



Analysis Of The Effect Of Domestic Crude Oil Production, Exchange Rate, And Thailand's Per Capita Income On Indonesia's Crude Oil Exports To Thailand (2010-2024)

Taufany Hidayat Ramadhani

Development Economics Study Program, Faculty of Economics and Business, Universitas
Pembangunan Nasional Veteran Jawa Timur

Email: ¹⁾ taufanyramadhani@gmail.com

How to Cite :

Ramadhani, T, H. (2026). Analysis Of The Effect Of Domestic Crude Oil Production, Exchange Rate, And Thailand's Per Capita Income On Indonesia's Crude Oil Exports To Thailand (2010-2024). EKOMBIS REVIEW: Jurnal Ilmiah Ekonomi Dan Bisnis, 14(4). DOI: <https://doi.org/10.37676/ekombis.v14i4>

ARTICLE HISTORY

Received [12 May 2026]

Revised [20 October 2026]

Accepted [22 October 2026]

KEYWORDS

Crude Oil Exports, Domestic
Production, Exchange Rate,
Thailand Income.

***This is an open access article
under the [CC-BY-SA](#) license***



ABSTRACT

This study examines the effect of domestic crude oil production, exchange rate fluctuations, and Thailand's per capita income on Indonesia's crude oil exports to Thailand during the 2010–2024 period. The research applies a quantitative approach using annual time-series data obtained from official institutions, including the Central Statistics Agency, World Bank, and Trading Economics. The analysis employs the Ordinary Least Squares (OLS) method to estimate the relationship between the independent variables and crude oil exports. The findings reveal that domestic crude oil production and exchange rates have a positive and significant effect on Indonesia's crude oil exports to Thailand. Higher production levels increase export supply availability, while Rupiah depreciation enhances export competitiveness in international markets. In contrast, Thailand's per capita income shows a positive but statistically insignificant effect on export performance. Simultaneously, all independent variables significantly influence crude oil exports. This study contributes to the literature on bilateral energy trade by providing empirical evidence regarding the determinants of Indonesia's crude oil export performance in the Southeast Asian region amid declining domestic oil.

INTRODUCTION

Advancements in information systems, logistics, and transportation technologies have substantially altered the dynamics and structure of international trade. These advancements allow countries to access and expand export markets more effectively, increasing the intensity of global competition. In this context, countries are required to optimize their comparative advantages while adapting to modern trade practices. For Indonesia, such conditions open

opportunities to enhance the export performance of natural resource-based commodities, particularly crude oil, despite ongoing structural challenges in the domestic energy sector.

The oil industry continues to hold a crucial position in the global economy due to its role as a primary energy source supporting industrial production, transportation, and electricity generation. Although the transition toward renewable energy is gradually progressing, fossil fuels, especially crude oil, remain dominant in global energy consumption (Galecka and Pyra, 2024). In Indonesia, however, the oil sector is experiencing a persistent decline in production, largely driven by aging oil fields, limited exploration activities, and high investment risks in upstream operations (Mitakda, Budiharjo S and Lufti W, 2024). At the same time, rising domestic energy demand further exacerbates the imbalance between production capacity and consumption needs (Landapa, 2024).

Despite the decline in domestic crude oil production, Indonesia continues to export crude oil to several countries, including Thailand. Export outcomes cannot be explained solely by production levels, as they are also driven by external demand and prevailing macroeconomic circumstances. Thailand, as one of the major oil-importing countries in Southeast Asia, shows growing energy demand driven by economic expansion and increasing income levels (Jakob and Overland, 2025). This condition positions Thailand as a strategic market for Indonesia's crude oil exports within the regional trade network (Pemayun, Widanta and Putu, 2024).

Several factors are believed to influence Indonesia's crude oil exports to Thailand. From the supply perspective, domestic crude oil production represents the availability of resources for export. From a macroeconomic standpoint, exchange rate movements play an important role in shaping export competitiveness, where currency depreciation can make exports relatively more attractive in international markets. On the demand side, Thailand's per capita income reflects purchasing power and energy consumption capacity, which may increase demand for imported crude oil.

Previous studies have explored various determinants of crude oil exports, including exchange rates, global oil prices, inflation, and economic growth (Imamov and Hamroyev, 2025; Li, Adam and Deng, 2025)(Imamov and Hamroyev, 2025). However, most of these studies adopt an aggregate approach and do not specifically examine the bilateral trade relationship between Indonesia and Thailand. In addition, limited research simultaneously considers declining domestic oil production alongside export performance while incorporating the economic capacity of the destination country. This gap highlights the need for a more comprehensive analysis integrating both supply-side and demand-side factors.

Accordingly, this study aims to investigate how domestic crude oil production, exchange rate fluctuations, and Thailand's per capita income influence Indonesia's crude oil exports to Thailand from 2010 to 2024. This study employs a quantitative approach using time-series data and multiple linear regression analysis through the Ordinary Least Squares (OLS) method. The findings are expected to contribute to the literature on bilateral energy trade and provide policy insights regarding export and energy strategies amid declining domestic crude oil production.

LITERATURE REVIEW

International Trade Theory

International trade theory explains that trade between countries occurs due to differences in resource endowments, productivity, and comparative advantage. Classical theories such as comparative advantage and the Heckscher-Ohlin model state that countries tend to specialize in producing goods that use their abundant factors of production while importing goods that require scarce resources (Salvatore, 2023). However, modern trade theory emphasizes that international trade is also influenced by macroeconomic conditions, global demand dynamics, and financial variables, particularly in strategic commodities such as crude oil. Export demand theory further explains that export performance is determined by external

demand conditions, where price competitiveness (exchange rate) and income levels of trading partners play important roles in influencing export flows (Khan, Ali and Kamal, 2020; Fahlevi *et al.*, 2024). This theoretical framework forms the basis for analyzing crude oil export performance, which is affected by both supply-side and demand-side factors.

Domestic Crude Oil Production

Domestic crude oil production refers to the total output of crude oil extracted within a country's territory during a certain period. This production reflects the availability of natural resources and the effectiveness of upstream oil and gas activities, including exploration and extraction processes. In Indonesia, crude oil production has shown a declining trend due to mature oil fields, limited new discoveries, and high operational costs in upstream sectors (Kementrian ESDM *et al.*, 2023). This decline indicates that domestic production capacity plays a crucial role in determining the availability of exportable surplus, where higher production levels potentially increase export capacity, while declining production may constrain export performance.

Exchange Rate

The exchange rate between the Indonesian Rupiah (IDR) and the United States Dollar (USD) represents the relative price of domestic currency against foreign currency. It reflects the value of Indonesia's currency in international markets and serves as an important indicator of macroeconomic stability. In international trade, exchange rates influence export competitiveness by affecting relative prices of goods in foreign markets. A depreciation of the Rupiah (weaker currency) makes Indonesian goods relatively cheaper abroad, potentially increasing export demand, while appreciation reduces competitiveness. Therefore, exchange rate movements are considered a key macroeconomic variable in explaining export performance, particularly in commodity-based trade such as crude oil (Ismail, Yuliadi and Berliana, 2025).

Thailand Per Capita Income

Thailand's per capita income refers to the average income earned per person in Thailand within a specific period, commonly used as an indicator of economic welfare and purchasing power. It reflects the overall economic capacity of the country and is closely related to consumption levels, including energy demand. Higher per capita income generally indicates stronger purchasing power and higher demand for imported goods, including crude oil. In the context of international trade, income levels in importing countries are a key determinant of import demand, where rising income leads to increased energy consumption and dependence on external energy suppliers.

Crude Oil Export

Crude oil exports refer to the sale and shipment of unrefined petroleum products from one country to another for commercial purposes. These exports are influenced by production capacity, global demand, price conditions, and international trade agreements. Crude oil is considered a strategic commodity due to its essential role in energy supply chains for transportation, industry, and electricity generation. In global markets, crude oil trade is often priced using international benchmarks, making its export performance sensitive not only to domestic supply conditions but also to global market dynamics and external demand structures.

The Effect of Domestic Crude Oil Production on Indonesia's Crude Oil Exports to Thailand

Domestic crude oil production is expected to have a positive relationship with crude oil exports because higher production increases the availability of surplus output that can be allocated to foreign markets. When domestic production increases, export capacity also tends to rise, assuming domestic consumption remains relatively stable. In Indonesia's case, declining

production may limit export potential due to reduced supply availability. Empirical studies confirm that production variables significantly affect crude oil export performance, particularly in resource-based commodities (Pemayun, Widanta and Putu, 2024; Lestari, 2025). Research using Indonesian crude oil data shows that production has a positive and significant effect on export volume, although its magnitude depends on global demand conditions and macroeconomic stability (Pemayun, Widanta and Putu, 2024). Therefore, domestic crude oil production remains a fundamental supply-side determinant of export performance.

H1: Domestic crude oil production has a positive effect on Indonesia's crude oil exports to Thailand.

The Effect of Exchange Rate on Indonesia's Crude Oil Exports to Thailand

Exchange rate movements are expected to influence export performance through price competitiveness channels. A depreciation of the Indonesian Rupiah against the USD reduces the relative price of Indonesian goods in international markets, making exports more competitive. Conversely, appreciation may reduce export attractiveness. However, in crude oil trade, the effect of exchange rates may be weakened due to global pricing mechanisms and long-term contracts. Empirical evidence shows mixed results regarding exchange rate effects on exports. Some studies find a significant relationship between exchange rate movements and export performance, while others report insignificant or even negative effects depending on commodity structure and estimation methods (Pemayun, Widanta and Putu, 2024; Sari, 2024). For example, research on Indonesian crude oil exports shows that exchange rates may have a negative and insignificant effect due to pricing rigidities in global oil markets (Lestari, 2025). This indicates that exchange rate effects in energy commodity trade are highly context-dependent.

H2: The exchange rate has a positive effect on Indonesia's crude oil exports to Thailand.

The Effect of Thailand's Per Capita Income on Indonesia's Crude Oil Exports to Thailand

Thailand's per capita income is expected to have a positive relationship with crude oil imports from Indonesia. Higher income levels reflect stronger economic activity and increased energy consumption, leading to greater demand for crude oil as a key input for transportation and industrial production. As an energy-importing country with limited domestic production capacity, Thailand relies heavily on crude oil imports to meet its domestic energy needs. Recent empirical studies support that GDP per capita in importing countries significantly affects crude oil export demand. For instance, research on Indonesia's crude oil exports shows that GDP per capita growth in trading partner countries has a positive effect on export flows (Auliani and Purnomo, 2025). This confirms that income level is a critical demand-side determinant in energy trade.

H3: Thailand's per capita income has a positive effect on Indonesia's crude oil exports to Thailand.

METHODS

A quantitative research method is applied in this study, focusing on numerical data analysis and statistical techniques to explore the relationships between variables. This approach is grounded in the positivist paradigm, where hypotheses are tested using measurable data and statistical methods (Luthfi, 2023). The quantitative approach is appropriate because this study aims to measure the causal relationship between macroeconomic variables and export performance, which requires objective and statistical validation. Similar approaches are widely used in empirical trade and energy economics research because they allow hypothesis testing and model estimation based on observable data (Wooldridge, 2016; Gujarati, 2019).

The study uses annual time-series data covering a 15-year observation period from 2010 to 2024. Since this research utilizes macro-level secondary data, no sampling technique is applied. The data represent a census of available annual observations rather than a sampled subset of a population. Therefore, the unit of analysis in this study is country-level macroeconomic time-series data, specifically Indonesia-Thailand crude oil trade relationships. This type of time-series design is commonly used in export and energy studies because it captures long-term structural relationships between macroeconomic variables (Daglish *et al.*, 2021).

This research is based on secondary data gathered from dependable sources, including the Indonesian Central Statistics Agency (BPS), Trading Economics, and World Bank databases. The variables analyzed consist of crude oil exports as the dependent variable (million USD), domestic crude oil production (barrels), exchange rate (IDR/USD), and Thailand's per capita income (USD). The use of secondary macroeconomic data is justified because it ensures data reliability, comparability across time, and consistency in measurement, which is essential in econometric analysis of international trade flows.

Data collection is conducted using a documentation technique by gathering published statistical data from official institutions and relevant databases. Supporting literature such as peer-reviewed journals and academic books is also utilized to strengthen the theoretical foundation of the study. Since this research relies entirely on publicly available datasets, the study is fully replicable, meaning that other researchers can reproduce the analysis using the same variables, time period, and data sources.

In this research, the researcher acts as the main instrument in collecting, selecting, and analyzing the data. This research utilizes a multiple linear regression model estimated through the Ordinary Least Squares (OLS) approach. The OLS method is selected because it is the most efficient and unbiased estimator under classical linear regression assumptions and is widely used in economic export analysis (Wooldridge, 2016). The analysis is performed using EViews 12 to determine how the independent variables affect the dependent variable. The model can be written as follows:

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

Where:

Y: crude oil exports

X₁: domestic crude oil production

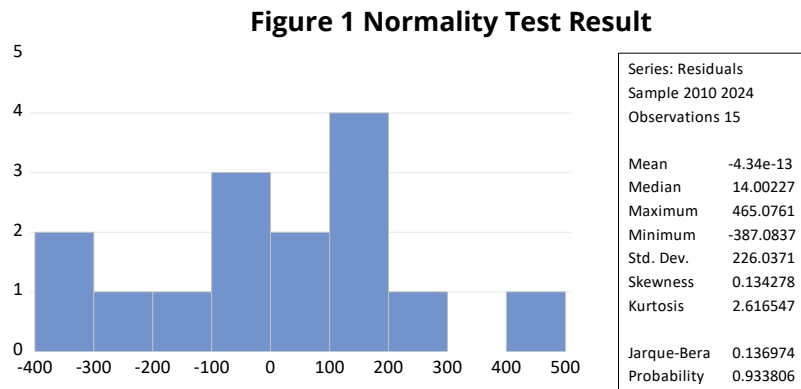
X₂: the exchange rate

X₃: Thailand's per capita income.

To validate the regression model, several classical diagnostic tests are applied, namely normality, multicollinearity, heteroskedasticity, and autocorrelation tests. The Jarque-Bera test is used to assess data normality, while multicollinearity is detected using the Variance Inflation Factor (VIF). The presence of heteroskedasticity is examined through the White test, and autocorrelation is analyzed using the Breusch-Godfrey test. Moreover, hypothesis testing is conducted using the coefficient of determination (R²), F-statistic, and t-statistic. The R² reflects the model's ability to explain variations in the dependent variable, the F-test evaluates the overall significance of the model, and the t-test measures the partial influence of each independent variable (Ghozali, 2018; Gujarati, 2019).

RESULTS

Normality Test



The purpose of the normality test is to verify whether the dataset used in the regression analysis follows a normal distribution pattern. The Jarque-Bera test result shows a probability value of 0.933806, which is above the 5% significance level. Hence, it can be inferred that the data are normally distributed, and the model meets the required normality assumption.

Multicollinearity Test

Table 1. Multicollinearity Test Result

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	3780127.	871.9728	NA
X1	1.505404	226.5727	4.995169
X2	4566.330	179.6121	5.459970
X3	27155.59	274.3620	4.193966

Source: Eviews Output, 2025

The multicollinearity test aims to identify the presence of strong correlations among independent variables. The findings reveal that all independent variables have Variance Inflation Factor (VIF) values below the threshold of 10. This outcome implies that the model is free from multicollinearity issues, meaning that all variables can be jointly analyzed without compromising the reliability of the estimation results.

Heteroskedasticity Test

Table 2. Heteroskedasticity Test Result

Heteroskedasticity Test: White

Null hypothesis: Homoskedasticity

F-statistic	4.688685 Prob. F(9,5)	0.0518
Obs*R-squared	13.41096 Prob. Chi-Square(9)	0.1449
Scaled explained SS	5.829360 Prob. Chi-Square(9)	0.7569

Source: Eviews Output, 2025

This test aims to identify whether the residuals maintain a consistent variance or display heteroskedastic behavior. Based on the White test results, the Chi-Square probability value is 0.1449, which exceeds 0.05. This suggests that the model does not experience heteroskedasticity, indicating that the residuals are homoscedastic.

Autocorrelation Test**Table 3. Autocorrelation Test Result**

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	0.263393	Prob. F(2,9)	0.7742
Obs*R-squared	0.829430	Prob. Chi-Square(2)	0.6605

Source: Eviews Output, 2025

This test aims to identify whether residual values are correlated over time. Based on the Breusch-Godfrey test, the probability value is 0.6605, which is above the 5% significance level. Hence, the model does not exhibit autocorrelation issues.

Multiple Linear Analysis**Table 4. Least Squares Test Results**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6777.049	1944.255	-3.485680	0.0051
X1	5.380852	1.226949	4.385555	0.0011
X2	202.1696	67.57462	2.991797	0.0123
X3	56.96487	164.7895	0.345683	0.7361
R-squared	0.666121	Mean dependent var		494.8331
Adjusted R-squared	0.575063	S.D. dependent var		391.1875
S.E. of regression	255.0042	Akaike info criterion		14.14362
Sum squared resid	715298.5	Schwarz criterion		14.33243
Log likelihood	-102.0771	Hannan-Quinn criter.		14.14160
F-statistic	7.315348	Durbin-Watson stat		2.289973
Prob(F-statistic)	0.005728			

Source: Eviews Output, 2025

Based on Table 4.8, the multiple linear regression equation can be formulated as follows:

Where:

Y represents Indonesia's crude oil exports to Thailand

X₁ represents domestic crude oil production

X₂ represents exchange rate

X₃ represents Thailand's per capita income.

The regression results can be interpreted as follows:

- The constant value of -6777 indicates that when domestic crude oil production, exchange rate, and Thailand's per capita income are assumed to remain constant, Indonesia's crude oil exports to Thailand would decrease by 6777 units. This negative intercept reflects the baseline condition of exports in the absence of changes in the independent variables.
- The regression coefficient of domestic crude oil production (X₁) is 5.380 with a probability value of 0.0011, which is lower than the significance level of 0.05. This result indicates that domestic crude oil production has a positive and statistically significant effect on Indonesia's crude oil exports to Thailand. The coefficient implies that a 1% increase in domestic crude oil production is associated with an increase of 5.380% in crude oil exports, assuming other variables remain constant.

- c. The regression coefficient of the exchange rate variable (X_2) is 202.1 with a probability value of 0.0123, which is below the 0.05 significance level. This finding shows that the exchange rate has a positive and significant effect on Indonesia's crude oil exports to Thailand. It implies that a 1% increase in the exchange rate is associated with an increase of 202.1% in crude oil exports, *ceteris paribus*.
- d. The regression coefficient of Thailand's per capita income (X_3) is 56.96 with a probability value of 0.7361, which exceeds the significance level of 0.05. This indicates that Thailand's per capita income does not have a statistically significant effect on Indonesia's crude oil exports to Thailand. Although the coefficient shows a positive direction, the effect is not statistically strong enough to explain variations in export performance during the observation period.

Hypothesis Test

Test of Coefficient of Determination (R^2)

Table 5. Coefficient of Determination Test Result (R^2)

R-squared	0.666121
Adjusted R-squared	0.575063

Source: Eviews Output, 2025

An Adjusted R-Square value of 0.575063 suggests that around 57.5% of the variability in Indonesia's crude oil exports to Thailand is captured by the model, with the remaining 42.5% being influenced by factors beyond the scope of this research.

F Test

Table 6. F Test Result

F-statistic	7.315.348
Prob(F-statistic)	0.005728

Source: Eviews Output, 2025

The F-statistic of 7.315348, accompanied by a probability value of 0.005728 (less than 0.05), indicates that the independent variables simultaneously have a statistically significant impact on Indonesia's crude oil exports to Thailand.

T Test

Table 7. T Test Result

Variable	t-Statistic	Prob.
C	-3.485.680	0.0051
Domestic Crude Oil Production	4.385.555	0.0011
Exchange Rate	2.991.797	0.0123
Thailand Per Capita Income	0.345683	0.7361

Source: Eviews Output, 2025

The partial test results show that domestic crude oil production and the exchange rate significantly affect crude oil exports, as indicated by probability values below 0.05. Conversely, Thailand's per capita income does not have a significant effect, as its probability value exceeds the 0.05 threshold.

The empirical findings indicate that domestic crude oil production, the exchange rate, and Thailand's per capita income jointly have a significant impact on Indonesia's crude oil exports to Thailand, as evidenced by the F-test results. This suggests that, when considered together, these independent variables contribute to explaining variations in export performance

over the 2010-2024 period. Based on the partial test (t-test), domestic crude oil production and exchange rates significantly and positively affect Indonesia's crude oil exports to Thailand. In contrast, Thailand's per capita income is not statistically significant in explaining export variations.

DISCUSSION

The Effect of Domestic Crude Oil Production, Exchange Rate, and Thailand's Per Capita Income on Indonesia's Crude Oil Exports to Thailand

Based on the simultaneous significance test presented in Table 5, the Prob (F-statistic) value is 0.005728, which is lower than the significance level of 0.05. This result indicates that the alternative hypothesis (H_{a1}) is accepted. In other words, the independent variables consisting of domestic crude oil production, exchange rate, and Thailand's per capita income simultaneously have a significant effect on Indonesia's crude oil exports to Thailand during the 2010-2022 period. These findings suggest that the combined interaction of production capacity, currency movements, and Thailand's economic conditions plays an important role in determining the performance of Indonesia's crude oil exports.

The Effect of Domestic Crude Oil Production on Indonesia's Crude Oil Exports to Thailand

The regression results show that the t-statistic value for domestic crude oil production is 4.385555 with a probability value of 0.0011. Since the calculated t-value is greater than the t-table value ($4.385555 > 1.78229$) and the probability value is lower than the significance level of 0.05 ($0.0011 < 0.05$), domestic crude oil production is proven to have a statistically significant effect on Indonesia's crude oil exports to Thailand. This finding indicates that higher domestic crude oil production increases the availability of exportable supply, thereby encouraging export growth in international markets. This result is consistent with previous empirical studies which found that production capacity positively and significantly influences export performance, particularly in resource-based commodities. Research conducted by (Pemayun, Widanta and Putu, 2024) revealed that domestic crude oil production has a positive and significant impact on Indonesia's crude oil export volume. These findings support the theory that production capacity is one of the main determinants of export supply in international trade. Therefore, H1 stating that domestic crude oil production has a positive effect on Indonesia's crude oil exports to Thailand is accepted.

The Effect of Exchange Rate on Indonesia's Crude Oil Exports to Thailand

The regression results show that the exchange rate variable obtained a t-statistic value of 2.991797 with a probability value of 0.0123. Since the calculated t-value is greater than the critical t-table value ($2.991797 > 1.78229$) and the probability value is lower than the significance level of 0.05 ($0.0123 < 0.05$), the exchange rate variable is proven to have a statistically significant effect on Indonesia's crude oil exports to Thailand. This finding indicates that exchange rate fluctuations play an important role in determining export competitiveness in international markets. A depreciation of the Rupiah against the US Dollar tends to increase export performance because Indonesian products become relatively cheaper in foreign markets.

This result is consistent with previous empirical studies that found a positive and significant relationship between exchange rates and export performance. Research conducted by (Pemayun, Widanta and Putu, 2024) revealed that exchange rate movements significantly influence Indonesia's crude oil export activities, particularly through changes in international price competitiveness. Similar findings were also reported by (Sari, 2024), which concluded that exchange rate depreciation contributes positively to export growth in commodity-based sectors. Accordingly, H2 stating that the exchange rate has a positive effect on Indonesia's crude oil exports to Thailand is accepted.

The Effect of Thailand Per Capita Income on Indonesia's Crude Oil Exports to Thailand

Based on the regression results, the t-statistic value for Thailand's per capita income is 0.345683 with a probability value of 0.7361. The calculated t-value is lower than the critical t-table value ($0.345683 < 1.78229$), while the probability value exceeds the significance level of 0.05 ($0.7361 > 0.05$). These findings indicate that Thailand's per capita income does not have a statistically significant effect on Indonesia's crude oil exports to Thailand during the observation period. Although the regression coefficient shows a positive direction, statistically the effect is not strong enough to explain fluctuations in crude oil export performance.

This finding differs from several previous studies which suggest that income levels in importing countries generally contribute positively to export demand. For example, research conducted (Auliani and Purnomo, 2025) found that macroeconomic indicators, including income growth in trading partner countries, positively influence export performance in the energy sector. Similarly, (Khan, Ali and Kamal, 2020) explained that higher income levels tend to increase import demand because economic expansion is usually followed by rising energy consumption. However, in the context of this study, Thailand's per capita income may not significantly affect Indonesia's crude oil exports due to the possibility that Thailand imports crude oil from multiple supplier countries, thereby reducing dependence on Indonesian crude oil specifically. Therefore, H3 stating that Thailand's per capita income has a positive effect on Indonesia's crude oil exports to Thailand is rejected because the relationship is not statistically significant.

CONCLUSION

Based on the empirical findings, domestic crude oil production and exchange rate movements positively contribute to Indonesia's crude oil exports to Thailand. Higher production levels increase the availability of exportable supply, while the depreciation of the Rupiah enhances export competitiveness by making Indonesian crude oil relatively cheaper in international markets. These findings are consistent with the theory of comparative advantage proposed by David Ricardo, which explains that countries tend to export commodities in which they possess production advantages and resource availability. In addition, the positive effect of exchange rates supports export demand theory, which states that currency depreciation increases export competitiveness by lowering the relative price of domestic goods in international markets. Previous empirical studies have also emphasized the importance of production capacity and price competitiveness in determining export performance. In contrast, Thailand's per capita income does not significantly influence crude oil exports, suggesting that Thailand's import decisions are driven more by energy demand stability, supplier diversification, and industrial consumption requirements rather than solely by changes in income levels.

LIMITATION

This study has several limitations that should be acknowledged when interpreting the findings. First, the research only uses annual time-series data covering the period from 2010 to 2024, resulting in a relatively limited number of observations. The restricted sample size may affect the statistical power of the regression model and limit the ability to capture more complex fluctuations in Indonesia's crude oil export performance.

Second, this study focuses solely on three independent variables, namely domestic crude oil production, exchange rate, and Thailand's per capita income. In reality, crude oil exports are also influenced by various other factors such as global crude oil prices, international energy policies, geopolitical conditions, trade agreements, transportation costs, and global supply chain disruptions. The exclusion of these variables may limit the comprehensiveness of the model in explaining export behavior.

Third, the study specifically examines Indonesia's crude oil exports to Thailand, which means that the findings may not be fully generalized to other export destination countries with

different economic structures, energy demands, and trade policies. Thailand's crude oil import patterns may also be influenced by supplier diversification strategies and regional energy market dynamics that are beyond the scope of this research.

In addition, this study employs the Ordinary Least Squares (OLS) approach, which assumes linear relationships among variables. Although classical assumption tests have been conducted to ensure the reliability of the model, the use of OLS may not fully capture potential dynamic relationships or structural changes in the crude oil market over time.

Despite these limitations, this research still provides empirical evidence regarding the determinants of Indonesia's crude oil exports to Thailand and contributes to the literature on international trade and energy economics. Future studies are recommended to incorporate additional variables, broader country coverage, and more advanced econometric approaches in order to obtain a more comprehensive understanding of crude oil export performance.

REFERENCES

- Auliani, A. and Purnomo, D. (2025) "The Role of Macroeconomic Indicators and Global Oil Prices in Influencing Indonesia's Crude Oil Exports to South Korea," 4(8), pp. 5511–5518.
- Daglish, T. *et al.* (2021) "Pricing effects of the electricity market reform in Brazil," *Energy Economics*, 97.
- Fahlevi, M. *et al.* (2024) "The influence of information and communication technology on trade in developing countries and partners," *Cogent Business and Management*, 11(1), p. Available at: <https://doi.org/10.1080/23311975.2024.2320814>.
- Gałecka, A. and Pyra, M. (2024) "Changes in the Global Structure of Energy Consumption and the Energy Transition Process," *Energies*, 17(22). Available at: <https://doi.org/10.3390/en17225644>.
- Ghozali, I. (2018) *Aplikasi Analisis Multivariate dengan Program IBM SPSS 25*. 9th ed. Semarang: Badan Penerbit Universitas Diponegoro.
- Gujarati, D.N. (2019) *Linear Regression: A Mathematical Introduction*. Thousand Oaks: SAGE Publications.
- Imamov, N. and Hamroyev, H. (2025) "THE ROLE OF EXPORTS IN ECONOMIC GROWTH," *INTERNATIONAL MULTIDISCIPLINARY JOURNAL FOR RESEARCH & DEVELOPMENT*, 12(05), pp. 164–168.
- Ismail, S.H., Yuliadi, I. and Berliana, A. (2025) "The Relationship Between Exchange Rates and Sustainable Development: A Literatur Review," *Journal of Economics Research and Social Sciences*, 9(1), pp. 65–78. Available at: <https://doi.org/10.18196/jerss.v9i1.25801>.
- Jakob, M. and Overland, I. (2025) "Energy trade, emissions and import dependence in Southeast Asia," *npj Climate Action*, 4(1), pp. 1–7. Available at: <https://doi.org/10.1038/s44168-025-00312-8>.
- Kementrian ESDM *et al.* (2023) *Handbook Of Energy & Economic Statistics Of Indonesia 2023*.
- Khan, S., Ali, S. and Kamal, M.A. (2020) "Trade Liberalization Effects on Import Demand: The Pakistan Experience using Bilateral Trade Data," *South Asian Journal of Management Sciences*, 14(1), pp. 28–42. Available at: <https://doi.org/10.21621/sajms.2020141.02>.
- Landapa, S.I.I. (2024) "Pertumbuhan Ekonomi dan Konsumsi Energi : Pengaruhnya Terhadap 3 Negara Mayoritas Muslim dengan Emisi Karbon Tertinggi," *Jurnal Ilmiah Ekonomi Islam*, 10(03), pp. 3181–3185.

- Lestari, F.A.P. (2025) "Analysis of Crude Oil Price Determinants on Indonesia's Export Volume for the Period 1992 -2022," *Ilomata International Journal of Social Science*, 6(1), pp. 376–389. Available at: https://www.ilomata.org/index.php/ijss/article/download/1130/579/?utm_source=chatgpt.com.
- Li, X., Adam, R. and Deng, N. (2025) "Export-Led Growth Under the Digital Economy: Evidence from China's 31 Provinces," *Sustainability (Switzerland)*, 17(15), pp. 1–19. Available at: <https://doi.org/10.3390/su17157111>.
- Luthfi, U. (2023) "Pengaruh Kompetensi, Motivasi Kerja dan Lingkungan Kerja Terhadap Kedisiplinan Account Officer di Cabang Bandung Serta Dampaknya dalam Pencapaian Kinerja Karyawan di PT Permodalan Nasional Madani," *Journal of Economics and Business UBS*, 12(6), pp. 3959–3978. Available at: <https://doi.org/10.52644/joeb.v12i6.1400>.
- Mitakda, V.C., Budiharjo S, H. and Lufti W, E.D. (2024) "The Impact of Upstream Oil and Gas Investment on Petroleum Production in Indonesia," *Journal of Energy Research and Reviews*, 16(5), pp. 12–18. Available at: <https://doi.org/10.9734/jenrr/2024/v16i5349>.
- Pemayun, A.A.I.P.S., Widanta and Putu, A.A.B. (2024) "Determinants of Export Volume Oil Indonesian Raw Materials to Main Destination Countries," *International Journal of Economics and Management Sciences*, 1(4), pp. 357–365. Available at: <https://doi.org/10.61132/ijems.v1i4.339>.
- Salvatore, D. (2023) "Development With Dynamic Policy Simulations ☆," 45, p. 8938.
- Sari, V.K. (2024) "Analysis of Export determinants : Indonesian Case Analisis Determinan Ekspor : Kasus Indonesia," (36), pp. 1–22.
- Wooldridge, J.M. (2016) *Introductory Econometrics: A Modern Approach*. Boston: Cengage Learning.