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THE EFFECT OF EXCHANGE RATES, INFLATION, AND INTEREST RATES ON NON-OIL AND GAS EXPORTS IN INDONESIA 2005-2024

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Abstract

This study aims to analyze the effect of exchange rates, inflation, and interest rates on non-oil and gas exports in Indonesia in the short and long term during the period 2005 to 2024. The non-oil and gas export sector is an important pillar in maintaining the stability of the trade balance and national foreign exchange reserves. This study uses the Vector Error Correction Model (VECM) research method with stationary data at the second difference level. The results of the study indicate that (1) the exchange rate has a negative and significant effect on non-oil and gas exports in Indonesia in the long term, and does not significantly affect non-oil and gas exports in Indonesia in the short term; (2) inflation has a negative and significant effect on non-oil and gas exports in Indonesia in the long term, and does not significantly affect non-oil and gas exports in Indonesia in the short term; (3) interest rates have a positive and significant effect on non-oil and gas exports in Indonesia in the long term with a standard error of 10%, and does not significantly affect non-oil and gas exports in Indonesia in the short term. The implication of the study is that long-term exchange rate stability needs to be maintained. Exchange rate stability can increase the competitiveness of Indonesian export products in the international market. Inflation control must be ensured to be stable and manageable to maintain export competitiveness. Furthermore, the interest rate policy implemented should focus more on macroeconomic stability, such as controlling inflation and financial system stability, rather than directly targeting export growth.
Keywords: non-oil and gas exports, exchange rate, inflation, interest rate, var/vecm

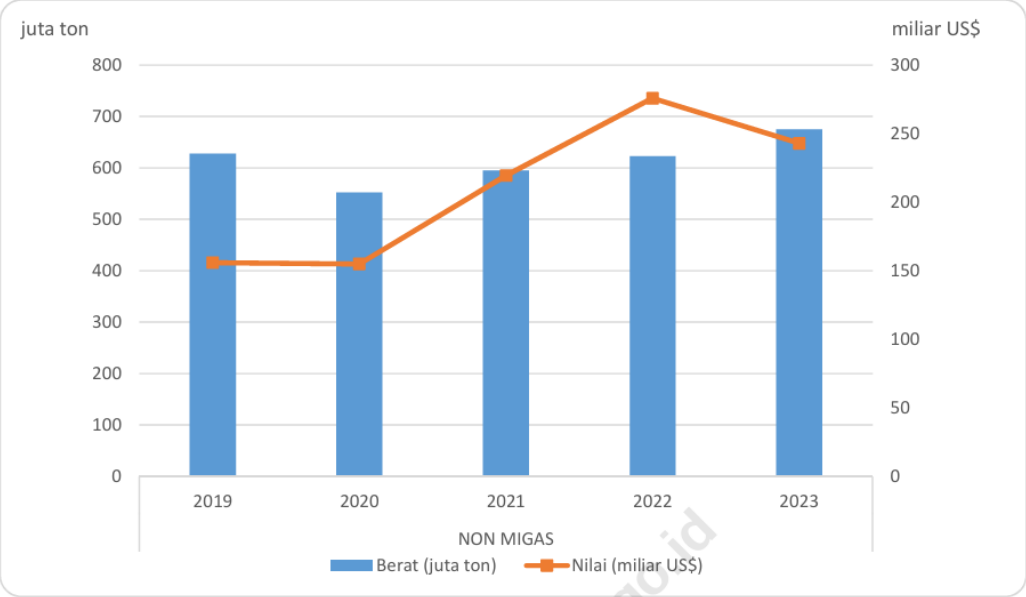
1. Introduction

Exports play a crucial role in international trade. Mohsen (2015) states that economic growth can be enhanced through the significant role of a country's exports. Exports have the potential to generate revenue for the country and foreign exchange that can be used to improve infrastructure. Export is the process of sending goods or basic products from one country to another in accordance with applicable laws. Export activity is an aspect of international trade that aims to stimulate domestic demand and create opportunities for other industries with greater potential. Increased export demand for any

type of commodity has a direct impact on a country's industrial development, creating a more conducive business climate. Furthermore, engaging in international market competition can familiarize countries with competition and improve their skills through the intense competition in international trade. (Rezandy & Yasin, 2022)

Based on data from Badan Pusat Statistik, Indonesia's exports are dominated by non-oil and gas exports. During the 2019-2023 period, Indonesia's non-oil and gas exports accounted for an average of 94.20 percent, while oil and gas exports accounted for an average of 5.80 percent.

Oil and gas exports have rebounded since 2020, driven by strengthening oil and gas prices, despite a decrease in net weight, as oil and gas production prioritizes meeting domestic demand. The non-oil and gas sector has also seen an upward trend in export value since 2020. This increase in non-oil and gas export value is due to increased exports of several leading commodities.



Picture 1. 1 Weight and Value of Non-Oil and Gas Exports 2019-2023

Source: Badan Pusat Statistik

Non-oil and gas exports fell 4.27 percent in 2019 to US$155.9 billion compared to the previous year. Throughout the 2019–2023 period, non-oil and gas exports experienced a decline, reaching a low of US$154.9 billion in 2020. They then rebounded sharply in 2022 to US$275.9 billion. However, in 2023, the value of non-oil and gas exports fell by 11.91 percent to US$242.9 billion. In terms of weight, the general trend in the weight of non-oil and gas exports tends to be in line with or follow the movement in

export value. Except for 2019 and 2023, when the value of non-oil and gas exports decreased, the weight of non-oil and gas exports showed increases of 9.81 percent and 8.39 percent, respectively. This indicates a decline in non-oil and gas export commodity prices.

By commodity type, non-oil and gas exports from 2019–2023 were dominated by processing industry commodities with an average contribution of 94.20%, mining commodities with an average contribution of 18.15%, and agriculture, forestry, and fisheries commodities, which tended to experience little change during 2019–2023. Throughout this period, exports of agricultural, forestry, and fisheries commodities only ranged from US$3.6 billion to US$4.7 billion, or an average equivalent of 2.08% of total non-oil and gas exports. Non-oil and gas export performance is heavily influenced by domestic and global macroeconomic conditions, including the rupiah exchange rate, inflation, and interest rates. These three variables play an interrelated and complex role in influencing the competitiveness of Indonesian export products in the international market. (Sumantri & Latifah, 2020)

An exchange rate is the price of one currency expressed in terms of another. The exchange rate is the price or value of a national currency measured in foreign currency when buying or shopping abroad. The exchange rate is included as one of the export factors because if the Rupiah weakens against the US Dollar, it will encourage exporters to export, thus increasing export volume. Conversely, if the Rupiah strengthens against the US Dollar, exporters will earn relatively smaller profits. This shows that the exchange rate has a significant impact on exporters' decisions regarding export activities and can affect the economy as a whole. (S. Silaban et al., 2023)

In addition to the exchange rate, inflation also impacts exports by affecting domestic prices. High inflation increases domestic prices, reducing the competitiveness of Indonesian products in the international market. This leads to a decline in export demand, especially if the export destination country has a lower inflation rate. Therefore, price stability is a crucial factor in supporting export sustainability. On the other hand, interest rates influence exports through financing and exchange rate channels. High interest rates tend to depress investment and increase production costs, ultimately reducing the production capacity of export goods. Furthermore, high interest rates attract foreign capital inflows into Indonesia, leading to exchange rate appreciation and reducing export competitiveness. This research is expected to fill the gap in the existing literature and

provide a practical contribution in supporting the formulation of macroeconomic policies that can improve national export competitiveness in the global market.

2. Literature Review

2.1 Mundell-Fleming Theory

The Mundell-Fleming theory explains that in an open economy, interest rates and exchange rates can be influenced by both monetary and fiscal policies. This theory states that a country must implement a tight fiscal policy if it wants to maintain low interest rates. Conversely, implementing a loose fiscal policy will increase interest rates. This theory also states that to intervene in the market, a country must use foreign exchange reserves if it wants to maintain exchange rate stability. (Mankiw, 2010)

2.2 Marshal-Learner Condition Theory

The Marshall-Lerner Condition states that if the total elasticity of demand for imports and exports (in absolute value) with respect to the real exchange rate is greater than one, a real devaluation or depreciation will improve the trade balance. The Marshall-Lerner Condition states that increases in volume will always exceed changes in value. Consequently, even if the value of imports increases and the value of exports decreases, increases in export volume and decreases in import volume will prevail, resulting in an overall improvement in the trade balance. Because of the tendency toward lower elasticities in the short run, the Marshall-Lerner Condition is likely to be met only in the medium to long run.

2.3 J-Curve Theory

Krugman states that the J-Curve is the assumption that exchange rate depreciation will improve a country's trade balance in the long run. This phenomenon occurs when exchange rate depreciation causes the trade balance to worsen in the short run. However, in the long run, the trade balance will improve and improve permanently. One reason for the J-Curve phenomenon is that most global trade is governed by pre-arranged contracts, thus preventing rapid changes in export and import volumes following exchange rate changes.

2.4 Theory of Elasticity of Demand

Alfred Marshall's theory of demand elasticity is a quantitative measure that describes how much a change in demand for a commodity is affected by changes in price

or other factors. The law of demand elasticity states that when the price of a particular good falls, the quantity demanded increases. Conversely, when the price of a particular good rises, the quantity demanded decreases. This is caused by several factors, such as the availability of the good, consumer income, interest, and demand for the good.

2.5 Purchasing Power Parity Theory

In purchasing power parity theory, exchange rate changes occur to reflect differences in inflation between two countries. As a result, consumers will have the same purchasing power to buy domestic and foreign goods. (Madura, 2009) This means that the difference in inflation between two countries will cause a change in the exchange rate, so that consumers' purchasing power for domestic goods will be equal to their purchasing power for imported goods. The theory of purchasing power parity essentially functions to calculate the equilibrium exchange rate in situations where a country experiences a balance of payments imbalance. If one country's inflation rate rises relative to another country's inflation rate, the demand for foreign currency decreases as a result of the increase in export prices.

2.6 Interest Rate Parity Theory

Interest rate parity occurs when the discount or premium on the forward exchange rate equals the difference between domestic and foreign interest rates (Madura, 2009). When the domestic interest rate is greater than the foreign interest rate, this indicates an expected appreciation of the foreign exchange rate or depreciation of the domestic exchange rate. (Mishkin, 2017). This means that investing abroad will not be more profitable than investing domestically, or the returns on investment in both countries will be the same.

2.7 Non-oil and Gas Exports

Exports are a vital component of international trade and play a crucial role in the economic growth of developing countries. Exports are defined as the activity of sending goods and services from a domestic customs area to a foreign customs area in accordance with applicable regulations. Exports can occur if a country has trade relations with another country. (Feryanto, 2018)

Export commodities are crucial to the Indonesian economy, as they generate foreign exchange. Indonesia's diverse natural resources and abundant resources are a key advantage. Indonesia's export commodities are highly diverse. These commodities are divided into two categories: oil and gas and non-oil and gas exports. Oil and gas exports

include crude oil, refined oil products, and natural gas. Non-oil and gas exports include agricultural, fishery, mining, industrial, and other products.

2.8 Exchange Rate

The exchange rate of a country's currency against another country's currency is called the foreign exchange rate. (Astuti, 2019). The rupiah exchange rate is the comparison between the value or price of the rupiah and other currencies. Currency exchange rates are constantly changing. These changes are caused by changes in the supply and demand of currency. (Astuti, 2019). Changes in currency values can affect the value of commodities and assets because they can affect the amount of cash flow received from exports or companies, as well as the amount of cash outflow used to pay for imports.

2.9 Inflation

According to the quantity theory, inflation is caused by an increase in the money supply and psychological factors, namely public expectations of rising prices caused by inflation. If people have money and the expectation that prices will not rise becomes a reality, they will prefer to save their money rather than spend it. Consequently, public demand for goods decreases.

Conversely, if public expectations that prices will not rise do not materialize, people will be encouraged to buy goods. However, this can accelerate price increases. However, this can be prevented if the public is educated about inflation. (Kartini, 2019)

2.10 Interest Rate

Suhatmi & Sulistyowati (2022) define interest rate as a specific percentage calculated from the principal loan that must be repaid by the debtor within a specified period and received by the creditor as compensation. Meanwhile, Thian (2021) stated that interest rate is the price paid to customers who hold deposits, or to banks by customers who hold loans. Therefore, it can be concluded that interest rate is a cost that must be paid by borrowers.

3. Hypotheses Development

3.1 The Effect of Exchange Rates on Non-Oil and Gas Exports

The exchange rate influences export value because changes in the exchange rate affect the price of exported goods. When a country's exchange rate (exporter) appreciates

(strengthens), the cost of producing goods and services increases, which then causes partner countries (importers) to reduce spending, thus decreasing export value.

Previous research by Rezandy & Yasin (2022) found that the exchange rate variable significantly influences export value, with a coefficient value of -0.764679, indicating a negative effect.

Ha_1 : The exchange rate has a significant negative impact on non-oil and gas exports in Indonesia.

3.2 The Effect of Inflation on Non-Oil and Gas Exports

The domestic economy and trade relations with foreign countries will experience problems due to high inflation. Productive activities will become unprofitable due to continuously rising costs. Productive investment will be reduced, and the level of economic activity will decline. The country's goods will be unable to compete in the international market due to price increases caused by high inflation, resulting in a decline in exports. (Sukirno, 2022). Based on research conducted by R. Silaban & Nurlina (2022), the results show that inflation has a negative and significant effect on non-oil and gas exports.

Ha_2 : The inflation has a significant negative impact on non-oil and gas exports in Indonesia.

3.3 The Effect of Interest Rate on Non-Oil and Gas Exports

Mankiw (2010) argues that lower interest rates encourage people to borrow more from banks. This credit is then used for investment, leading to increased production and exports, and vice versa. Previous research by Putri & Jayadi (2023) found that interest rates negatively affected non-oil and gas exports in destination countries from 2010 to 2019.

Ha_3 : The interest rate has a negative impact on non-oil and gas exports in Indonesia.

4. Method, Data, and Analysis

4.1 Unit of Analysis, Population and Sample

The unit of analysis in this study is the Indonesian population. The population in this study is data on the exchange rate against the US dollar, inflation, interest rates, and non-oil and gas exports in Indonesia. The sample in this study is data from a limited population, namely data from 2005–2024.

4.2 Data Collection Technique

Data collection can be obtained through two sources: primary and secondary sources. Primary sources are those that directly provide data to data collectors, while

secondary sources are those that do not directly provide data to data collectors (Sugiyono, 2018). In this study, the source used was a secondary source, with data obtained from the Central Statistics Agency.

4.3 Analysis Techniques

In this study, the analysis technique used is Vector Autoregression (VAR) and furthermore, if the data has cointegration, it is recommended to use the Vector Error Correction Model (VECM).

5. Result

5.1 Stationarity Test

The stationarity test is the initial step in conducting a VAR/VECM test. This is done to determine whether the data used is stationary or not.

Table 5.1 ADF Test Results At Data Level

Variable	Prob.	Conclusion
ENM	0.9709	Not Stationary
INF	0.0049	Stationary
NT	0.1709	Not Stationary
SB	0.0769	Not Stationary

Source: Output Eviews 13, 2026

Based on the results of the ADF test at the level level, it can be seen that only the inflation variable has a probability value smaller than 0.05, which means that the inflation data is stationary at the level level. Meanwhile, non-oil and gas exports, exchange rates, and interest rates have probability values greater than 0.05, which means the data is not stationary at the level level.

Table 5.2 ADF Test Results at First Difference

Variable	Prob.	Conclusion
ENM	0.1560	Not Stationary
INF	0.0000	Stationary
NT	0.0000	Stationary
SB	0.0011	Stationary

Source: Output Eviews 13, 2026

Based on the results of the ADF test at the first difference level, it can be seen that the exchange rate, inflation, and interest rate variables have a probability value of less than 0.05, which means that the exchange rate, inflation, and interest rate data are stationary at

the first difference level. Meanwhile, non-oil and gas exports have a probability value greater than 0.05, which means the data is not stationary at the first difference level.

Table 5.3 ADF Test Results at Second Difference

Variable	Prob.	Conclusion
ENM	0.0000	Stationary
INF	0.0000	Stationary
NT	0.0000	Stationary
SB	0.0000	Stationary

Source: Output Eviews 13, 2026

Based on the results of the ADF test at the second difference level, it can be seen that the variables of non-oil and gas exports, exchange rates, inflation, and interest rates have a probability value of less than 0.05, which means that the data on non-oil and gas exports, exchange rates, inflation, and interest rates are stationary at the second difference level so that they can meet the stationarity requirements.

5.2 Optimal Lag Test

Determining the lag is important because it determines the time period for a variable's influence on other variables. Determining the optimum lag is used to test causality and estimate the VAR/VECM model. The optimum lag test is performed by determining the lag with the smallest statistical information value.

Table 5.4 Optimal Lag Test Results

Lag	AIC	SC	HQ
0	116.0934	116.2189	116.1434
1	115.1173	115.7448*	115.3673
2	114.9567	116.0863	115.4069
3	114.4109	116.0425	115.0611
4	114.4373	116.5709	115.2876
5	113.7693*	116.4049	114.8196*

Source: Output Eviews 13, 2026

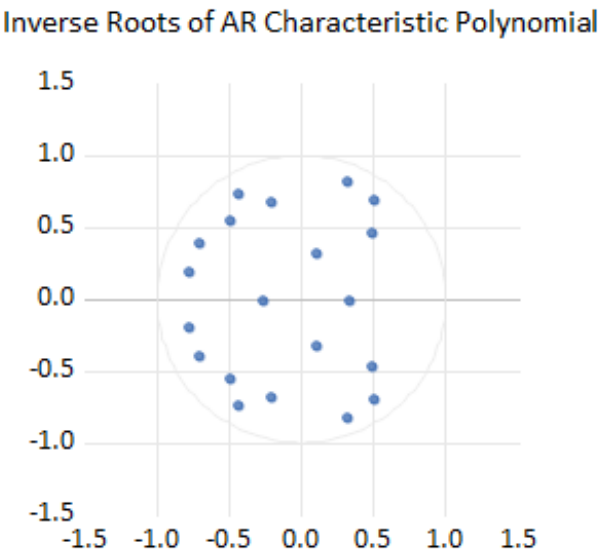
Based on the optimum lag test using the AIC, SC, and HQ approaches, the maximum lag is five. Based on the test results above, lag five can be concluded as the optimum lag. This is because lag five has the most asterisks. For the Granger causality test and the VAR/VECM estimation test, lag five is used.

5.3 Stability Test

Stability testing is performed to assess the stability of the VAR/VECM model estimates. This test determines whether the model used is stable or not.

Table 5.5 Stability Test Results

Modulus
0.875242
0.875242
0.858942
0.858942
0.855085
0.855085
0.809685
0.809685
0.802285
0.802285
0.743921
0.743921
0.716670
0.716670
0.677389
0.677389
0.331105
0.331105
0.324516
0.264327



Source: Output Eviews 13, 2026

Based on the test results above, it can be seen that no modulus value is more than one and all roots are in one circle, so it can be interpreted that the use of the model is stable.

5.4 Cointegration Test

To detect long-term stability, a cointegration test is performed. This test uses the Johansen Cointegration Test.

Table 5.6 Johansen Cointegration Test Results

Hypothesized No. of CE(s)	Trace Statistic	0.05 Critical Value	Prob.** Critical Value
None *	93.89185	47.85613	0.0000
At most 1 *	60.43174	29.79707	0.0000
At most 2 *	32.46775	15.49471	0.0001
At most 3 *	15.06509	3.841465	0.0001

Source: Output Eviews 13, 2026

The test results indicate that four variables are cointegrated, as indicated by the Trace Statistic being greater than the Critical Value. Therefore, it can be concluded that the variables in this study exhibit a cointegration relationship, reflecting the link between short-term dynamics and long-term equilibrium.

5.5 Granger Causality Test

Table 5.7 Granger Causality Test Results

Hypothesis Casual	Obs	Prob.	Conclusion
INF does not Granger Cause ENM	73	0.7718	*
ENM does not Granger Cause INF		1.07916	*
NT does not Granger Cause ENM	73	0.5001	*
ENM does not Granger Cause NT		0.36012	*
SB does not Granger Cause ENM	73	0.7723	*
ENM does not Granger Cause SB		0.66212	*
NT does not Granger Cause INF	73	0.0006	**
INF does not Granger Cause NT		1.60102	*
SB does not Granger Cause INF	73	0.0553	*
INF does not Granger Cause SB		0.76226	*
SB does not Granger Cause NT	73	0.0010	**
NT does not Granger Cause SB		2.17873	*

*)does not have influence relationship **)have influence relationship

Source: Output Eviews 13, 2026

To find out whether the variables influence each other in one direction or two directions, a causality test is carried out.

Based on the results of the Granger causality test above, it can be concluded that:

a. According to statistics, INF does not affect ENM because the probability value is 0.7718 > 0.05 and ENM does not affect INF because the probability value is 0.3807 > 0.05 so that there is no one-way or two-way relationship between the INF and ENM variables.
b. According to statistics, NT does not affect ENM because the probability value is 0.5001 > 0.05 and ENM does not affect NT because the probability value is 0.8738 > 0.05 so that there is no one-way or two-way relationship between the NT and ENM variables.
c. According to statistics, SB does not affect ENM because the probability value is 0.7723 > 0.05 and ENM does not affect SB because the probability value is 0.6535 > 0.05 so that there is no one-way or two-way relationship between the SB and ENM variables.
d. According to statistics, NT has an effect on INF because the probability value is 0.0006 < 0.05, while INF has no effect on NT because the probability value is 0.1731

> 0.05, so there is a one-way relationship (unidirectional causality) between NT and INF.

e. According to statistics, SB does not affect INF because the probability value is 0.0553 > 0.05 and INF does not affect SB because the probability value is 0.5805 > 0.05 so that there is no one-way or two-way relationship between the SB and INF variables.

f. According to statistics, SB has an effect on NT because the probability value is 0.0010 < 0.05, while NT has no effect on SB because the probability value is 0.0679> 0.05, so there is a one-way relationship (unidirectional causality) between SB and NT.

5.6 VECM Model Estimation

Next is the VECM model estimation test. The VECM model estimation can be seen below.

Table 5.8 Long Term VECM Model Estimation

Variables	Coefficient	t-Statistic	Conclusion
D(ENM(-1),2)	1.00000		
D(INF(-1),2)	-0.022551	-4.57977	Significant
D(NT(-1),2)	-0.010471	-2.90729	Significant
D(SB(-1),2)	0.018595	1.72920	Significant at 10% error level
C		2547.558	

Source: Output Eviews 13, 2026

Based on the VECM estimation results above, the following VECM equation is obtained:

ENM = 2547.558 + ENM(-1) – 0.010471NT(-1) – 0.022551INF(-1) + 0.018595SB(-1) + et

Based on statistical testing, the endogenous variables are influenced by the exogenous variables. This is demonstrated by comparing the t-statistic and t-table values at a significance level of α = 5%, with 76 degrees of freedom (df), resulting in a t-table value of 1.991673.

The VECM model is the result of the implications of the VECM estimation in the form of a linear equation, which shows that:

a. In the long term, the VECM results show that the coefficient value is -0.022551 and the t-statistic INF is 4.57977 > 1.991673. Therefore, Ha_2 is accepted, meaning that INF has a negative and significant effect on ENM.

b. In the long term, the VECM results show that the coefficient value is -0.010471 and the t-statistic NT is 2.90729 > 1.991673. Therefore, Ha_1 is accepted, meaning NT has a negative and significant effect on ENM.

c. In the long term, the VECM results show that the coefficient value is 0.018595 and the t-statistic SB 1.72920 < 1.991673. Therefore, Ha_3 is rejected, meaning SB has a positive and insignificant effect on ENM. However, if using a 10% error rate (0.10), the t-table value is 1.665151, the t-statistic SB 1.72920 > 1.665151. Therefore, Ha_3 is accepted with a significance level of 10%, meaning SB has a positive and significant effect on ENM.

Table 5.9 Short Term VECM Model Estimation

Endogenous Variables	Exogenous Variables	Coefficient	t-Statistic	Conclusion
ENF	CointEq1	-0139459	-0.96277	Not Significant
	D(ENM(-1),3)	-0.860503	4.74804	Significant
	D(ENM(-2),3)	-0.590803	2.80919	Significant
INF	CointEq1	104.9977	3.66964	Significant
	D(NT(-1),3)	0.930739	3.39559	Significant
	D(NT(-2),3)	0.757425	2.92103	Significant
	D(SB(-1),3)	-1.475874	-3.17465	Significant
	D(SB(-2),3)	-1.367100	-3.06351	Significant
	D(SB(-3),3)	-1.045826	-2.61393	Significant
NT	CointEq1	61.95151	1.69471	Not Significant
	D(ENM(-1),3)	-103.4128	-2.26102	Significant
	D(ENM(-2),3)	-147.4360	-2.77785	Significant
	D(INF(-1),3)	1.685905	2.37460	Significant
	D(INF(-2),3)	1.569872	2.67996	Significant
	D(INF(-3),3)	1.200738	2.79352	Significant
	D(INF(-4),3)	0.591271	2.01734	Significant
	D(SB(-5),3)	0.801249	3.22468	Significant
SB	CointEq1	-4.343368	-0.52995	Not Significant
	D(NT(-2),3)	-0.151479	-2.03946	Significant
	D(NT(-3),3)	-0.149409	-2.11185	Significant

Source: Output Eviews 13, 2026

Based on the short term estimation results, assuming the endogenous variable is non-oil and gas exports (ENM), it can be concluded that:

a. The movement of non-oil and gas exports is now influenced by itself in the 1st lag. This is indicated by the t-statistic value of 4.74804 > 1.991673, which means it is significant at a significance level of 5% with a coefficient of -0.860503, so it can be concluded that non-oil and gas exports have a negative and significant effect on itself.

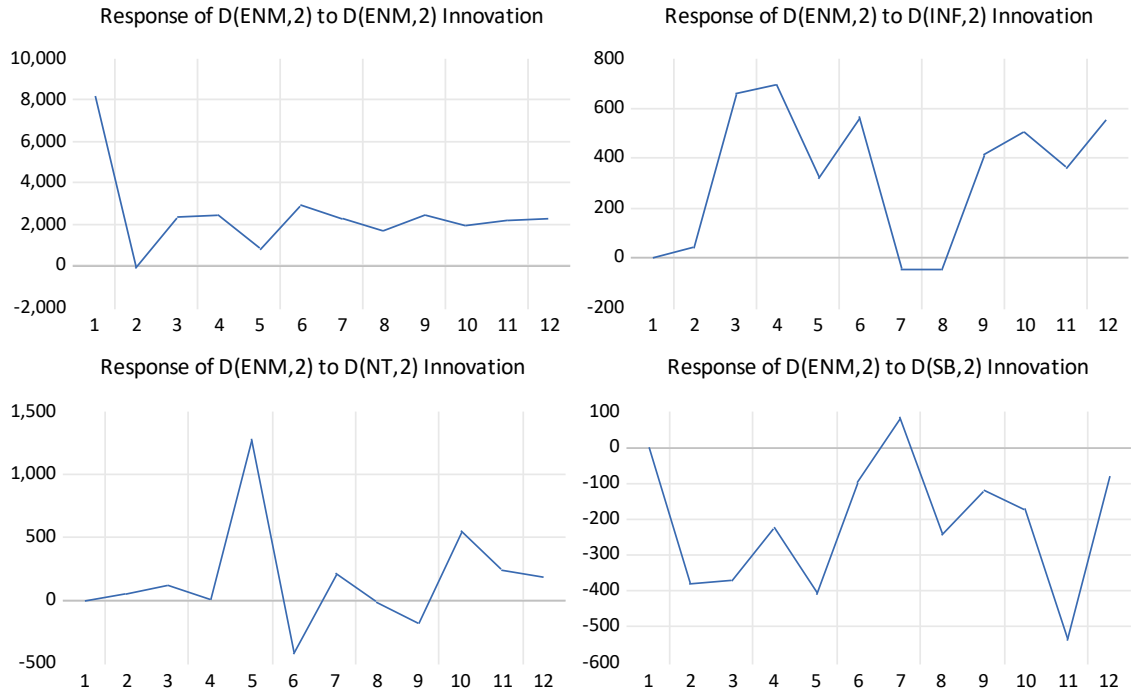
b. The movement of non-oil and gas exports is now influenced by itself in the 2nd lag. This is indicated by the t-statistic value of 2.80919 > 1.991673, which means it is

significant at a significance level of 5% with a coefficient of -0.590803, so it can be concluded that non-oil and gas exports have a negative and significant effect on themselves.

c. The movement of non-oil and gas exports is currently not affected by the exchange rate (NT), inflation (INF), and interest rates (SB). This is indicated by the t-statistic value which is smaller than the t-table value, which means it is not significant at a significance level of 5%. Therefore, it can be concluded that the exchange rate, inflation, and interest rates do not have a significant effect on non-oil and gas exports in the short term.

5.7 Impulse Response Function

The Impulse Response Function (IRF) is used to analyze the response of endogenous variables to shocks that occur in exogenous variables, so that the impact can be observed for several periods into the future.



Picture 5.1 IRF Test Results Up to Period 12

Source: Output Eviews 13, 2026

The following is the IRF output on the VECM model.

a. The response of the Non-Oil and Gas Export variable to shocks to the variable itself shows a fluctuating and positive response.

b. The response of the Non-Oil and Gas Export variable to shocks in the inflation variable shows a fluctuating response and tends to be positive.

c. The response of the Non-Oil and Gas Export variable to shocks in the exchange rate variable shows a fluctuating response and tends to be positive.

d. The response of the Non-Oil and Gas Export variable to shocks in the interest rate variable shows a fluctuating response and tends to be negative.

5.8 Variance Decomposition

This test is conducted to show the proportion of shock contribution from each variable to the non-oil and gas export variable in the current period and future periods.

Table 5.10 Variance Decomposition Test Result

Period	D(ENM,2)	D(INF,2)	D(NT,2)	D(SB,2)
1	100.0000	0.000000	0.000000	0.000000
2	99.77584	0.002622	0.002938	0.218595
3	98.98912	0.602314	0.020268	0.388301
4	98.40019	1.159972	0.018626	0.421207
5	96.12263	1.250094	2.014116	0.613158
6	95.96286	1.474015	2.003560	0.559563
7	96.13370	1.393746	1.937362	0.535189
8	96.19171	1.352585	1.877480	0.578225
9	96.21002	1.434834	1.797732	0.557416
10	95.82736	1.609577	2.001030	0.562035
11	95.60087	1.649666	1.961998	0.787469
12	95.51771	1.828424	1.898433	0.755437

Source: Output Eviews 13, 2026

Based on the results of the Variance Decomposition analysis in the table above, it can be concluded that fluctuations in Indonesia's non-oil and gas exports during the observation period were largely influenced by shocks from the variables themselves (self-shocks). This indicates that non-oil and gas export performance has strong persistence, with past export performance being the primary determinant of current export performance.

6. Discussion

6.1 The Impact of Exchange Rates on Non-Oil and Gas Exports in Indonesia

The short-term VECM estimation results show that the exchange rate has no significant effect on Indonesia's non-oil and gas exports. Meanwhile, the long-term VECM estimation results show that the exchange rate has a negative and significant effect on Indonesia's non-oil and gas exports. These results align with international trade theory, particularly the Marshall-Lerner Condition. This theory states that changes in exchange rates will affect the trade balance through the relative price mechanism. When

the exchange rate depreciates, domestic goods become cheaper in the international market, thereby increasing export demand. Conversely, exchange rate appreciation makes domestic goods more expensive for foreign buyers, thus suppressing export demand. This aligns with research conducted by Igir et al. (2020) which states that the exchange rate variable does not have a significant effect on non-oil and gas exports in Indonesia in the short term. Furthermore, these results are also in line with research conducted by Muharram (2023) which states that the exchange rate does not have a significant effect on non-oil and gas exports in Indonesia in the short term and has a significant negative effect in the long term.

6.2 The Impact of Inflation on Non-Oil and Gas Exports in Indonesia

The short-term VECM estimation results show that inflation has no significant effect on Indonesia's non-oil and gas exports. Meanwhile, the long-term VECM estimation results show that inflation has a negative and significant effect on Indonesia's non-oil and gas exports. This is in line with the Purchasing Power Parity (PPP) theory and price competitiveness. PPP theory states that differences in inflation rates between countries will affect a country's price competitiveness. When domestic inflation is higher than that of trading partner countries, domestic goods tend to be more expensive in the international market. This condition reduces export competitiveness, resulting in a decline in export volume. This is in line with research by Silaban & Nurlina (2022) which states that inflation has no significant effect on non-oil and gas exports in Indonesia in the short term. However, in the long term, inflation has a negative and significant effect.

6.3 The Impact of Interest Rates on Non-Oil and Gas Exports in Indonesia

The short-term VECM estimation results show that interest rates have no significant effect on non-oil and gas exports in Indonesia. Meanwhile, the long-term VECM estimation results show no significant effect at the 5% margin of error, but at the 10% margin of error, interest rates have a positive and significant effect on non-oil and gas exports in Indonesia. These results align with the theory of monetary policy transmission mechanisms within the Interest Rate Channel framework and its relationship to exchange rates and investment. A surge in interest rates typically triggers capital inflows, which can encourage exchange rate appreciation. This appreciation generally has a negative impact on exports because domestic goods become more expensive on the international market. However, on the other hand, interest rates can also

influence exports through financing channels and economic stability. These results align with research by Mishkin (2017) In his book, The Economics of Money, Banking and Financial Markets, he explains that the transmission of monetary policy to the real sector requires time (lag), so that the influence of interest rates on economic variables such as exports is not always visible in the short term.

7. Conclusion, Limitations, and Suggestions

7.1 Conclusion

Based on the research results above, it can be concluded that the exchange rate and inflation variables do not significantly influence non-oil and gas exports in Indonesia in the short term. However, in the long term, the exchange rate and inflation variables have a negative and significant effect on non-oil and gas exports in Indonesia. Meanwhile, the interest rate variable does not significantly influence non-oil and gas exports in the short term. However, in the long term, with a 10% error rate, the interest rate variable has a positive and significant effect on non-oil and gas exports in Indonesia. Overall, the results of this study strengthen the theory that the influence of macroeconomic variables on exports is dynamic, indirect, and more visible in the long term than in the short term. The government and monetary authorities such as Bank Indonesia need to maintain long-term exchange rate stability, as it has been proven to have a significant effect on non-oil and gas exports. Controlling inflation is also very important to maintain export competitiveness. The interest rate policy implemented by Bank Indonesia should be more focused on macroeconomic stability, such as controlling inflation and financial system stability, rather than directly targeting export increases.

7.2 Limitations and Suggestions

Based on the research framework and objectives, the author formulated several limitations in this study. The independent variables, which influence the dependent variable, have a relatively small impact on the dependent variable due to the presence of other factors. Furthermore, this study uses aggregate non-oil and gas export data, thus failing to capture differences in characteristics between export sectors or commodities.

Future research is expected to use more disaggregated data, for example by sector or type of non-oil and gas export commodity. This way, it will be possible to identify which sectors are most sensitive to changes in macroeconomic variables such as exchange rates, inflation, and interest rates. Future research is also recommended to more explicitly

incorporate external factors, such as global economic conditions, the exchange rates of trading partner countries, and international trade policies. This is crucial given that exports are significantly influenced by external conditions beyond domestic control.

REFERENCES

Astuti, W. P. (2019). *Ekspor dan Impor* (Susilo, Ed.). Penerbit Mutiara Aksara.

Badan Pusat Statistik. (2024, June 5). *Analisis Komoditas Ekspor, 2019-2023, Sektor Pertanian, Kehutanan, dan Perikanan; Sektor Industri Pengolahan; dan Sektor Pertambangan dan Lainnya*. https://www.bps.go.id/publication/2024/07/05/6ffc824be8e6f0857ec815a2/analisis-komoditas-ekspor-2019-2023-sektor-pertanian-kehutanan-dan-perikanan-sektor-industri-pengolahan-dan-sektor-pertambangan-dan-lainnya.html

Feryanto, A. (2018). *Mengenal Ekspor dan Impor*. Penerbit Cempaka Putih.

Igir, E. N., Rotinsulu, D. C. H., & Niode, A. (2020). Analisis Pengaruh Kurs Terhadap Ekspor Non Migas Di Indonesia Periode 2012:Q1 - 2018:Q4. *Jurnal Berkala Ilmiah Efisiensi*, *20*(02), 93–102.

Kartini, S. (2019). *Mengenal Inflasi* (Ade, Ed.). Penerbit Mutiara Aksara.

Madura, J. (2009). *Manajemen Keuangan Internasional* (4th ed.). Erlangga.

Mankiw, N. G. (2010). *Marcroeconomics* (7th ed.). Worth Publisher.

Mishkin, F. S. (2017). *The Economics of Money, Banking, and Financial Markets*. Pearson.

Mohsen, A. S. (2015). Effect of Export and Investment on The Economic Growth in Syria. *International Journal of Management, Accounting and Economics*, *Vol. 2*(No. 6).

Muharram, Z. (2023). *Determinan Ekspor Nonmigas Di Indonesia*.

Putri, O. P., & Jayadi, A. J. (2023). Pengaruh Inflasi, Tingkat Suku Bunga, dan Nilai Tukar Terhadap Ekspor Non-Migas Indonesia Tahun 2010 - 2019. *MUC Tax Journal*, *Vol. 1*(No. 1), 61–69. https://doi.org/10.61261/muctj.v1i1.24

Rezandy, A., & Yasin, A. (2022). Pengaruh Nilai Tukar, Inflasi, dan Pendapatan Nasional Terhadap Ekspor Nonmigas Indonesia. *E-Jurnal Ekonomi Dan Bisnis Universitas Udayana*, *Vol. 11*(No. 10), 1245–1255. https://doi.org/10.24843/EEB.2022.v11.i10.p08

Silaban, R., & Nurlina. (2022). Pengaruh Nilai Tukar dan Inflasi Terhadap Ekspor Non Migas Di Indonesia. *Jurnal Samudra Ekonomika*, *Vol. 6*(No. 1), 50–59. https://doi.org/https://doi.org/10.33059/jse.v6i1.5123

Silaban, S., Aadilah, H., & Matondang, K. (2023). Influence of Rupiah Exchange Rate on Indonesia's Economic Growth: Literature Study. *Journal of Business Management and Economic Development*, *1*(02), 123–131. https://doi.org/10.59653/jbmed.v1i02.48

Sugiyono. (2018). *Metode Penelitian Kuantitatif, Kualitatif Dan R&D*. Alfabeta.

Suhatmi, E. C., & Sulistyowati, E. (2022). *Ekonomi Makro*. Pustaka Baru Pres.

Sukirno, S. (2022). *Makroekonomi Teeori Pengantar*. PT. Raja Grafindo Persada.

Sumantri, F., & Latifah, U. (2020). The Influence Of Interest Rate, Money Circulation, Inflation, And CPI Against Export And Import In Indonesia 2012-2018. *Jurnal Ekonomi Pembangunan*, *17*(2), 108–118. https://doi.org/10.22219/jep.v17i2.10242

Thian, A. (2021). *Manajemen Perbankan* (Aldila, Ed.). Penerbit Andi.