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Dynamic Relationship Analysis between Foreign Direct Investment, Exports, Imports, and Economic Growth in Afghanistan: An ARDL Model Approach

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Abstract: This study examines the dynamic relationship between foreign direct investment (FDI), exports, imports, and economic growth in Afghanistan over the period 2002–2023 using the Autoregressive Distributed Lag (ARDL) approach. The results confirm a stable long-run relationship among the variables, with a negative and significant error correction term indicating that about 27% of short-run disequilibrium is corrected each period. In the short run, exports negatively affect economic growth, while imports have a positive and significant impact. In the long run, FDI emerges as a key driver of economic growth, alongside imports, both showing positive and significant effects, whereas exports remain statistically insignificant. From an Islamic economics perspective, these findings highlight the importance of real-sector development, productive investment, and efficient resource allocation in line with adl (justice), maslahah (public welfare), and avoidance of gharar (excessive uncertainty). The results further indicate that growth in Afghanistan is strongly shaped by structural conditions, where foreign investment and capital imports play a crucial role in enhancing productive capacity. The study recommends policies focused on attracting stable and equitable FDI, facilitating productive imports, and implementing structural reforms in the export sector to achieve inclusive, sustainable, and ethically grounded economic growth.

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INTRODUCTION

Over the past few decades, Foreign Direct Investment (FDI) and international trade have gained considerable importance in the literature of economic development as key engines of economic growth. Empirical evidence suggests that FDI contributes notably to economic expansion by facilitating technology transfer, enhancing workforce skills, raising productivity

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levels, and reinforcing production capacities (Asiedu, 2006; Sahoo & Khan, 2010). In a similar vein, international trade promotes specialization according to comparative advantage, improves market competitiveness, and allows economies to benefit from scale efficiencies, ultimately resulting in higher production levels and improved economic welfare (Zafar, 2020).

In this regard, a large body of empirical research has explored the linkage among foreign direct investment (FDI), international trade, and economic growth. For example, the study by (Kakar & Qureshi, 2017) finds that FDI contributes positively and significantly to economic growth in developing economies, whereas (Sam Hobbs et al., 2023) highlight that the combined effect of foreign investment and trade plays an important role in stimulating growth performance. Moreover, theoretical explanations such as Dunning's Eclectic Paradigm (Dunning, 1993) argue that the flow of foreign investment is determined by ownership, location, and internalization advantages, which collectively support the development process in host countries.

Nevertheless, existing empirical results are not consistent across different countries and are often shaped by variations in institutional quality, economic structure, and development levels. Specifically, in developing and fragile states like Afghanistan, factors such as political instability, security challenges, inadequate infrastructure, and weak institutional capacity can limit the extent to which FDI and trade translate into sustainable economic benefits (World Bank, 2023).

Afghanistan, as an economy in transition, is confronted with a range of structural and macroeconomic challenges such as limited domestic capital accumulation, heavy reliance on foreign aid, persistent political instability, and underdeveloped productive infrastructure. Although the country possesses notable economic potential across several sectors, it has not yet been able to fully benefit from opportunities arising from foreign investment and international trade. A review of Afghanistan's economic growth performance during the period 2000–2023 shows marked volatility and instability, largely influenced by fluctuations in foreign aid inflows, security conditions, external shocks, and structural weaknesses within the productive system.

Despite the relevance of this issue, a significant gap in the existing literature on Afghanistan lies in the absence of a comprehensive and dynamic investigation of the nexus between Foreign Direct Investment (FDI), trade (imports and exports), and economic growth using advanced econometric approaches. The majority of earlier studies have either treated these variables in isolation or applied techniques that do not adequately differentiate between short-run and long-run relationships.

Therefore, the main motivation of this study is to fill this research gap by employing the Autoregressive Distributed Lag (ARDL) model, which allows for the simultaneous examination of both short-run and long-run relationships among variables. This approach is particularly suitable when variables are integrated of different orders, I(0) and I(1).

The significance of this study lies in its potential to provide reliable empirical evidence for Afghan economic policymakers, enabling them to design more effective strategies for attracting foreign investment, promoting trade, and achieving sustainable economic growth. This objective is also aligned with the United Nations Sustainable Development Goals, particularly Goal (decent work and economic growth) (Rai et al., 2019).

Accordingly, using annual data for the period 2000–2023 and applying the ARDL model, this study investigates the dynamic relationship between FDI, exports, imports, and economic growth in Afghanistan. The novelty of this research lies in its simultaneous analysis of short-run and long-run effects of these variables within the Afghan economic context, as well as in providing updated empirical evidence for improving economic policy formulation.

The main objective of the study is to provide scientific evidence for a better understanding of the impacts of these variables and to offer policy recommendations for achieving sustainable and inclusive economic growth in Afghanistan. The trend of Afghanistan's economic growth during the period 2000–2023 is illustrated in the figure below.

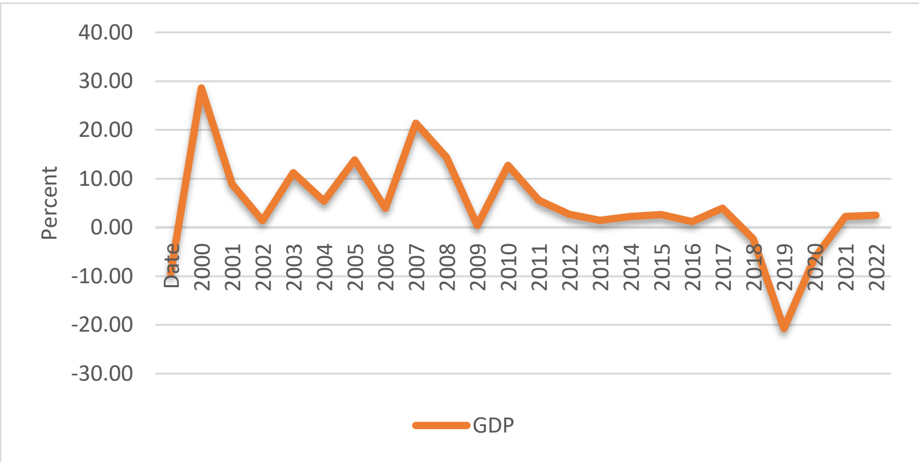

Figure 1. *Afghanistan's Economic Growth Rate (Annual %), 2000–2023. Source: World Bank*

Figure 1 depicts the annual GDP growth rate of Afghanistan, measured in percentage terms, over the period from 2000 to 2023. The data reveal a highly volatile and unstable economic performance throughout the observed years. The overall trend may be separated into multiple phases, starting with a rapid and exceptionally high growth expansion in the early 2000s. During this initial stage, the economy recorded its highest growth levels—around 30% in 2001 and 2002—which is mainly associated with large-scale international assistance, the launch of post-conflict reconstruction programs, rising inflows of foreign investment, and extensive rebuilding of national infrastructure and institutions.

In the following years, despite the presence of some intermittent increases in growth, the general pattern shows a gradual slowdown and a movement toward relatively modest and stabilized growth rates. This weakening trend in economic performance can be linked to several structural and external factors, including continued dependence on external aid, instability in agricultural production, limited development of domestic industries, governance weaknesses and corruption, declining levels of investor confidence, the economic disruption caused by the COVID-19 pandemic, and ongoing political and security challenges. Moreover, contractions in trade activity and reduced investment inflows have further contributed to the overall decline in sustained economic growth during the period under consideration.

A wide range of empirical research has explored how foreign direct investment (FDI) and international trade are linked to economic growth by applying the Autoregressive Distributed Lag (ARDL) approach. This econometric technique has become widely used in studying dynamic relationships in economics, mainly because it allows researchers to separate short-run effects from long-run impacts and can be applied even when variables are integrated at different orders (Pesaran et al., 2001).

Various empirical investigations, as summarized in Table 1, have been conducted both in Afghanistan and in other countries—particularly within developing economies—using the ARDL framework.

Table 1. *Summary of Empirical Studies Using the ARDL Model to Examine the Relationship between Foreign Direct Investment, Trade, and Economic Growth*

Researcher(s)	Year	Model	Period	Findings
Abdul Fareed Delawari	2016	ARDL	2002–2016	A negative long-run relationship between security and FDI; security is a necessary condition for attracting investment.
Tariq Aziz et al.	2023	ARDL/ ECM	2002–2021	Greenfield FDI and remittances have a significant positive effect on growth; foreign aid and population have no significant effect.
Fardin Ahmad Sediqi	2025	ARDL	2001–2020	Government expenditure and development aid have a positive effect; FDI and trade deficit have a negative effect on growth.
Qiamuddin Andaish & Karimullah Mohammadi	2024	ARDL	2001–2021	In the long run, FDI has a negative effect on industrial development; government spending has a positive short-run effect.
Thaker et al.	2024	ARDL	1990–2019	FDI has a negative long-run effect; trade has a negative short-run effect.
Haidery & Sediqi	2021	ARDL	2003–2019	FDI has a positive long-run effect but a negative short-run effect.
Shinwari et al.	2024	ARDL	01Q1–2020Q4	FDI has a positive effect; bidirectional relationship between growth and natural resources.

Sediqi	2025	ARDL	2001–2020	Government expenditure and Official Development Assistance (ODA) have a positive effect; FDI and trade deficit have a negative effect.
Aziz et al.	2023	ARDL / ECM	2002–2021	Greenfield investment and remittances have a positive effect; foreign aid has no effect.

RESEARCH METHOD

This research is applied in nature and focuses on examining the causal links between major macroeconomic indicators, including foreign direct investment (FDI), international trade, and economic growth, with the purpose of generating policy recommendations for strengthening Afghanistan's economic development. Methodologically, the study adopts a quantitative framework and is based on time-series econometric analysis.

The study relies on secondary data, and appropriate statistical and econometric techniques are used to evaluate the hypotheses and identify the relationships among the selected variables. The data are obtained from the World Bank and span the period from 2000 to 2023. In the model specification, gross domestic product (GDP) represents the dependent variable, while foreign direct investment (FDI), exports, and imports are included as explanatory variables.

To analyze both short-term and long-term relationships among the variables, the Autoregressive Distributed Lag (ARDL) approach is applied. This method is chosen because it effectively captures dynamic interactions over time and is suitable for time-series data that may include variables with different orders of integration (Pesaran et al., 2001; Narayan, 2005).

***Table 2**. Characteristics and Definitions of Research Variables, Measurement Units, and Data Sources*

Variable Type	Variable Name	Symbol	Definition	Measurement Unit	Data Source
Dependent	Gross Domestic Product (constant prices)	GDP	Natural logarithm of total final goods and services produced in the economy, measured in constant 2015 USD.	Natural logarithm (billion constant 2015 USD)	World Bank
Independent	Foreign Direct Investment, net inflows	FDI	Natural logarithm of total net foreign investment in the country, measured in current USD	Natural logarithm (million current USD)	World Bank

Independent	Export Value Index	EXP	Index of the value of exported goods and services, base year 2015 = 100	Index number	World Bank
Independent	Import Value Index	IMP	Index of the value of imported goods and services, base year 2015 = 100	Index number	World Bank

FINDINGS

This section presents the empirical results of the study based on the analysis of time-series data using the Autoregressive Distributed Lag (ARDL) model. The main purpose is to report the outcomes of the econometric tests and to evaluate the relationships among the variables.

The analysis begins with unit root tests to check the stationarity properties of the variables, followed by the determination of the optimal lag length. After that, a cointegration test is applied to assess whether a long-run relationship exists among the variables.

Furthermore, the short-run dynamics and the adjustment process toward long-run equilibrium are examined through the Error Correction Model (ECM). Finally, the long-run coefficients are estimated. All results are summarized and presented in the subsequent tables along with relevant statistical indicators.

Unit Root Test

Unit root testing is an essential step in time-series econometrics used to determine whether the variables are stationary. Stationarity implies that key statistical characteristics, such as the mean and variance, remain constant over time. If a series is non-stationary, it may produce misleading or spurious regression results (Gujarati & Porter, 2009). In these tests, the null hypothesis assumes that a unit root is present, meaning the series is non-stationary; rejecting this hypothesis indicates stationarity.

In this research, the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests are employed to assess the order of integration of the variables. The findings show that certain variables are not stationary at their level forms but become stationary after first differencing. This outcome supports the appropriateness of using the ARDL approach. The detailed results of the unit root tests are reported in Table 3.

Table 3. *Results of PP and ADF Unit Root Tests for the Research Variables*

Variable	ADF (Level)	PP (Level)	ADF (1st Difference)	PP (1st Difference)	Integration Order
GDP	-4.136***	-4.179***	-9.062***	-16.57***	I(0)
FDI	-1.666	-1.857	-3.925**	-3.555**	I(1)
EXP	-0.403	-0.403	-4.378***	-4.378***	I(1)
IMP	-1.883	-1.894	-4.272***	-4.272***	I(1)

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

The outcomes of the Augmented Dickey–Fuller (ADF) and Phillips–Perron (PP) unit root tests are reported in Table 3. To improve interpretation, the integration order of each variable is also indicated.

According to the findings, the Gross Domestic Product (GDP) series is stationary in its level form, as the null hypothesis of a unit root is rejected at the 1% significance level under both ADF and PP tests. This confirms that GDP is integrated of order I(0).

On the other hand, Foreign Direct Investment (FDI), exports (EXP), and imports (IMP) are found to be non-stationary at levels, since the unit root hypothesis cannot be rejected. However, after taking the first difference, all these variables become stationary under both tests at standard significance levels, implying that they are integrated of order I(1).

The presence of a mix of I(0) and I(1) variables supports the application of the Autoregressive Distributed Lag (ARDL) approach, which is appropriate for modeling relationships among variables with different integration orders, as long as none of them is integrated of order I(2).

Optimal Lag Length

Selecting an appropriate lag length is a crucial step in time-series econometric modelling, as it directly influences the reliability and efficiency of the estimated results. Choosing too few or too many lags may lead to issues such as serial correlation, inefficient parameter estimates, or unnecessary model over-parameterization.

To identify the most suitable lag structure, commonly used information criteria are applied, including the Akaike Information Criterion (AIC), Schwarz Criterion (SC), Bayesian Information Criterion (BIC), and Hannan–Quinn Criterion (HQ). These measures evaluate the trade-off between goodness of fit and model simplicity.

The optimal lag length is determined by selecting the specification with the lowest value of these criteria. In practice, the SC criterion typically prefers more parsimonious models, whereas the AIC tends to favor specifications with stronger explanatory power and relatively more parameters (Nkoro & Uko, 2016).

Diagnostic Tests

Diagnostic checking in the ARDL framework is carried out to verify the reliability, consistency, and overall adequacy of the estimated model. These post-estimation tests are essential to ensure that the underlying assumptions of the regression are not violated.

In this study, the serial correlation of residuals is examined using the Breusch–Godfrey test, while the presence of heteroscedasticity is assessed through the White test. In addition, the Jarque–Bera test is applied to evaluate whether the residuals follow a normal distribution. Collectively, these diagnostic procedures provide evidence regarding the stability and robustness of the model estimates (Gujarati & Porter, 2009; Pesaran, Shin, & Smith, 2001; Brooks, 2014).

Table 4. *Interpretation of Diagnostic Test Results*

Test Name	Null Hypothesis	Probability	Interpretation / Decision
Breusch-Godfrey LM Test	No serial correlation detected.	0.566	Null hypothesis not rejected; residuals are free from serial correlation
White Test	Homoscedasticity of errors	0.685	Null hypothesis not rejected; residuals have constant variance
Jarque-Bera Test	The residuals follow a normal distribution.	0.587	Null hypothesis not rejected; residuals follow a normal distribution

The outcomes of the three diagnostic tests suggest that the estimated model meets the key classical linear regression assumptions. In particular, there is no evidence of serial correlation, the variance of the errors is stable, and the residuals are normally distributed. Overall, these results confirm that the model is statistically sound and appropriate for empirical analysis and inference.

Long-Run Relationship Test in the ARDL Model

The long-run relationship within the ARDL framework is assessed through the cointegration test, which is used to determine whether the variables share a stable equilibrium connection over time. This procedure is typically implemented via the bounds testing approach based on the F-statistic. In this setting, the null hypothesis states that no long-term relationship exists among the variables. When the computed F-statistic is higher than the upper bound critical value, the null hypothesis is rejected, confirming the existence of cointegration and a long-run association among the variables (Pesaran, Shin, & Smith, 2001).

Table 5. *Bounds Test for Long-Run Relationships*

Null Hypothesis	Test Statistic	Value
No Long-Run Relationships Exist	F-statistic	7.8

Critical Value Bounds

Significance Level	Lower Critical Bound	Upper Critical Boun
10%	2.676	3.586
5%	3.272	4.306
1%	4.614	5.966

Source: Research findings

Since the null hypothesis is rejected, it indicates the presence of a statistically significant long-run relationship among the variables. Accordingly, the ARDL framework is suitable for capturing long-term dynamics, and the estimated long-run coefficients can be interpreted in a meaningful and reliable manner.

Short-Run Relationships and Error Correction Model (ECM)

This part of the analysis focuses on evaluating the short-term dynamics between the explanatory variables and the dependent variable, as well as the adjustment process toward long-run equilibrium. The Error Correction Model (ECM) captures the proportion of disequilibrium that is corrected over time following short-run disturbances.

A key feature of the ECM is the error correction term, which reflects the speed of adjustment back to equilibrium. A negative and statistically significant coefficient of this term confirms that any short-term deviations are gradually corrected, ensuring convergence of the system toward its long-run equilibrium path (Gujarati & Porter, 2009; Pesaran, Shin, & Smith, 2001).

Table 6. *ARDL(1,0,1,1) Model Estimation and Error Correction Model (ECM) Results*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COINTEQ*	-0.269409	0.038517	-6.994601	0.0000
D(EXP)	-0.003012	0.000830	-3.629651	0.0017
D(IMP)	0.004387	0.000790	5.549901	0.0000

Source: Research findings

The results of the ARDL (1,0,1,1) model indicate the short-run relationships of exports, imports, and the adjustment speed toward long-run equilibrium in Afghanistan's economy. The negative and significant error correction coefficient (−0.2694) implies that approximately 27% of the deviation of GDP from its long-run equilibrium is corrected in each period. This relatively high adjustment speed reflects the strong dynamics of Afghanistan's economy in returning to equilibrium after short-term economic shocks. The presence of a significant negative ECM coefficient is a key indicator confirming the existence of a long-run cointegrated relationship among the variables in the ARDL model (Pesaran et al., 2001).

The export variable has a negative coefficient (−0.0030) and is statistically significant, indicating that in the short run, an increase in exports has a significant negative effect on GDP. This finding may reflect specific characteristics of Afghanistan's economy, where short-term export growth can involve transitional costs, fluctuations in foreign markets, or infrastructure and security constraints. Additionally, Afghanistan's export sector is primarily based on primary commodities with low added value, and their instability may generate a negative short-term impact on growth (World Bank, 2023).

Conversely, the import variable has a positive coefficient (0.0044) with statistical significance, confirming that an increase in imports contributes positively to short-run GDP growth. This outcome is consistent with Afghanistan's economy, which heavily depends on imported capital goods, raw materials, and intermediate products. Imports play a vital role in providing production infrastructure and accelerating the economic growth process (Asian Development Bank, 2022).

Long-Run Equilibrium Estimation Using the ARDL Model

In the ARDL framework, long-run estimation is conducted to capture the enduring impact of independent variables on the dependent variable. After confirming the presence of a cointegrating relationship among the variables, the long-run coefficients are obtained by combining the estimated parameters of the model, reflecting the system's equilibrium in the long term. These coefficients illustrate how sustained changes in the independent variables influence the dependent variable over time (Pesaran et al., 2001).

Table 7. *Long-Run Estimates (ARDL(0,1,1))*

Dependent Variable: lnGDP				
Variable *	Coefficient	Std. Error	t-Statistic	**Prob**
LFDI	0.177545	0.071344	2.488559	**0.0223**
EXP (-1)	0.001168	0.001525	0.766270	**0.4529**
IMP (-1)	0.012137	0.002202	5.512459	**0.0000**
C	19.38574	1.167949	16.59810	**0.0000**

Source: Research findings

This study utilizes a mix of logarithmic and level-form variables to estimate the long-run relationships among the variables. In particular, the dependent variable, Gross Domestic Product (GDP), along with certain explanatory variables such as Foreign Direct Investment (FDI), are expressed in natural logarithmic form. In contrast, other variables, including exports and imports, are maintained in their original levels. Therefore, the specified model follows a semi-logarithmic (semi-log) functional form.

The use of a semi-log model is justified on both theoretical and empirical grounds. First, applying a logarithmic transformation to variables such as GDP and FDI helps reduce heteroscedasticity and improves the normality of the data distribution. Second, this transformation allows for the interpretation of coefficients in elasticity terms, where the coefficients of logged variables represent the percentage change in the dependent variable associated with a one percent change in the independent variable.

In contrast, retaining variables such as exports and imports in level form is justified by the fact that these variables exhibit high volatility and, in some periods, values close to zero within the Afghan economic structure. Logarithmic transformation of such variables could lead to the loss of observations or introduce bias in the estimations. Moreover, in a semi-log specification, the coefficients of level variables represent the absolute the variation in the dependent variable corresponding to a one-unit increase in the independent variable.

Therefore, the selection of a semi-logarithmic specification in this study is both theoretically and empirically justified, given the characteristics of the data used. This approach also allows for a more precise interpretation of the relationships among the variables.

The estimated coefficient on the logarithm of Foreign Direct Investment (LFDI) is 0.1775, suggesting that a 1% rise in FDI is associated, in the long run, with an increase of about 0.18% in real Gross Domestic Product (LGDP) in Afghanistan. This positive and statistically significant relationship underscores the important role of foreign investment in promoting economic expansion and strengthening domestic productive capacity, particularly in an economy characterized by limited capital resources. Moreover, this result aligns with both theoretical expectations and empirical findings from developing and fragile economies, where FDI is widely recognized as a key contributor to economic growth and development.

The estimated coefficient for exports with a one-period lag (EXPORT(-1)) is 0.001168 and is statistically insignificant. This lack of significance suggests that exports have not exerted a meaningful impact on long-run GDP growth over the study period. This may be attributed to the limited and underdeveloped structure of Afghanistan's exports, which are predominantly based on raw materials and non-industrial goods. Moreover, weak infrastructure, security challenges, limited access to global markets, and trade barriers have constrained the country's ability to fully benefit from its export potential.

On the other hand, the coefficient for imports with a one-period lag (IMPORT (-1)) is 0.012137 and is highly statistically significant. This implies that a 1% increase in imports with a one-period lag leads to a 0.012% increase in Afghanistan's GDP in the long run. This positive relationship reflects the crucial role of imports in supplying capital goods, raw materials, and technologies required for production and economic reconstruction. Given Afghanistan's structural dependence on imports due to limited domestic production capacity, this result suggests that facilitating imports can enhance productivity and accelerate economic growth.

The constant term (Intercept), estimated at 19.38574, is highly statistically significant and represents the baseline level of economic growth determined by factors outside the model.

Overall, the error correction model results confirm that foreign direct investment and imports are two key and significant determinants of long-run economic growth in Afghanistan, while the impact of exports remains limited under current conditions. Therefore, Afghan policymakers should adopt appropriate strategies to enhance foreign investment inflows and reduce barriers to the import of capital and intermediate goods in order to create the necessary conditions for sustainable and inclusive economic growth. Furthermore, improving export infrastructure, expanding productive capacity, and enhancing access to global markets are additional priorities that can strengthen the long-run positive impact of exports on economic growth.

CUSUM and CUSUMSQ Structural Stability Tests

The Cumulative Sum (CUSUM) test is a standard method for assessing the structural stability of econometric models. By analyzing the cumulative sum of recursive residuals, it identifies gradual or sudden changes in the model parameters. If the CUSUM plot remains within the

5% confidence bounds, the structural stability of the parameters is confirmed (Brown et al., 1975).

Similarly, the Cumulative Sum of Squares (CUSUMSQ) test operates like the CUSUM test but is more sensitive to sudden shifts, using the cumulative sum of squared residuals. It serves as a complementary test to ensure parameter stability (Pesaran & Pesaran, 1997).

Figures 1 and 2 display the CUSUM and CUSUMSQ tests, respectively. In both plots, the calculated statistics lie within the 5% critical boundaries, suggesting that the estimated short- and long-run coefficients of the ARDL error correction model are stable over time. Accordingly, there is no evidence to reject the null hypothesis of parameter stability.

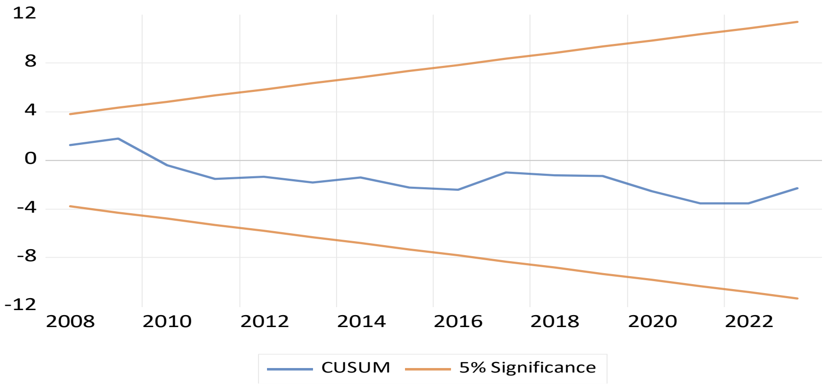

Figure 2. *CUSUM-Based Stability Test of the Estimated Model*

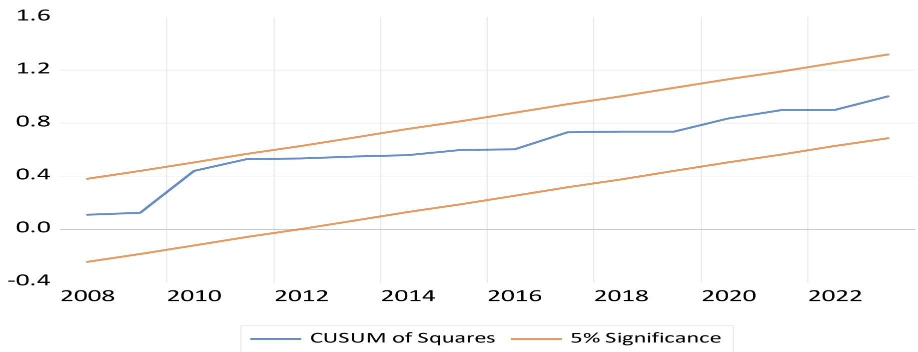

Figure 3. *CUSUMSQ Stability Test*

DISCUSSION AND CONCLUSION

The estimation results of the model reveal that the error correction term is negative and statistically significant (−0.2694), implying an adjustment speed of about 27% per period toward long-run equilibrium in GDP. This confirms the presence of a stable cointegrating relationship among the variables and reflects the dynamic adjustment process of the Afghan economy toward its long-term path. From an Islamic economic perspective, such convergence toward equilibrium is consistent with the principle of balance (adl) and stability in economic systems, where sustainable growth is achieved through real-sector alignment rather than imbalances driven by purely financial or speculative activities.

In the short-run analysis, exports carry a negative and statistically significant coefficient (−0.0030), suggesting that increases in exports are associated with a decline in GDP growth during the short term. This outcome may be explained by structural bottlenecks, limited infrastructure, and prevailing security and market uncertainties. From a Sharia-compliant perspective, such inefficiencies may reflect elements of excessive uncertainty (gharar) and weak real-sector foundations, which limit the capacity of export activities to generate sustainable economic value. On the other hand, imports show a positive and significant coefficient (0.0044), indicating that they contribute positively to short-term economic performance, possibly through the provision of essential intermediate and capital goods. This aligns with Islamic financial principles that emphasize asset-backed and productivity-enhancing economic activities.

Regarding the long-run estimates, Foreign Direct Investment (FDI) has a positive and statistically significant coefficient (0.1775), implying that a 1% increase in FDI results in approximately a 0.18% rise in real GDP. This finding highlights the essential role of FDI as a key engine of economic growth in Afghanistan. Within the framework of Islamic finance, such positive effects are most consistent when investment is directed toward real economic activities and structured through equity-based and profit-and-loss sharing arrangements, rather than debt-driven or interest-based financing mechanisms. In contrast, exports exhibit a positive but statistically insignificant long-run effect (0.001168), indicating that they do not meaningfully contribute to sustained economic growth, which may be due to structural weaknesses and security constraints in the export sector. From an Islamic economic viewpoint, this also suggests the need for strengthening productive capacity, value addition, and market transparency to ensure that trade contributes to broader social welfare (maslahah). Imports, however, show a positive and highly significant long-run impact (0.012137), emphasizing their importance in facilitating access to capital goods, technology, and inputs necessary for economic development, in line with the principle of supporting real-sector expansion.

Overall, the results of this study—particularly the strong positive influence of FDI and the significant role of imports in the long run—are broadly in line with certain empirical studies, while differing from others, reflecting the heterogeneous nature of findings in the existing literature. From an Islamic finance perspective, such variation further highlights the importance of institutional quality, governance, and ethical economic conduct in determining whether financial flows translate into real economic benefits.

For instance, Thaker et al. (2024), employing an ARDL approach, report that foreign direct investment exerts a significant negative impact on long-run economic growth, while free trade shows a negative short-run effect and an insignificant influence in the long run. These results are in contrast with the findings of the present study, which demonstrate a positive and statistically significant long-term effect of FDI on economic growth. This divergence may be explained by Afghanistan's specific economic context, where foreign investment plays a crucial role in compensating for limited domestic capital and facilitating technology transfer. In Islamic economic terms, the effectiveness of such investment depends on its alignment with productive activities and equitable resource allocation, whereas in other contexts, institutional weaknesses or misallocation may lead to outcomes inconsistent with the principles of justice (adl).

In a similar vein, Sediqi and Haidery (2021) document a combination of positive long-run and negative short-run effects of FDI, which they attribute to possible crowding-out dynamics in the short term. The current study's results, particularly the negative short-run impact of exports on GDP growth and the relatively rapid adjustment indicated by the error correction mechanism, are broadly consistent with this interpretation. From an Islamic perspective, such short-term imbalances may reflect transitional inefficiencies, while long-term improvements depend on strengthening real-sector linkages and reducing uncertainty in economic transactions.

Furthermore, Shinwari et al. (2024) find that FDI positively influences economic growth in both the short and long run and identify a bidirectional relationship among FDI, economic growth, and natural resources. While the present study also confirms the positive long-run contribution of FDI, the absence of relevant data on natural resources prevents an examination of such interaction effects within the current model framework. Nevertheless, Islamic economic principles would emphasize the responsible and equitable utilization of natural resources as part of sustainable development.

In contrast, Sediqi (2025) finds that government expenditure and official development assistance (ODA) have a positive and statistically significant effect on economic growth, whereas foreign direct investment exerts a negative influence. This outcome is likely associated with the prevailing institutional weaknesses and political–economic conditions in the examined context. Such findings emphasize that the growth impact of FDI is highly dependent on institutional quality, security conditions, and structural characteristics. From an Islamic finance viewpoint, weak governance, lack of transparency, and inequitable distribution of resources may hinder the realization of economic benefits and contradict the principles of accountability and fairness.

Similarly, Aziz et al. (2023) report that greenfield investment and remittance inflows significantly and positively contribute to economic growth, which is broadly consistent with the positive long-run effect of investment identified in the present study. However, their evidence suggests a more limited role for foreign aid, which may be attributed to differences in sample period, geographical coverage, and the nature of aid flows considered. From an Islamic perspective, this reinforces the idea that sustainable growth is better supported by productive investment rather than dependency on external transfers.

Overall, the variation in empirical results regarding the effects of FDI and trade openness on economic growth highlights the sensitivity of these relationships to country-specific structural, institutional, and temporal factors. In the case of Afghanistan, its distinct security and economic conditions suggest that policies aimed at attracting productive foreign investment, strengthening infrastructure, and facilitating the import of capital goods are essential for supporting sustainable long-term growth, while export performance may require more comprehensive structural and institutional reforms. In line with Islamic financial principles, such policies should promote real-sector development, risk-sharing mechanisms, transparency, and social welfare, thereby ensuring that economic growth is not only sustained but also equitable and ethically grounded.*Policy*

Recommendations for Afghan Economic Policymakers

1. **Enhancing macroeconomic stability and accelerating convergence toward equilibrium :** Given the negative and statistically significant error correction coefficient (−0.2694), there is a clear need for well-coordinated fiscal and monetary policies aimed at reducing short-run macroeconomic volatility and improving the speed of adjustment toward long-run equilibrium. From an Islamic economics perspective, macroeconomic stability reflects the principle of adl (justice), which emphasizes balance and the avoidance of excessive fluctuations in economic activity
2. **Addressing structural constraints in the export sector:** Since exports exhibit a negative and statistically significant short-run effect on economic growth, it is essential to improve trade-related infrastructure, strengthen security conditions, and reduce institutional and market inefficiencies that limit export competitiveness. In Islamic economic terms, reducing excessive uncertainty (gharar) in commercial transactions is crucial for enhancing efficiency, fairness, and market stability.
3. **Promoting imports of capital goods and advanced technologies:** Considering the positive and significant contribution of imports to both short-run and long-run economic growth, policy measures such as simplifying import procedures, reducing unnecessary tariffs, and facilitating access to modern technologies are strongly recommended. This is consistent with Islamic economic principles that emphasize real-sector development and productivity enhancement through asset-backed economic activities.
4. **Creating a conducive environment for attracting Foreign Direct Investment (FDI):** Given the strong positive long-run effect of FDI on economic growth, policymakers should focus on improving political and economic stability, strengthening the legal and regulatory framework for investors, and introducing targeted incentives to attract and retain foreign capital. In Islamic finance, investment is most desirable when it is structured through equity-based, profit-and-loss-sharing mechanisms that promote risk-sharing and real economic activity rather than debt-based financing.
5. **Diversifying and upgrading export capacity:** Although exports are statistically insignificant in the long run, efforts should be directed toward improving product quality, enhancing competitiveness, and expanding access to international markets. From an Islamic perspective, increasing value-added production contributes to maslahah (public welfare) by promoting socially beneficial and ethically sound economic activities.
6. **Strengthening governance and institutional quality:** Reforms aimed at improving administrative efficiency, reducing corruption, and enhancing transparency are

essential to build investor confidence and create a more predictable business environment for both domestic and foreign investors. Islamic economic principles strongly emphasize accountability (amanah), transparency, and justice in governance and resource allocation.

7. **Expanding physical and digital infrastructure:** Investments in transportation systems, energy supply, and information and communication technologies are crucial for reducing production and transaction costs and facilitating domestic and international trade. These interventions align with the Islamic principle of facilitating ease (taysir) and improving overall social welfare.
8. **Designing balanced and development-oriented trade policies:** Given the overall positive role of trade in economic performance, adopting a more open trade regime combined with strategic support for key domestic industries is necessary to ensure inclusive and sustainable economic growth. From an Islamic economic perspective, such policies should simultaneously promote fairness, support productive sectors, and enhance societal welfare while maintaining ethical and equitable economic conduct.

AUTHORS' CONTRIBUTIONS

1. Karimullah Mohammadi is the principal author of this article. He was responsible for data collection, model estimation, and empirical analysis, and played a central role in organizing and preparing the dataset used in the study.
2. Mohammad Mahfoz Faqiri contributed significantly to the writing of key sections of the paper, particularly the introduction, literature review, and conclusion, and provided valuable academic guidance that improved the overall quality and structure of the manuscript.

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The authors declare that they have no conflict of interest related to the conduct, outcomes, or publication of this research.

DATA AVAILABILITY STATEMENT

The data used in this study were collected from reputable international databases, particularly the World Bank, as time-series data from official secondary sources. They include key macroeconomic variables such as Gross Domestic Product (GDP), Foreign Direct Investment (FDI), Export Value Index (EXP), and Import Value Index (IMP). Since these data are publicly available, they can be accessed through the respective databases. However, the processed datasets and final data used in the analysis are available from the corresponding author upon reasonable request.

REFERENCES

Andaish, Q., & Mohammadi, K. (2024). Impact of fiscal policy on the industrial development of Afghanistan (2001–2021): An ARDL model approach. *South Asian Journal of Social Studies and Economics, 21*(10), 14–25. https://doi.org/10.9734/sajsse/2024/v21i10887

Asiedu, E. (2006). Foreign direct investment in Africa: The role of natural resources, market size, government policy, institutions and political instability. *The World Economy, 29*(1), 63–77. https://doi.org/10.1111/j.1467-9701.2006.00758.x

Asian Development Bank. (2022). Asian development outlook 2022: *Economic recovery in Asia*. https://www.adb.org/publications/asian-development-outlook-2022

Aziz, M., Shinwari, M. A., & Haq, I. (2023). Impact of greenfield foreign direct investment on economic growth of Afghanistan: An ARDL/ECM approach. *Afghan Economic Review*. Link

Aziz, T., Raza, A., Tarakai, M., & Hassan, S. (2023). Impact of greenfield foreign direct investment on economic growth of Afghanistan (2002–2021): ARDL and ECM approach. *Liberal Arts and Social Sciences International Journal*, 7(1), 187–201. https://doi.org/10.47264/idea.lassij/7.1.12

Brown, R. L., Durbin, J., & Evans, J. M. (1975). Techniques for testing the constancy of regression relationships over time. *Journal of the Royal Statistical Society*: Series B, 37(2), 149–192. https://doi.org/10.1111/j.2517-6161.1975.tb01532.x

Brooks, C. (2014). Introductory econometrics for finance (3rd ed.). *Cambridge University Press*. https://doi.org/10.1017/CBO9781139540872

Delawari, A. F. (2016). A time series analysis of determinants of foreign direct investment in Afghanistan: Security or economic growth? An ARDL model approach. *Journal of Emerging Economies and Islamic Research, 4*(2). https://doi.org/10.24191/jeeir.v4i2.03

Dunning, J. H. (1993). Multinational enterprises and the global economy. Addison-Wesley.

Gujarati, D. N., & Porter, D. C. (2009). Basic econometrics (5th ed.). McGraw-Hill.

Haidery, M., & Sediqi, J. (2021). Impact of foreign direct investment on economic growth of Afghanistan: An ARDL bounds testing approach. *Journal of Economic Studies*. https://scholar.google.com/scholar?q=Haidery+Sediqi+ARDL+Afghanistan+2021

Hobbs, S., Paparas, D., & AboElsoud, M. E. (2023). Does foreign direct investment and trade promote economic growth? Evidence from Albania. *Journal of Economic Development, 48*(2), 123–145. https://doi.org/10.35866/caujed.2023.48.2.123

Kakar, P. H., & Qureshi, M. A. (2017). The impact of foreign direct investment and trade on economic growth of Pakistan and Afghanistan. *Journal of Economics and Sustainable Development, 8*(19), 123–132. https://iiste.org/Journals/index.php/JEDS

Narayan, P. K. (2005). The saving and investment nexus for China: Evidence from cointegration tests. *Applied Economics, 37*(17), 1979–1990. https://doi.org/10.1080/00036840500278103

Nkoro, E., & Uko, A. K. (2016). Autoregressive distributed lag (ARDL) cointegration technique: Application and interpretation. *Journal of Statistical and Econometric Methods, 5*(4), 63–91. https://scholar.google.com/scholar?q=Nkoro+Uko+ARDL+2016

Pesaran, M. H., & Pesaran, B. (1997). Working with Microfit 4.0: Interactive econometric analysis. Oxford University Press.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics, 16*(3), 289–326. https://doi.org/10.1002/jae.616

Rai, S., Kumar, P., & Singh, R. (2019). Sustainable economic growth and its role in development. *Journal of Sustainable Development, 12*(3), 45–60. https://doi.org/10.5539/jsd.v12n3p45

Sahoo, P., & Khan, M. (2010). Foreign direct investment in South Asia: Policy, trends, impact and determinants. *ADB Economics Working Paper Series*. https://doi.org/10.2139/ssrn.1613421

Sediqi, F. A. (2025). Government expenditure and economic growth in Afghanistan (2001–2020): An ARDL model approach. *Journal of Social Sciences and Humanities, 2*(1), 32–46. https://jssh.edu.af

Sediqi, J. (2025). The impact of government expenditure, ODA, FDI, and trade deficit on economic growth in Afghanistan: Evidence from an ARDL approach. Journal of Social Sciences and Humanities, 3(1), 22–41. https://jssh.edu.af

Shinwari, R., Zakeria, I., Usman, M., & Sadiq, M. (2024). Revisiting the relationship between FDI, natural resources, and economic growth in Afghanistan: Does political (in) stability matter? *Journal of the Knowledge Economy, 15*(2), 5174–5203. https://doi.org/10.1007/s13132-023-01264-2

Thaker, M. A. M. T., Baryal, B., & Taghizadeh-Hesary, F. (2024). The effect of foreign direct investment on economic growth in Afghanistan: An empirical insight. *International Journal of Emerging Markets.* https://doi.org/10.1108/IJOEM-04-2023-0666

World Bank. (2023). Afghanistan development update. https://www.worldbank.org/en/country/afghanistan/publication

Zafar, K. M. (2020). ARDL analysis of the relationship among exports, FDI, current account deficit, and economic growth in Pakistan. *Iranian Economic Review*. https://doi.org/10.22059/IER.2020.76010