following are the results of the research in this study: 1. Oil and gas exports have a significant negative impact on Indonesia's economic growth. 2. Non-oil and gas exports have a significant positive impact on Indonesia's economic growth. 3. The moderating variable of the exchange rate has a significant positive impact on Indonesia's economic growth. 4. The interaction variable of the Rupiah exchange rate can weaken the relationship between oil and gas exports and Indonesia's economic growth. 5. The interaction variable of the Rupiah exchange rate can strengthen the relationship between non-oil and gas exports and Indonesia's economic growth. 6. The coefficient of determination in this research is 93.96%.

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