

THE IMPACT OF REMITTANCES ON ECONOMIC GROWTH IN INDONESIA

Elvi Nurita Roisatin^{a*}

^a Faculty of Islamic Economics and Business, Sayyid Ali Rahmatullah State Islamic University of
Tulungagung

*) Corresponding Author Email: elvinurita11@gmail.com

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ABSTRACT

This research is motivated by the important role of remittances as a source of foreign exchange that has the potential to drive economic growth through consumption, investment, and household income. However, its effectiveness is influenced by domestic structural conditions, including financial development and trade openness. This study aims to analyze the influence of remittances, financial development, trade openness, and previous period economic growth on current economic growth in Indonesia in the short and long term. The method used is the Autoregressive Distributed Lag (ARDL) with secondary quarterly data from 2012 to 2023 from BPS and Bank Indonesia. The results show that economic growth in the previous quarter has an effect on economic growth itself in the fourth lag but is negative, remittances have a positive and significant effect in the short and long term, financial development has a positive effect in the current quarter, a negative effect in the first lag, and is insignificant in the long term, trade openness has a negative effect in the short term and is insignificant in the long term, all variables simultaneously have a significant effect on economic growth in Indonesia.

INTRODUCTION

Economic growth is one of the main indicators for assessing a country's development success. Stable economic growth reflects rising production, community income, and general welfare (Among et al., 2022). For developing countries like Indonesia, efforts to boost economic growth still face various challenges, particularly limited employment opportunities and income inequality.

Limited job opportunities domestically have pushed some Indonesians to work as migrant workers abroad. This activity generates remittances, funds sent by migrant workers to their families in their home countries. Remittances have become an important

source of foreign exchange for Indonesia and have the potential to support economic growth by increasing household consumption, savings, and investment. (Lestari & Budhi, 2022).

However, the role of remittances in driving economic growth is not always optimal. In some periods, increases in remittances are not always accompanied by increases in national economic growth. This suggests that domestic structural conditions can influence remittance contributions to the economy. Remittances that are primarily used for non-productive consumption or not integrated into the formal financial system can limit their impact on long-term economic growth (Ramompas & Putra, 2023).

Previous studies have shown mixed results regarding the impact of remittances on economic growth. Some studies have found that remittances have a positive effect, as they increase household purchasing power and investment. (Adjei et al., 2020), while other studies show weak or even negative impacts due to recipient dependence on remittances (Reynaldo Romlin, 2021; Sutradhar, 2020). These differences in findings indicate a research gap, particularly regarding how remittances operate in the Indonesian economy, which has a continuously evolving financial system and a level of trade openness.

Based on these conditions, this study aims to analyze the impact of remittances on economic growth in Indonesia, while accounting for other supporting factors, namely financial development and trade openness. This research is expected to provide a more comprehensive understanding of the role of remittances in the Indonesian economy, both in the short and long term, and contribute to the formulation of more effective economic policies.

LITERATURE REVIEW

Remittances in developing countries are seen as a potential source of foreign exchange to drive economic growth by increasing household consumption, investment, and public welfare. However, the effectiveness of remittances in driving economic growth depends heavily on the structural conditions of the domestic economy, particularly the development of the financial sector and the level of trade openness. Therefore, a comprehensive theoretical and empirical understanding is needed to explain the role of remittances in Indonesia's economic growth.

Theoretical Framework

This study uses several main theories that support the analysis of the influence of remittances, financial development, and trade openness on economic growth, as follows:

1. Solow–Swan Theory of Economic Growth

The Solow–Swan theory of economic growth explains that economic growth is determined by the accumulation of capital, labor, and technological progress (Liana et al., 2024). Economic growth, in this theory, depends on the interaction of labor and capital. One form of capital accumulation is money, which can be obtained through remittances and *financial development*. Remittances can be seen as a form of capital accumulation that increases consumption and investment capacity, thus contributing to economic growth. (Hidayat, 2024).

2. Theory of Comparative Advantage

David Ricardo's theory of comparative advantage explains that a country can benefit from international trade by specializing in products that it can produce more efficiently than other countries. Trade openness reflects a country's level of integration in international trade, as measured by the ratio of exports and imports to Gross Domestic Product (Susila, 2022).

Trade openness enables greater market access, investment flows, and production efficiency through specialization and the exchange of goods between countries. Through these mechanisms, trade openness encourages increased competitiveness, innovation, and economic efficiency, ultimately contributing to long-term economic growth (Nuraini and Mudakir, 2019).

3. Remittance

Remittances are the flow of funds sent by migrant workers to their home countries through various financial channels (Nadjib, 2023). Remittances serve as an important source of external income for developing countries because they can increase household income, consumption, and investment (Rantung et al., 2018). Furthermore, remittances also contribute to foreign exchange reserves and macroeconomic stability, potentially driving long-term economic growth (Muhana et al., 2024).

4. Financial Development

Financial development is the process of developing the financial sector, encompassing institutions, markets, and financial instruments, to improve the efficiency of resource allocation (Fajriyatul Abadiyah & Abdul Haris, 2023). A developed financial system can provide liquidity and broader credit access, encourage productive investment, and support increased productivity (Supartoyo et al., 2018). Therefore, the better the financial sector develops, the greater its contribution to economic growth.

Previous Studies and Hypothesis

Various empirical studies have examined the effect of remittances on economic growth, with mixed results. Some studies found that remittances have a positive and significant effect on economic growth by stimulating household consumption and investment. However, other research indicates that remittances do not always have a significant impact and can even have negative consequences if used for consumption and create dependency.

Financial development is also a crucial factor in economic growth because it increases access to financing. Through indicators such as credit growth, *financial development* reflects the availability of funds for productive investment. (Immi Fiska Tarigan, 2024). However, several studies have found negative impacts due to low credit allocation efficiency and high risk of non-performing loans. (Purwanti & Kurnia, 2022).

Meanwhile, research on trade openness shows that openness tends to drive economic growth through increased exports, greater production efficiency, and technology transfer (Nuraini and Mudakir, 2019). However, in developing countries like Indonesia, the impact can be negative due to weak competitiveness, import dependence, and a lack of supporting infrastructure (Ichvani & Sasana, 2019; Zebua & Idris, 2024).

Research Hypothesis

Based on previous theories and empirical findings, the research hypothesis can be formulated as follows:

1. H_0 : There is no positive and significant influence of the remittance variable on economic growth in Indonesia in the short term or long term.
 H_1 : There is a positive and significant influence of the remittance variable on economic growth in Indonesia in the short and long term.
2. H_0 : There is no positive and significant influence of *the financial development variable* on economic growth in Indonesia in the short or long term.
 H_1 : There is a positive and significant influence of *the financial development variable* on economic growth in Indonesia in the short and long term.
3. H_0 : There is no positive and significant influence of the trade openness variable on economic growth in Indonesia in the short or long term.
 H_1 : There is a positive and significant influence of the trade openness variable on economic growth in Indonesia in the short and long term.
4. H_0 : There is no influence between the variables of remittances, *financial development* and trade openness on economic growth in Indonesia.
 H_1 : There is an influence between the variables of remittances, *financial development* and trade openness on economic growth in Indonesia.

RESEARCH METHODS

The study uses secondary quarterly time series data from 2012 to 2023. The variables used include remittances as the independent variable, financial development (measured through credit growth) and trade openness (the number of exports and imports) as control variables, and economic growth as the dependent variable. Data were obtained from the Central Bureau of Statistics and Bank Indonesia. The analysis was conducted using the ARDL (Autoregressive Distributed Lag) method to examine the short- and long-term relationships between variables.

In general, the ARDL model equation can be written as follows:

$$Y = \alpha + \sum_{i=1}^p \beta_i Y_{t-i} + \sum_{j=0}^{q1} \delta_{1j} X_{1,t-j} + \sum_{j=0}^{q2} \delta_{2j} X_{2,t-j} + \dots + \epsilon_t$$

Where Y_t = dependent variable at time t , X_t = independent variable at time t , α = constant, β_i = lag coefficient of the dependent variable, δ_j = lag coefficient of the independent variable, p = number of lags of the dependent variable, q = number of lags of the independent variable, ϵ_t = error term.

RESULTS AND ANALYSIS

Results

1. Stationarity Test

Table 1. Results of the Augmented Dickey-Fuller (ADF) Test at Level

Variables	Prob .	Information
Remittance (X1)	0.9312	Non-Stationary
Financial Development (X2)	0.0761	Non-Stationary
Trade Openness (X3)	0.4781	Non-Stationary
GDP (Y)	0.0613	Non-Stationary

Source: Data Processing Results, 2025

Based on Table 1, the ADF test indicates that all variables have probability values greater than the critical value (0.05) at the level, so it can be concluded that all variables are not stationary at the level. Therefore, it is necessary to continue testing at the first-difference level.

Table 2. Results of the Augmented Dickey-Fuller (ADF) Test at the First Difference Level

Variables	Prob .	Information
Remittance (X1)	0.0000	Stationary
Financial Development (X2)	0.0120	Stationary
Trade Openness (X3)	0.0000	Stationary
GDP (Y)	0.0000	Stationary

Source: Data Processing Results, 2025

The probability values for all variables are less than the critical value (0.05), so it can be concluded that all the data tested are stationary at the first-difference level.

2. Cointegration Test

Table 3. Johansen Cointegration Test Results

Hypothesized No.OfCE(s)	Trace Statistics	0.05 Critical Value	Prob.
None	42.42368	47,85613	0.1472
At most 1	24.41258	29.79707	0.1836
At most 2	9.882268	15,49471	0.2899
At most 3	0.775381	3.841465	0.3786

Source: Data Processing Results, 2025

Results indicate no initial cointegration because the t-test probability is greater than 0.05. *The trace test results are $\leq$ the critical value.* It can be concluded that the data do not exhibit cointegration. Therefore, the ARDL model is suitable for use in this study.

Table 4. Results of the Bound Test Cointegration Test

Test Statistics	Value	Significant.	I(0)	I(1)
<i>Finite Sample: n=45</i>				
F- statistic	11,16542	10%	2.56	3,428
k	3	5%	3,078	4,022
		1%	4.27	5,412

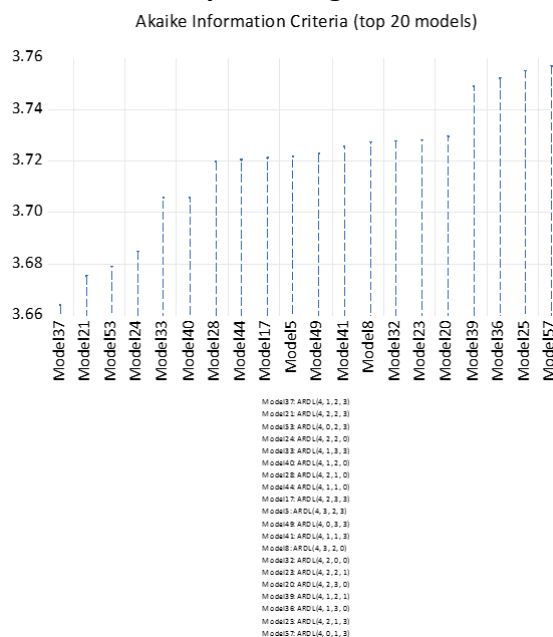
Source: Data Processing Results, 2025

Based on the cointegration test results using the Bound Test approach, the F-statistic is 11.16542, which exceeds the upper bound. I (I) at 5% alpha is 4.022. Thus, it can be concluded that this study has a long-term relationship.

3. Optimal Lag

The Optimum Lag Test is conducted to determine the optimal lag length using the Akaike Information Criterion (AIC), where the smallest AIC value indicates the best model.

Table 5. Optimal Lag Test Results



Source: Data Processing Results, 2025

Based on the results of the optimum lag test, it shows that the lag size selected in this study is ARDL (4, 1,2,3),

4. ARDL Estimation

Table 6. Short-Term ARDL Estimation Results

Variable	Coefficient	Prob.	Information
D(GDP (-1))	0.929264	0.0003	Significant
D(GDP (-2))	0.913290	0.0001	Significant
D(GDP (-3))	0.726989	0.0000	Significant
D(Remittance)	4.063157	0.0037	Significant
D (Financial Development)	0.554239	0.0010	Significant
D(Financial Development (-1))	-0.346458	0.0386	Significant
D(Trade Openness)	0.121005	0.5924	Not Significant
D(Trade Openness (-1))	-0.594136	0.0189	Significant
D(Trade Openness (-2))	-0.627601	0.0041	Significant
CointEq (-1) *	-2,160063	0.0000	Significant

Source: Data Processing Results, 2025

Table 7. Long-Term ARDL Estimation Results

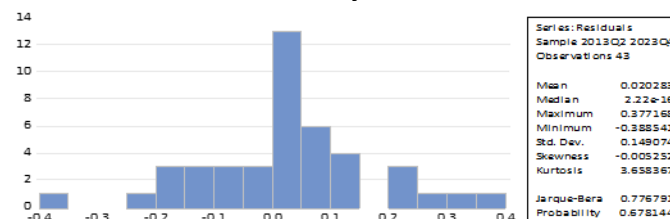
Variable	Coefficient	Prob.	Information
D(Remittance)	2.979084	0.0060	Significant
D (Financial Development)	0.162343	0.0770	Not Significant
D(Trade Openness)	0.398999	0.1982	Not Significant
C	-0.129559	0.2777	Not Significant

Source: Data Processing Results, 2025

5. Classical Assumption Test Results

a. Normality Test

Table 8. Results of Normality Test After Transformation



Source: Data Processing Results, 2025

Based on table 8, it can be explained that the *Prob. value is Jarque Bera* 0.678144 > 0.05, so it can be concluded that the data is normally distributed.

b. Autocorrelation Test

Table 9. Autocorrelation Test Results

<i>Breusch-Godfrey Serial Correlation LM Test</i>			
F-static	0.011094	Prob. F	0.9890
Obs*R-squared	0.035308	Chi-Square Prob.	0.9825

Source: Data Processing Results, 2025

Based on the autocorrelation test results, the *Prob. Obs*R-squared value* is 0.9825 > 0.05, so it can be concluded that this model is free from indications of autocorrelation.

c. Heteroscedasticity Test

Table 10. Heteroscedasticity Test Results

Glejser's Heteroskedasticity Test

Obs*R-squared	15.60256
Chi-Square Prob.	0.2713

Source: Data Processing Results, 2025

The Chi-Square Prob. is $0.2713 > 0.05$, indicating that the data meet the assumption of homoscedasticity and that the model does not have heteroscedasticity problems.

d. Multicollinearity Test

The multicollinearity test assesses whether independent variables within the model are correlated. Interrelation is a strong relationship between two independent variables. The following are the results of the multicollinearity test.

Table 11. Multicollinearity Test Results

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
D(Remittance)	2,713243	1.984789	1.867088
D(Remittance (-1))	3,068714	2.237655	2,109330
D (Financial Development)	0.035133	2.432309	2,351697
D(Financial Development (-1))	0.044400	3.057327	2.945009
D(Financial Development (-2))	0.036256	2,520635	2,406375
D(Trade Openness)	0.078144	1.415977	1,405863
D(Trade Openness(-1))	0.075504	1.387772	1,375606
D(Trade Openness(-2))	0.074085	1,407770	1.401919
D(Trade Openness(-3))	0.072693	1.322585	1,301726
C	0.061285	1,492201	NA

Source: Data Processing Results, 2025

Based on the results in Table 11, the Variance Inflation Factors (VIFs) indicate no multicollinearity among the independent variables, as each VIF is less than 10.00, and the multicollinearity test assumption is met.

6. F-Statistic Test

Table 12. Results of the F-Statistic Test

<i>F-statistic</i>	4,600415
<i>Prob. (F-statistic)</i>	0.000308

Source: Data Processing Results, 2025

Based on the results of this study, an F-statistic value of 4.600415 was obtained with an F-statistic probability of $0.000308 < 0.05$. Therefore, it can be concluded that the independent variables used in this study jointly influence the dependent variable.

Discussion

The Influence of Previous Economic Growth Periods on Current Economic Growth

Based on ARDL results, there is cointegration between economic growth and itself at the fourth lag, but the effect is negative. Several factors, including high inflation, can cause this. During periods of high economic growth, demand for goods and services tends

to rise as incomes increase. If this increase in demand is not matched by an increase in the quantity of goods and services available (supply), it will put pressure on prices, leading to inflation. (Situmorang & Siahaan, 2024)

High inflation, uncontrolled by the government, will reduce people's purchasing power, increase the cost of living due to rising prices of basic necessities, create economic uncertainty, and slow consumption and investment. This could negatively impact economic growth in the following period. (Utami et al., 2024)

The Influence of Remittances on Economic Growth in Indonesia

Research using the ARDL method explains that remittances influence economic growth in Indonesia in both the short and long term. In the short term, remittances have a positive and significant impact on economic growth in Indonesia. This is because remittances sent by migrant workers are usually immediately used by recipients to meet daily needs, such as food. This increased consumption drives demand for goods and services, thereby accelerating economic growth (Adjei et al., 2020).

In addition to consumption, remittances are also used for investment, such as purchasing gold, land, and rice fields, as business capital that drives the growth of the MSME sector, and expands access to financial services, all of which contribute to sustainable economic development. Remittances also contribute to the country's foreign exchange reserves and exchange rate stability, thereby boosting long-term economic growth (Muhana et al., 2024).

The Influence of *Financial Development* on Economic Growth in Indonesia

The results of the short-term ARDL approach test show that *financial development* influences economic growth in various ways. In the current quarter, *financial development* had a positive and significant impact on economic growth in Indonesia. This is because the more developed the financial sector, the easier public access to financial services. Financial sector development, such as bank credit, can increase the money supply, thus driving consumption growth and positively impacting economic growth. Furthermore, targeted credit distribution to appropriate sectors will also have a positive impact (Irizam and Setyari, 2020).

However, in the previous quarter, *financial development* had a negative and significant impact on Indonesia's short-term economic growth. This could be because, despite *financial development*, although the economy has developed well, many people still don't fully understand how to use credit wisely. As a result, the risk of non-performing loans arises, disrupting financial stability and reducing economic growth. (Purwanti & Kurnia, 2022).

In the long term, financial development has a positive but statistically insignificant impact on economic growth in Indonesia. This may be due to gaps in financial literacy and inclusion across regions. As a result, despite progress in the financial sector, its impact on economic growth is limited and insignificant (Ariani, 2024).

The Impact of Trade Openness on Economic Growth in Indonesia

In the previous quarter and the two quarters prior, trade openness had a significant negative impact on short-term economic growth. This is because, despite increasing exports, Indonesia remains dependent on low-value-added raw commodities such as coal and palm oil, whose prices are heavily influenced by global market conditions. (Thoha, 2024). Furthermore, dependence on global trade makes the economy more vulnerable to external shocks, including monetary crises and market instability (Nova Anom et al., 2019).

Meanwhile, in the long term, trade openness has a positive but insignificant impact. This is because, although trade openness can encourage exports, imports, and production efficiency, its long-term impact in Indonesia remains limited due to limitations in trade policies that are not balanced by adequate support for domestic sectors. These policies are often implemented without adequate preparation for domestic sectors, such as insufficient industrial development programs to help local companies adapt to international competition. (Zikratunnisa & Hasdi Aimon, 2024).

CONCLUSION

1. Indonesia's economic growth in the previous period had an impact on current growth, but the effect was not direct and only became significant and negative in the fourth quarter of the previous year.
2. Remittances have a positive and significant impact in both the short and long term.
3. *Financial development* exhibits varying effects in the short term. In the current quarter, *financial development* had a positive and significant effect. However, in the previous quarter, the effect was negative and significant. In the long term, it has a positive but not statistically significant effect.
4. Trade openness has a negative and significant effect in the short term, while in the long term it has a positive but insignificant effect.

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