

Blessing or Burden? Rethinking Natural Resources and Economic Growth in Emerging Markets

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ABSTRACT

Rapid globalization, environmental shifts, and economic volatility have renewed interest in growth drivers of emerging economies. This study investigates the long-run and short-run impacts of natural resources, financial development, and trade openness on economic growth in emerging market economies. Using a quantitative approach and panel data spanning from 1997 to 2021, the research covers ten emerging countries: Brazil, Russia, India, China, South Africa, Argentina, Indonesia, Mexico, Poland, and Turkey. Data were sourced from the World Bank, and the Autoregressive Distributed Lag (ARDL) model was employed to examine both short- and long-term dynamics. The empirical results reveal that natural resource rents negatively and significantly affect economic growth in both time horizons, indicating the persistence of the resource curse in these economies. Conversely, financial development and trade openness exhibit positive and significant effects on economic growth over the long and short run. The presence of cointegration confirms a stable long-run relationship among the variables. This study contributes to the literature by providing robust cross-country panel evidence supporting the notion that institutional and policy frameworks are critical in transforming natural resource wealth into sustainable growth. The findings imply that emerging markets must strengthen financial systems and pursue trade liberalization while implementing more effective governance of natural resources to mitigate their negative externalities and unlock long-term growth potential.

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1. Introduction

Economic growth is one of the key indicators used to measure the success of a country's development, especially in developing nations categorized as Emerging Markets. These countries possess unique characteristics, such as abundant natural resources, evolving dynamics of international trade, and ongoing efforts to enhance financial sector development (Ahmad & Aminu Zubairu, 2022; Udoinyang et al., 2024). In this context, the interaction between natural resource wealth, trade openness, and financial development has become an increasingly relevant topic for understanding sustainable economic growth. Several studies, such as those by (Kumar, 2024) and Dwumfour & Ntow-Gyamfi (2018), emphasize the importance of integrating natural resources and financial dimensions to support economic growth that is not only numerically high but also sustainable and inclusive.

The role of natural resources in economic development has long been debated. On the one hand, resource wealth can serve as a key driver for growth through exports and government revenue. On the other hand, overdependence on resource exploitation may result in what is

commonly referred to as the "resource curse," which can hinder long-term development (Dwumfour & Ntow-Gyamfi, 2018; Erdoğan et al., 2021). Findings by Lin & Yuan (2023) and Li & Du (2024) (2024) show that the impact of natural resources on growth depends heavily on institutional capacity and a country's ability to manage its resources efficiently and sustainably. Therefore, it is essential to examine more deeply how the total natural resource wealth contributes to economic growth in the context of Emerging Market economies.

Trade openness also serves as a key engine for enhancing productivity and efficiency in an economy. Open trade facilitates technology transfer, broader market access, and increased competitiveness of domestic industries (Banday et al., 2021; Halim & Moudud-Ul-Huq, 2024). Research by Aksenov et al. (2023) and Hoang et al. (2023) explains that trade integration between countries such as China and Russia, as well as shifts in global trade structures, have had a significant impact on regional economies. Other studies also confirm that open trade can improve total factor productivity and strengthen the position of developing countries in the global value chain (Wu et al., 2024). Nevertheless, the full benefits of trade openness can only be realized if supported by strategic and responsive trade policies that address global challenges.

On the other side, financial development plays an important role in improving resource allocation efficiency and promoting productive investment. As stated by Horvath et al. (2025) and Qamruzzaman et al. (2021), a well-developed financial sector provides broader access to financing for private sectors, enhances financial inclusion, and stimulates economic growth. Studies by Huang (2024) and Liao and Zeng (2023) also highlight that financial development combined with technological innovation can enhance economic resilience to external shocks. In Emerging Markets, building an inclusive and adaptive financial system is a critical element in achieving sustainable economic development.

However, despite the extensive literature on each of these factors—natural resources, trade openness, and financial development—there are still limited studies that explore their combined effects in the context of Emerging Markets. Most research focuses on the relationship between two variables, such as between FDI and trade openness (Banday et al., 2021; Pea-Assounga et al., 2025), or between financial development and economic growth (Mejia, 2023; Özkan et al., 2024). Thus, this study is important in addressing this gap by offering a more integrated and context-specific approach, while also providing broader policy implications for developing countries aiming to achieve inclusive and resilient economic growth.

The main objective of this study is to examine and analyze the long-run and short-run relationships between total natural resources, financial development, and trade openness on economic growth in Emerging Market countries. This research aims to provide a broader understanding of the patterns of economic growth occurring in these developing nations. The research questions of this study are formulated as follows: (1) What is the long-run and short-run effect of total natural resources on economic growth in Emerging Market countries? (2) Does financial development contribute to economic growth in both the long and short run in these countries? (3) Does trade openness have a significant impact on economic growth over the long and short term in Emerging Market countries?

These research questions serve as the foundation for developing the study's hypotheses and formulating the empirical model used in the analysis. The hypotheses of this study are formulated as follows:

- H1: There is a long-run and short-run relationship between Total Natural Resources, Financial Development, and Trade Openness and Economic Growth.
- H2: There is a long-run and short-run relationship between Total Natural Resources, Financial Development, and Trade Openness and Economic Growth.
- H3: There is a long-run and short-run relationship between Total Natural Resources, Financial Development, and Trade Openness and Economic Growth.

2. Method

Population and Research Sample

Quantitative research is a method that involves collecting and analyzing data based on numerical values and measurements. This approach aims to describe, explain, and test the relationships between variables through statistical analysis. The primary objective of quantitative research is to

obtain a clearer understanding of the research phenomenon by gathering data that is quantitatively measurable. This study examines the impact of Total Natural Resources, Financial Development, and Trade Openness on Economic Growth in emerging market countries, including Brazil, Russia, India, China, South Africa, Argentina, Indonesia, Mexico, Poland, and Turkey. A quantitative method is employed using panel data for the period 1997–2021 for each variable. The data used in this research are secondary and were obtained from the World Bank website. The World Bank is one of the largest development research institutions in the world and has a specialized department dedicated to providing advisory services to countries in areas such as finance, environment, education, and other sectors. This study applies a quantitative approach using the Autoregressive Distributed Lag (ARDL) technique for data analysis.

Research Variables

The dependent variable used in this study is Economic Growth (EG), which serves as a fundamental indicator of a country's development success by reflecting the expansion of goods and services production, industrial output, and infrastructure improvements. Economic growth is measured using real Gross Domestic Product (GDP) at constant 2015 prices, ensuring consistency and comparability across time and countries. As an essential macroeconomic indicator, GDP growth represents a nation's ability to mobilize and allocate resources efficiently to foster long-term welfare and productivity gains (Guo et al., 2022). The independent variables in this study include Total Natural Resources (NR), Financial Development (FD), and Trade Openness (TO). Natural resources encompass all environmental elements and components that can be utilized to satisfy both primary and secondary human needs. In this study, the focus is on abiotic or non-biotic natural resources, which are frequently exploited for economic purposes. The measurement of total natural resources incorporates key components such as oil rents (percentage of GDP), natural gas rents (USD), mineral rents (USD), and forest rents (USD), following a framework widely adopted in cross-country analyses (Dwumfour & Ntow-Gyamfi, 2018; Huang, 2024).

Financial development refers to the process by which a country enhances and expands its financial sector to improve access to credit and promote more efficient allocation of resources. The financial sector's advancement is particularly crucial in emerging markets where capital constraints and market imperfections often limit inclusive growth (Chishti & Sinha, 2022; Horvath et al., 2025). In this study, financial development is measured using private sector credit provided by commercial banks, as reported in the World Bank's financial development database. This indicator captures both the depth and institutional capacity of financial systems to support economic expansion and absorb macroeconomic shocks. The selection of this proxy aligns with previous studies that emphasize credit availability as a driver of productive investment, especially in transitional economies (Chen, 2025; Wu et al., 2024).

Trade openness, on the other hand, is reflected in the level of international trade activity as a share of GDP, signifying a country's integration into global markets. Higher trade openness is generally associated with increased efficiency, innovation, and consumer welfare due to heightened competition and access to diversified goods and services (Banday et al., 2021; Aksenov et al., 2023). It also facilitates technology transfer and foreign direct investment, thereby reinforcing growth dynamics in open economies. In this study, trade openness is measured by total trade in USD, as sourced from the World Bank. This measure has been consistently employed in empirical research on globalization and development to capture the extent to which nations benefit from international economic exchanges (Halim & Moudud-UI-Huq, 2024; Rahman, 2021). Collectively, these three independent variables are selected based on their theoretical and empirical relevance to economic performance in emerging markets.

Data Analysis Methods

The ARDL (Autoregressive Distributed Lag) method is one of the econometric techniques used to estimate linear regression models when analyzing long-run relationships among variables.

$$\ln GDP_{it} = c + \beta_1 \ln NR_{it} + \beta_2 \ln FD_{it} + \beta_3 \ln TO_{it} + V_t$$

GDP_{it} represents Gross Domestic Product at constant 2015 prices; NR_{it} denotes total natural resources; FD_{it} refers to financial development; and TO_{it} indicates trade openness. The subscript i represents the cross-sectional units, while t denotes the time series dimension. Meanwhile, the short-run ARDL model equation is formulated as follows.

$$\ln GDP_{it-1} = c + \sum_{i=1}^n \rho_1 \ln NR_{it-1} + \sum_{i=1}^n \rho_2 + \ln FD_{it-1} + \sum_{i=1}^n \rho_3 + \ln TO_{it-1} + V_t$$

The long-run ARDL model equation is presented as follows:

$$\ln GDP_{it} = c + \alpha_1 \ln NR_{it-1} + \alpha_2 \ln FD_{it-1} + \alpha_3 \ln TO_{it-1} + V_{t-1}$$

In the ARDL model equation presented, t represents the time period, capturing both short-run and long-run dynamics. Here, a_0, a_1, a_2, a_3 are the coefficients of the short-run variables, while, $\rho_0, \rho_1, \rho_2, \rho_3$ denote the long-run coefficients used in this study.

3. Results

Statistics Descriptive Analysis

The descriptive statistics presented in Table 1 display data for four variables: Economic Growth (EG), Natural Resources (NR), Financial Development (FD), and Trade Openness (TO). Overall, the average economic growth is recorded at 3.571, with a median value of 4.248. The lowest economic growth was observed at -13.126, occurring in Indonesia, while the highest was 13.635, recorded in China. The standard deviation of economic growth is 4.209, and the distribution exhibits a negative skewness of -0.881, indicating that the distribution is skewed to the left.

Table 1 Statistics Descriptive

| | EG | NR | FD | TO |
|--------------|-----------|-----------|-----------|-----------|
| Mean | 3.57 | 3.81 | 46.59 | 49.30 |
| Median | 4.24 | 2.59 | 40.71 | 48.29 |
| Maximum | 13.63 | 21.23 | 182.86 | 112.08 |
| Minimum | -13.12 | 0.13 | 9.50 | 16.43 |
| Std. Dev. | 4.20 | 4.00 | 33.79 | 17.73 |
| Skewness | -0.88 | 2.09 | 1.72 | 0.81 |
| Kurtosis | 4.41 | 7.33 | 6.20 | 4.04 |
| Jarque-Bera | 53.32 | 378.38 | 227.47 | 39.22 |
| Probability | 0.00 | 0.00 | 0.00 | 0.00 |
| Sum | 892.87 | 954.54 | 11463.17 | 12325.59 |
| Sum Sq. Dev. | 4413.02 | 3985.52 | 279756.5 | 78355.45 |
| Observations | 250 | 250 | 246 | 250 |

Source: Processed by Eviews, 2025.

The descriptive statistics also indicate that economic growth has an average of 3.82 percent, which reflects a relatively strong economic performance among emerging market countries experiencing rapid growth. Meanwhile, Natural Resources (NR) exhibit significant variability, with a mean of 3.8 and a standard deviation of 4, indicating considerable differences in natural resource endowments across countries. Financial Development (FD) shows an average of 46.5 with a standard deviation of 33.7, highlighting the crucial role of financial sector development in supporting the fast-paced economic growth of emerging markets. Additionally, Trade Openness (TO) has an average value of 49.3, with a skewness of 17.7, suggesting that most emerging market countries engage actively in international trade, although some data points reflect relatively lower levels of trade openness.

Stationarity Test

Stationarity testing is conducted to determine whether the data used in the study are stationary or non-stationary. Performing a stationarity test is essential to ensure the absence of spurious regression problems in the model. To assess the stationarity of the data, unit root tests can be employed, such as the Augmented Dickey-Fuller (ADF) test, the Philips-Buhaerah test, the Phillips-Perron (PP) test, or the Dickey-Fuller Generalized Least Squares (DF-GLS) test. This study applies the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests to evaluate the stationarity of the variables.

Table 2 Stationarity Test

| Var | Augmented Dickey Fuller | | | Philips Perron | | | | |
|-----|-------------------------|---------|----------------------|----------------|-------|---------|----------------------|---------|
| | Level | Prob.** | 1 st diff | Prob.** | Level | Prob.** | 1 st diff | Prob.** |
| EG | 17.56 | 0.61 | 60.26 | 0.00 | 12.15 | 0.91 | 131.79 | 0.00 |
| NR | 43.41 | 0.00 | 106.11 | 0.00 | 21.38 | 0.37 | 150.76 | 0.00 |
| FD | 26.69 | 0.14 | 102.21 | 0.00 | 22.63 | 0.30 | 97.94 | 0.00 |
| TO | 24.80 | 0.20 | 115.38 | 0.00 | 32.04 | 0.04 | 235.63 | 0.00 |

Source: Processed by Eviews, 2025.

Based on the results of the stationarity tests, it can be observed that most of the variables are non-stationary at the level but become stationary after first differencing. The test results indicate that the economic growth variable (EG) is not stationary at the level; however, it becomes stationary at the first difference. EG shows a test statistic value of 60.269 with an Augmented Dickey-Fuller (ADF) probability of $0.0000 < 0.05$, indicating stationarity at the first difference. This finding is further supported by the Phillips-Perron (PP) test, which yields a statistic of 131.794 and a probability value of $0.0000 < 0.05$.

The Natural Resources (NR) variable is stationary at the level according to the ADF test, with a test statistic of 43.411 and a probability of $0.0018 < 0.05$. However, the PP test indicates non-stationarity at the level with a probability of $0.3750 > 0.05$. After applying the first difference, NR becomes stationary, as confirmed by both tests with probability values of $0.0000 < 0.05$. For the Financial Development (FD) variable, the ADF and PP tests both indicate stationarity at the first difference, with test statistics of 102.212 and 97.948, respectively, and probability values of $0.0000 < 0.05$. Lastly, the Trade Openness (TO) variable is found to be stationary at the level based on the PP test, which shows a test statistic of 32.047 and a probability value of $0.0428 < 0.05$.

Cointegration Test

The cointegration test in Table 3. is employed to examine the existence of a long-run equilibrium relationship among the variables. In this study, the Kao Residual Cointegration Test is applied. The test statistic from the Kao panel cointegration (ADF) is then compared against the critical value at a 5% significance level. If the test statistic exceeds the critical value or the probability value is less than 0.05, it indicates that the variables are cointegrated, meaning they share a long-term equilibrium relationship.

Table 3 Cointegration Test

| | t-Statistic | Prob. |
|-------------------|-------------|--------|
| ADF | -3.324 | 0.0004 |
| Residual variance | 0.001764 | |
| HAC variance | 0.002274 | |

Source: Processed by Eviews, 2025.

The results of the cointegration test using the Kao Residual Cointegration Test show that the ADF statistic is -3.324 with a probability value less than 0.05 ($\alpha = 5\%$). This indicates that the variables are cointegrated, meaning there exists a long-run equilibrium relationship among them.

Uji Cross-Section Dependence (CD)

The Cross-Section Dependence (CD) test is conducted to examine whether there is cross-sectional dependence among the units in the panel data, such as countries or regions.

Table 4 Uji Cross-Section Dependence (CD)

| Test | Statistic | d.f. | Prob. |
|-------------------|-----------|------|--------|
| Breusch-Pagan LM | 358.9541 | 45 | 0.0000 |
| Pesaran scaled LM | 33.09367 | | 0.0000 |
| Pesaran CD | 3.93511 | | 0.0001 |

Source: Processed by Eviews, 2025.

Table 4 shows the results of the Cross-Section Dependence (CD) test indicate the presence of significant cross-sectional dependence among the units in the model. The null hypothesis, which states that there is no cross-sectional dependence, is strongly rejected based on the very small p-

values obtained from all CD test statistics. In the Breusch-Pagan LM test, the test statistic is 358.9541 with a p-value of 0.0000, indicating significant cross-sectional dependence. Similarly, the Pesaran Scaled LM and Pesaran CD tests yield test statistics of 33.09367 and 3.93511, respectively, with corresponding p-values of 0.0000 and 0.0001, confirming the existence of significant correlations across cross-sectional units.

Test Model Criteria

The selection of model criteria is used to identify, evaluate, and determine the most appropriate model to be employed in the Autoregressive Distributed Lag (ARDL) framework. The ARDL model selection is based on several indicators, including LogL (Log Likelihood), AIC (Akaike Information Criterion), BIC (Bayesian Information Criterion), and HQ (Hannan-Quinn Criterion).

Table 5 Selection of Model Criteria

| Model | LogL | AIC* | BIC | HQ | Specification |
|-------|---------|--------|--------|--------|-------------------|
| 4 | 615.328 | -4.819 | -2.427 | -3.851 | ARDL (1, 4, 4, 4) |
| 1 | 506.174 | -4.624 | -3.737 | -4.265 | ARDL (1, 1, 1, 1) |
| 3 | 560.908 | -4.570 | -2.680 | -3.805 | ARDL (1, 3, 3, 3) |
| 2 | 526.883 | -4.529 | -3.141 | -3.967 | ARDL (1, 2, 2, 2) |

Source: Processed by Eviews, 2025.

Table 5 presents the model with the lowest AIC value is considered the most optimal, as it provides the best trade-off between model fit and complexity. The ARDL (1,4,4,4) specification yields the lowest AIC value of -4.819, along with a BIC value of -2.427 and an HQ value of -3.851, making it the most suitable model for this analysis. The second-best model, specified as ARDL (1,1,1,1), also serves as a reference, with an AIC of -4.624, a BIC of -3.737, and an HQ of -4.265.

Test ARDL (Autoregressive Distributed Lag) Model

Based on the ARDL model estimation, the long-run results indicate that total natural resources (NR) exhibit a negative sign and have a significant effect on economic growth (EG). Referring to the model specification discussed previously, the long-run equation can be expressed as follows:

$$\ln EG = -0.031804 \ln NR + 0.079264 \ln FD + 0.391538 \ln TO + e$$

The short-run ARDL model equation is presented as follows:

$$\ln EG = 0.029229c - 0.019911 \ln NR + 0.099508 \ln FD + 0.044389 \ln TO - 0.377807Vt$$

This implies that, in the long run, a 1 percent increase in Natural Resources (NR) leads to a 3.1 percent decrease in Economic Growth (EG). The negative impact of NR suggests that natural resource management in emerging market countries must be carried out in an organized manner to reduce long-term exploitation. In contrast, Financial Development (FD) exhibits a positive and significant effect on EG, with a coefficient value of 0.079, indicating that a 1 percent increase in FD leads to a 7.9 percent increase in EG. Similarly, Trade Openness (TO) also shows a positive and significant influence, with a coefficient of 0.39, meaning that a 1 percent increase in TO results in a 39 percent increase in EG over the long run.

In the long term, the positive and significant effects of FD and TO on EG indicate that both factors play a crucial role in driving economic growth in emerging markets. This affirms that trade openness and the inflow of foreign direct investment can enhance production capacity, create employment opportunities, and facilitate technology transfer and economic efficiency. Conversely, the finding of a negative and significant relationship between NR and EG should be a matter of concern, particularly for emerging market countries that heavily rely on natural resource exploitation. Therefore, it is essential to adopt more sustainable natural resource management strategies and implement policies that support structural transformation, in order to minimize the negative impacts and optimize the long-term economic benefits.

Table 6 ARDL Estimation Results

| Dependent Variabel = EG | | | | |
|--------------------------------|------------|------------|---------|--------|
| Selected Model: ARDL (1,4,4,4) | | | | |
| Variable | Coef. | Std. Error | t-Stat. | Prob* |
| Long Run | | | | |
| lnNR | -0.0318*** | 0.0043 | -7.315 | 0.0000 |
| lnFD | 0.0792*** | 0.0117 | 6.724 | 0.0000 |
| lnTO | 0.3915*** | 0.0395 | 9.900 | 0.0000 |
| Short Run | | | | |
| C | 0.2922*** | 0.0025 | 11.631 | 0.0000 |
| $\Delta \ln NR$ | -0.0199*** | 0.0069 | -2.877 | 0.0044 |
| $\Delta \ln FD$ | 0.0995*** | 0.0172 | 5.768 | 0.0000 |
| $\Delta \ln TO$ | 0.0443* | 0.0250 | 1.773 | 0.0776 |
| ΔECT | -0.3778*** | 0.0500 | -7.552 | 0.0000 |

Note: *, **, and *** indicate significance levels at the 10%, 5%, and 1% levels, respectively.

Source: Processed by Eviews, 2025.

The short-run ARDL model estimation shows that the constant term (C) is positive and statistically significant, indicating that when all independent variables in the model are held constant or equal to zero, economic growth (EG) will remain positively valued at 0.2922. This suggests that, in the absence of changes in NR, FD, and TO, EG maintains a significantly positive baseline level.

The short-run estimation results for the NR variable also reveal a negative and statistically significant coefficient, meaning that a 1 percent increase in NR would lead to a 1.9 percent decline in EG. The short-run impact of FD is consistent with the long-run result, showing a significant positive effect; a 1 percent increase in FD leads to a 9.9 percent increase in EG. Similarly, TO exhibits a positive coefficient of 0.0443, indicating that a 1 percent increase in TO in the short run results in a 4.4 percent rise in EG. Furthermore, the Error Correction Term (ECT) has a negative coefficient of -0.3778 and is highly significant at the 1 percent level, indicating that approximately 37 percent of the deviation from long-run equilibrium is corrected in each period. In other words, the model possesses the capacity to gradually return to its long-run equilibrium following a short-term shock.

4. Discussion

Total Natural Resources (X1) on Economic Growth (Y) in Emerging Market Countries

The hypothesis stating that “there is short-run and long-run relationship between natural resource on economic growth” is empirically accepted in this study. The results reveal that natural resource (NR) exert a statistically significant and negative effect on economic growth (EG) in both the short and long run among emerging market economies. This finding aligns with the well-documented phenomenon known as the “resource curse,” wherein countries rich in natural resources often experience slower or even negative growth trajectories due to institutional inefficiencies and over-reliance on volatile commodity exports (Dwumfour & Ntow-Gyamfi, 2018; Kumar, 2024). The monopolization of natural resource sectors by state-owned enterprises or politically connected elites in resource-rich countries contributes to bureaucratic inefficiencies, mismanagement, and corruption, ultimately reducing the potential economic gains from resource exploitation (Liao & Zeng, 2023). Moreover, heavy dependence on natural resource exports exposes these economies to external shocks, price fluctuations in global commodity markets, and neglect of productive, innovation-driven sectors (Lin & Yuan, 2023).

In many emerging markets, the consumption of natural resources has escalated rapidly in response to accelerating economic growth, leading to increased volatility in resource prices. Countries such as China, India, and Brazil demonstrate high levels of energy consumption, particularly of fossil fuels such as coal and crude oil, which are essential to sustaining industrial output and GDP contributions (Guo et al., 2022; Phan, 2023). For example, China has become not only the largest consumer of coal-based electricity but also a significant producer of livestock and agricultural goods, indicating a wide-reaching dependence on natural capital (Gani & Ahmad, 2020). Yet, the economic benefits derived from resource utilization are often undermined by poor environmental governance, insufficient reinvestment of resource revenues into long-term

development strategies, and an absence of diversification, exacerbating the adverse impacts of resource volatility (Erdoğan et al., 2021). The inefficient and unsustainable use of non-renewable resources such as forests, minerals, and oil has also been linked to intensifying social and geopolitical conflicts in resource-rich developing countries (Lin & Yuan, 2023).

Interestingly, some literature suggests that the relationship between natural resource rents and economic growth may follow a nonlinear path, typically an inverted-U or U-shaped. In early stages, excessive reliance on resource rents may inhibit growth, but beyond a certain threshold—when effective institutional frameworks and resource governance are in place—the impact may become positive. This implies that it is not the abundance of resources per se that determines economic outcomes but rather how they are managed, taxed, reinvested, and regulated. Efficient allocation and transparent governance of resource wealth can foster inclusive development, whereas extractive and rent-seeking behaviors limit the growth-enhancing potential of natural capital (Dwumfour & Ntow-Gyamfi, 2018; Liao & Zeng, 2023). Thus, the adverse effects observed in this study highlight the pressing need for emerging markets to adopt structural reforms aimed at enhancing institutional quality and reducing dependence on unprocessed resource exports.

The broader geopolitical and trade dynamics further influence how resource wealth is leveraged within the global economy. As shown by Aksenov et al. (2023), the strategic alignment between China and Russia through bilateral trade agreements and financial integration efforts reflects a broader attempt by emerging economies to reconfigure trade networks in their favor. However, such efforts must be supported by sustainable policy frameworks and domestic capacity building to ensure long-term benefits. Without these structural reforms, the paradox of resource wealth leading to underdevelopment—rather than prosperity—will likely persist. Additionally, environmental and fiscal risks associated with commodity dependency pose serious challenges to economic resilience and social equity, especially under global sustainability pressures (Chishti & Sinha, 2022; Huang, 2024).

The acceptance of the hypothesis is justified by strong empirical evidence indicating significant negative effects of natural resource rents on economic growth across emerging markets. This result reinforces the importance of integrating natural resource management within a broader development agenda that prioritizes institutional quality, financial innovation, and economic diversification. By doing so, emerging economies can not only overcome the resource curse but also transition toward a more sustainable and inclusive growth path.

Financial Development (X2) on Economic Growth (Y) in Emerging Market Countries

The hypothesis stating that "there is short-run and long-run relationship between financial development and economic growth" is empirically accepted based on the results of the ARDL model estimation. The findings indicate that financial development (FD) has a statistically significant and positive effect on economic growth in both the short and long run. These results substantiate the Finance-Growth Nexus Theory originally proposed by Schumpeter, which posits that a well-functioning financial system enhances economic growth by efficiently allocating capital, facilitating investment, and promoting innovation. When financial institutions such as commercial banks, investment firms, and capital markets are effectively developed, they provide diverse financial products that meet the needs of households, entrepreneurs, and governments, thereby expanding access to financing and reducing systemic risk (Chen, 2025; Horvath et al., 2025).

This positive and robust relationship implies that countries with more inclusive and innovative financial systems are better positioned to channel resources into productive sectors, thus accelerating infrastructure development, technological adoption, and overall investment. As investment and production increase, demand for financial services follows, creating a reinforcing cycle of growth (Ngo et al., 2022; Zaidi et al., 2019). Empirical evidence from emerging economies also suggests that financial development directly supports green investments and the low-carbon economy by offering targeted financial instruments aligned with sustainable development goals (Chishti & Sinha, 2022; Halim & Moudud-Ul-Huq, 2024). This further underscores the strategic necessity for emerging markets to implement forward-looking financial policies that stimulate not only growth but also environmental sustainability.

Moreover, in the context of transition economies such as Russia, financial deepening through private sector credit has been shown to spur productivity growth and amplify GDP expansion, especially when accompanied by prudent fiscal management. Similarly, the growing importance of financial development as a catalyst for industrialization is apparent across BRICS countries, where

enhanced access to credit facilities has fueled entrepreneurial activity, expanded small and medium-sized enterprises (SMEs), and stimulated employment generation (Aksenov et al., 2023). In this regard, industrial growth reciprocally increases the demand for financial services, such as investment loans, trade finance, insurance, and capital market instruments, reinforcing the symbiotic relationship between financial sector expansion and real sector growth (Qamruzzaman et al., 2021; Wu et al., 2024).

Additionally, financial development has been identified as a key enabler of green economic growth. Countries that promote inclusive finance through policies that support fintech innovation, renewable energy financing, and environmentally responsible banking practices are more likely to experience resilient and diversified growth trajectories (Huang, 2024; Liao & Zeng, 2023). This evolution of finance into a sustainability-oriented ecosystem enables countries to not only meet capital demands for traditional sectors but also support transitions to low-carbon economies, thereby meeting both economic and environmental objectives.

The cumulative evidence from the literature reinforces the argument that financial development is not merely an ancillary component of economic progress but rather a fundamental driver. The empirical results of this study are consistent with prior findings across BRICS and emerging market contexts, validating that improvements in financial architecture—particularly those enabling broader participation and efficient resource mobilization—serve as crucial mechanisms for sustained economic growth (Banday et al., 2021; Pea-Assounga et al., 2025; Usman et al., 2022). In light of these insights, accepting the hypothesis is not only statistically justified but also theoretically consistent, emphasizing the transformative role of financial development in the macroeconomic performance of emerging market economies.

Trade Openness (X3) on Economic Growth (Y) in Emerging Market Countries

The hypothesis stating that "there is long-run and short-run relationship between trade openness and economic growth" is accepted based on the empirical findings of this study. The results reveal that trade openness exhibits a positive and statistically significant impact on economic growth, both in the short and long term, across all observed emerging market economies. This outcome aligns with previous studies, such as Banday et al. (2021), which affirm that greater trade openness fosters higher economic performance by enhancing access to international markets, stimulating competition, and promoting efficiency. The observed positive association underscores the transformative role of international trade in expanding economic opportunities and facilitating knowledge spillovers, especially among developing countries that increasingly rely on cross-border trade as a vehicle for sustainable growth. In particular, increased engagement in global trade enhances a country's capacity to diversify its export base, attract foreign direct investment, and integrate into global value chains, which collectively stimulate economic expansion.

The influence of trade openness is further reinforced through labor market dynamics. Greater trade activity often leads to a surplus in employment opportunities, particularly in labor-intensive industries within emerging economies. This phenomenon is evident in countries such as China, India, and Brazil, where international trade has helped absorb surplus labor into productive sectors, boosting national income and stimulating domestic consumption. In support of this, Aksenov et al. (2023) demonstrated that trade relationships—particularly those between China and Russia—are deeply rooted in structured economic diplomacy that relies on comparative advantages and geopolitical cooperation. By utilizing centralized trade power to support mutual interests, emerging economies create a robust framework for economic integration and trade diversification, which is essential for long-term development.

India's case illustrates this connection clearly, where the liberalization of trade policies combined with strong institutional development has led to sustained GDP growth. Qayyum et al. (2025) support this assertion by highlighting that robust trade frameworks paired with financial and regulatory reforms contribute significantly to economic performance in emerging countries. Moreover, countries such as Russia, Brazil, and South Africa have engaged in regional trade agreements such as the Eurasian Economic Union (EAEU), Mercosur, and the African Continental Free Trade Area (AfCFTA), respectively, as strategic platforms to enhance regional economic ties and elevate their influence in global trade. According to Dunford et al. (2022), these collaborations have redefined global trade norms and strengthened the economic architecture of the BRICS countries, positioning them as influential actors capable of counterbalancing Western economic dominance.

In the case of China, rapid export growth driven by technological advancements has established the country as a global trade hub. As argued by Guo et al. (2022), China's deliberate policy shift to reduce import dependency after the 2008 global financial crisis intensified its export-led growth strategy, demonstrating how trade openness can serve as a powerful engine for economic advancement. Mejia (2023) also emphasizes that increased production associated with trade expansion provides considerable advantages to industries and firms, creating a ripple effect that attracts investment and accelerates GDP growth. The resulting expansion of industrial capacity not only fuels domestic economic activity but also strengthens regional competitiveness and trade integration. Furthermore, China's leadership in promoting regional trade initiatives demonstrates the broader economic and geopolitical implications of trade openness. As observed by Hoang et al. (2023), China's efforts to restructure the global trade network contribute to more balanced and equitable access to markets among developing nations. These efforts are critical to fostering regional integration, enhancing interdependence, and ultimately enabling emerging economies to capture more value from international trade. Grassia et al. (2024) highlight that such strategies not only enhance regional competitiveness but also inform national development planning by aligning sub-national growth agendas with international trade goals.

In conclusion, the overwhelming evidence from this study confirms that trade openness plays a pivotal role in shaping the economic trajectories of emerging markets. It acts as a catalyst for structural transformation, employment generation, investment inflows, and regional integration. Therefore, the acceptance of the hypothesis is justified, and the findings lend strong support to the proposition that promoting open trade policies remains a critical lever for enhancing long-run and short-run economic growth among emerging economies (Banday et al., 2021; Hoang et al., 2023).

5. Conclusion

This study reveals critical insights into the structural dynamics of economic growth in Emerging Markets, highlighting three key drivers and their long- and short-term impacts. First, total natural resources have a significant negative impact on economic growth in both the long and short term in Emerging Markets. This negative effect may be attributed to factors such as high levels of corruption and weak governance structures, indicating that poor management of natural resources remains a major challenge for developing countries. Second, financial development has a significant positive impact on economic growth in both the long and short term across Emerging Markets. Through private sector credit, financial development can enhance market competition, potentially lowering borrowing costs for individuals and businesses. The contribution of financial institutions can lead to more profitable investments and, in turn, higher GDP growth. Third, the study also finds that trade openness has a significant positive impact on economic growth in both the long and short term in Emerging Markets. This positive effect may result from increased production and trade activities, which benefit industries and enterprises through expanded market opportunities and improved efficiency. Based on these conclusions, countries categorized as Emerging Markets should adopt strategic measures to strengthen governance and management systems in order to better utilize their natural resources and increase the use of renewable energy. As developing countries with strong economic growth, it is crucial to create new opportunities that are aligned with the unique geographical and climatic conditions of each country. Furthermore, future research on economic growth in Emerging Markets should focus on a deeper analysis of the scale and comparison between renewable and non-renewable energy use. This would help determine optimal strategies for maximizing the benefits of environmentally friendly energy to support future economic development. Additionally, further studies should also explore financial sector development by incorporating additional indicators that can provide a more comprehensive understanding of income generation mechanisms and investment growth in these economies.

6. References

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