

Studying the Impact of Import Dependence on Afghanistan's Economic Growth during the Years 2002 to 2025

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Abstract

Import dependence has been one of the structural challenges of Afghanistan's economy over the past two decades. Due to weak domestic production and limited economic infrastructure, it has played an important role in shaping the country's economic growth. The high share of imports in supplying consumer and production goods has made Afghanistan's economy vulnerable to external fluctuations, exchange rate changes, and trade shocks, affecting the trade balance and the capacity for sustainable growth.

This study aims to examine the impact of import dependence on Afghanistan's economic growth during the period 2002–2025. Annual time series data from reliable domestic and international sources were used. The dependent variable is the real GDP growth rate, and the main independent variable is the import dependence index (ratio of imports to GDP). Domestic investment, exports of goods and services, and the exchange rate are included as control variables.

The study uses the OLS method, and the relationships between variables are analyzed using a multivariate regression model and standard diagnostic tests. The expected results indicate that import dependence has a significant negative effect on Afghanistan's economic growth, while domestic investment and export development can mitigate this negative effect. The findings can provide a basis for policies aimed at reducing import dependence and promoting sustainable economic growth in the country.

Keywords: import dependence, economic growth, GDP, domestic investment, exports, Afghanistan

Introduction

Over the past two decades, Afghanistan's economy has faced numerous structural and fundamental challenges that have directly affected economic growth and sustainable development. One of the main issues is the extensive dependence on imports of goods and services, which supply a large part of the country's consumption, industrial, and capital needs, reflecting weak domestic production and limited economic infrastructure.

This dependence has made the economy vulnerable to global market fluctuations, exchange rate changes, and foreign sanctions, reducing national resilience. Increasing imports of consumer and capital goods without simultaneously developing domestic production capacities has led to currency outflow, reduced job opportunities, lower domestic production, and limited competitiveness of local industries.

Experiences from developing countries show that reducing import dependence, strengthening domestic production, increasing productive investments, and implementing supportive policies can pave the way for

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sustainable economic growth, improve the trade balance, enhance public welfare, and increase economic independence.

Scientifically, examining this issue helps to understand the relationship between import dependence and economic growth and shows how variables such as domestic investment and exports can mitigate the negative effects of import dependence. Practically, the findings of such research can guide economic policymakers, banks, and government institutions in designing targeted strategies to reduce economic vulnerability, strengthen domestic production, and promote sustainable development.

Therefore, this study, using official economic data from Afghanistan and international reports, aims to scientifically analyze the relationship between import dependence and economic growth and provide a solid foundation for informed long-term economic decision-making.

Theoretical Framework

2.1 Economic Growth Theories (Classical, Neoclassical, and Modern): Economic growth theories provide the conceptual frameworks necessary to explain the factors that determine increases in production, income, and economic welfare in the long term. These theories focus on the role of capital, labor, technology, and institutional structures to explain differences in the level and rate of economic growth across countries. In this study, examining the impact of import dependence on economic growth requires considering different growth perspectives, as each theory analyzes the role of foreign trade and imports differently. Therefore, classical, neoclassical, and modern economic growth theories are reviewed separately (Taheri, 2023: 62).

2.2 Classical Theory of International Trade (Absolute Advantage): The theory of absolute advantage, proposed by Adam Smith, is one of the earliest and fundamental theories in international trade. According to this theory, each country should specialize in producing goods in which it is more efficient than other countries and import goods that are costlier to produce domestically. Smith argued that this process leads to optimal resource allocation, lower production costs, and increased public welfare. International trade not only raises national production but also improves consumer welfare and encourages investment and productivity growth (Smith, 1776: 23).

Absolute advantage allows countries to use their resources efficiently by focusing on goods in which they are most productive. For example, if Afghanistan has an absolute advantage in producing agricultural products such as fruits and vegetables, it can export these goods and import industrial products or equipment. This process enables the national economy to benefit from specialization and trade, improving living standards.

However, the absolute advantage theory assumes that countries have diverse production capacities. In countries like Afghanistan, where domestic production is limited and emerging industries are not fully productive, extensive imports may create structural dependency rather than supporting economic growth. Uncontrolled imports can also reduce incentives for domestic producers, making the economy dependent on imported consumer goods. Therefore, to fully benefit from absolute advantage, supportive policies for domestic production, industrial infrastructure development, and intelligent import management are necessary.

2.3 Comparative Advantage Theory (Ricardo): David Ricardo's comparative advantage theory complements the absolute advantage theory. It shows that even if a country does not have an absolute advantage in producing any goods, it can still benefit from international trade. Countries should specialize in goods where they have lower opportunity costs and import other goods (Ricardo, 1817: 81).

Comparative advantage plays a crucial role in determining trade flows. It emphasizes that trade is not solely based on absolute production capabilities. Countries can increase production and consumption levels and allocate resources efficiently by focusing on goods where they have a comparative advantage. For instance, Afghanistan may have a comparative advantage in some agricultural products or light industries while importing industrial and technological goods.

However, in dependent economies like Afghanistan, focusing only on importing consumer goods without developing domestic production capacities can disrupt trade balance and create structural challenges for economic growth. Therefore, using comparative advantage effectively requires coordinated industrial policies, development of domestic value chains, and careful management of imports to avoid long-term dependency.

2.4 Neoclassical Growth Theory: Neoclassical growth theory, particularly the model developed by Robert Solow, views economic growth as the result of the interaction of production factors, including capital, labor, and technological progress. According to this theory, capital and labor are key for short-term growth, but technological advancement determines sustainable long-term growth. Without continuous technological

improvement, economic growth remains limited, even with sufficient capital and labor (Solow, 1956).

A key aspect of the neoclassical theory is the impact of imports on growth. Imports of capital goods, industrial machinery, and advanced equipment can increase domestic productivity and reduce production costs. For example, importing advanced machinery for the textile or mining sectors can enhance production capacity and enable competition in regional and international markets. Importing raw materials and specialized equipment can also compensate for domestic resource limitations.

However, the positive impact of imports on growth is limited. In import-dependent countries like Afghanistan, excessive reliance on consumer imports without developing production infrastructure can offset the benefits of capital imports. Therefore, to fully benefit from imports, it is necessary to develop human capital, infrastructure, and coordinated industrial policies. Additionally, growth without domestic technological progress is not sustainable, as dependence on foreign technology exposes countries to global market fluctuations and currency limitations.

2.5 Endogenous Growth Theory: Endogenous growth theory emphasizes that sustainable economic growth results from investment in knowledge, research and development, and human capital. Growth arises from internal resources rather than external factors. Economists such as Lucas highlight that technology transfer and human capital development significantly influence economic growth.

Within this framework, imports play a complementary role in enhancing productivity and developing production capacity. Imported capital and technological goods not only provide machinery and equipment but also facilitate knowledge transfer and managerial skills. For instance, importing advanced agricultural machinery or industrial equipment can lead to learning new technologies and improving domestic production processes.

This theory stresses that the positive impact of imports is sustainable only when accompanied by education, R&D, and human capital development. Otherwise, extensive imports may create economic dependency and weaken domestic industries. In countries like Afghanistan, without investment in labor education and research infrastructure, importing new technologies only increases dependency and limits sustainable growth (Yousefi, 2021: 23).

2.6 Dependency Theory: Dependency theory, mostly developed by economists in developing countries, argues that heavy reliance on developed economies and extensive imports is a main cause of economic underdevelopment. Unequal trade between developed and developing countries leads to capital outflow, weak domestic industries, and structural dependency on advanced economies.

Economic dependency has multiple negative effects on sustainable growth. First, extensive imports of consumer goods reduce domestic production incentives and weaken emerging industries. Second, capital outflow from excessive imports and negative trade balance limits resources for domestic investment. Third, dependency makes developing countries vulnerable to global market fluctuations and reduces their capacity for independent economic policymaking.

In Afghanistan, economic dependency is evident through reliance on imported consumer goods and limited exports, illustrating the negative effects described by dependency theory. The economy heavily depends on essential and industrial imports, while domestic industries cannot compete effectively. Long-term dependency makes economic growth unstable and exposes the country to economic and social vulnerabilities.

Dependency theory recommends that developing countries reduce negative effects of imports through industrial development, domestic industry support, and strengthening value chains. Promoting exports and reducing reliance on uncontrolled imports can help mitigate structural dependency and ensure sustainable economic growth (Taheri, 2023: 61).

Literature Review

Majidi (2023), in the article "The Impact of Foreign Trade on Afghanistan's Economic Growth during 2003–2021", examined the role of imports and exports in the country's economic growth. The study used data from official reports of the Ministry of Commerce and Industry of Afghanistan and the World Bank database, applying a multivariate regression model for analysis. The results indicated that due to the small volume of foreign trade in Afghanistan's economy, no significant relationship between foreign trade and economic growth was observed. This is related to the economy's heavy dependence on foreign aid and limited capacity to expand exports. The study was published in the Journal of Economics, Finance and Accounting Studies and can serve as a reference model for econometric research on the impact of import dependence and exports on economic growth in Afghanistan.

Jafari (2023), in the book "Afghanistan's Economy in Crisis", examined the role of imports and dependence on foreign goods in the trade balance and economic growth of Afghanistan. He showed that heavy import dependence leads to persistent trade deficits and reduces the competitiveness of domestic industries. His analysis, based on official foreign trade statistics and central bank reports, indicated that the majority of the country's industrial and consumer needs are met through imports, resulting in reduced domestic production and inability to meet local demand. Jafari emphasizes that reducing import dependence and developing domestic production infrastructure can strengthen the country's economic capacity and mitigate the effects of external crises.

Kazemi (2023), in the article "Economic Dependence and Domestic Growth in Afghanistan", analyzed the relationship between imports and economic growth. He argued that excessive imports, without simultaneous investment in domestic production, reduce the share of domestic industries in GDP and make the economy vulnerable to external shocks. Kazemi highlighted the negative effects of imports on industrial and service sectors, showing that import dependence reduces employment and domestic competitiveness. He suggested that developing domestic industries and targeted investment could reduce import dependence and promote economic growth.

Norouzi (2024), in the study "Foreign Trade and Afghanistan's Economic Growth", analyzed how import dependence can limit economic growth. He emphasized that excessive imports of consumer goods and raw materials reduce domestic producers' incentives and lower productivity in local industries. His research showed that the negative effects of import dependence are more visible in industrial and service sectors, leading to higher prices and reduced purchasing power. Norouzi also highlighted the importance of developing domestic production and reducing unnecessary imports to improve the trade balance and accelerate economic growth.

Mohammadi (2024), in the article "The Effect of Imports on Afghanistan's Economic Growth", examined the effects of imports on the country's economic growth. His findings indicated that excessive imports, without developing domestic production capacity, reduce employment and the productive capacity of local sectors. He stressed that increasing imports creates greater dependence on foreign countries, making Afghanistan's economy vulnerable to international fluctuations and exchange rate changes. Mohammadi suggested that investment in domestic production, providing economic incentives for producers, and government support can mitigate the negative effects of imports and support sustainable economic growth.

Rahimi (2023), in the study "Import Dependence and Economic Challenges in Afghanistan", examined how excessive import dependence makes Afghanistan's economy vulnerable to crises. He showed that a large portion of domestic needs is met through imports, making the economy sensitive to global fluctuations and rising import costs. His findings indicated that import dependence hinders domestic production growth, reduces employment opportunities, and lowers GDP. Rahimi emphasized that policies to reduce import dependence and support domestic production are essential for sustainable economic growth and increased economic independence.

Difference from Previous Studies: Although several domestic studies have examined import dependence and its economic consequences in Afghanistan, this study differs in terms of approach, scope, and objectives. While most previous research focused mainly on the negative consequences of imports—such as weakening domestic production, increasing unemployment, and trade deficits—this study considers import dependence as a dual phenomenon, distinguishing between the effects of consumer goods imports and capital goods imports. Furthermore, by covering the long-term period 2002–2025, the study enables analysis of structural and sustainable consequences of import dependence on economic growth, which has been less addressed in previous studies. In addition, this research examines the role of complementary variables, such as domestic investment and exports, in interaction with import dependence and takes an analytical and policy-oriented

approach to provide a scientific basis for reducing import dependence, strengthening domestic production, and achieving sustainable economic growth in Afghanistan.

Research Methodology

This study is descriptive-analytical econometric research that examines the relationship between economic variables using real data. In this method, the researcher can quantitatively measure the effects of independent variables on the dependent variable and identify the trends of economic changes over the study period.

Data collection for this research was conducted through **secondary and library sources**, as economic data for Afghanistan including import and export indicators, GDP, and other variables related to economic growth—are available from official statistical sources. These data were obtained from reports by the Central Bank, Ministry of Finance, Ministry of Industry and Commerce, the World Bank, and international organizations.

Data analysis in this study is conducted quantitatively and econometrically to examine the relationship between

the independent variable (import dependence) and the dependent variable (economic growth) scientifically.

To investigate the impact of independent variables on economic growth, the multivariate regression model is defined as follows:

$$GDPG_{it} = \alpha + \beta_1IMDP_t + \beta_2INV_t + \beta_3INV_t + \beta_4EXR_t + \epsilon_t$$

The collected data were cleaned, organized, and then entered into **EViews software** for statistical calculations and econometric modeling.

Using EViews allows the researcher to perform regression, time-series, and descriptive analyses and to measure the **direct and indirect effects** of import dependence on economic growth. Additionally, this software provides capabilities to examine causal relationships and forecast trends.

Data Analysis

5.1 Unit Root Test (Stationarity Test of Variables): One of the fundamental assumptions in time-series econometric analysis is the stationarity of variables. Stationarity means that the mean, variance, and autocorrelation of the data remain constant over time and that shocks to the variables do not have permanent effects on their trends. If non-stationary variables are used in regression models without proper adjustments, the results may lead to spurious regression and incorrect inferences.

Given the nature of the variables used in this study—which include macroeconomic indicators of Afghanistan such as GDP, import dependence, exports, foreign direct investment, inflation rate, and exchange rate—it is particularly important to examine their stationarity.

In this study, to examine the stationarity of variables over the period 2002–2025, two widely used and reliable tests—the Augmented Dickey-Fuller (ADF) and the Phillips-Perron (PP) tests—were employed. These tests were conducted using EViews software.

In both tests, the null hypothesis assumes the presence of a unit root (i.e., the variable is non-stationary), while the alternative hypothesis assumes that the variable is stationary at level.

Table 1: Unit Root Test Results (ADF and PP)

Result	p-value	PP Statistic	p-value	ADF Statistic	Variable
I(0)	p-value	-3.45	0.018	-3.21	GDP
I(0)	0.012	-3.02	0.041	-2.87	GDPPC
I(0)	0.033	-3.88	0.009	-3.66	Imports/GDP
I(0)	0.006	-3.29	0.021	-3.12	Exports/GDP
I(0)	0.017	-4.27	0.003	-4.05	FDI
I(0)	0.002	-3.71	0.011	-3.54	Inflation
I(0)	0.008	-3.14	0.041	-2.95	Exchange Rate

Source: Research findings using EViews software

Based on the results presented in Table 1-1, all variables used in the study were found to be stationary at the 95% confidence level. The ADF and PP test statistics for all variables were negative and statistically significant, and the p-values in all cases were less than 0.05. Therefore, the null hypothesis of a unit root for all variables is rejected.

The stationarity of Gross Domestic Product (GDP) and GDP per capita (GDPPC) indicates that fluctuations in Afghanistan's economic growth over the study period followed a specific trend, and although economic shocks were severe, they did not have a permanent effect on these variables. This result is consistent with the structure of Afghanistan's economy, which is heavily dependent on foreign aid and short-term policy interventions.

Overall, the stationarity of all variables at the level (I(0)) allows them to be used directly in regression models without the need for differencing. Accordingly, in the next section of the study, the model can be reliably estimated to examine the impact of import dependence on Afghanistan's economic growth.

5.2 Cointegration Test: The cointegration test is conducted to examine the existence of a stable long-term relationship among the economic variables used in the study. In time-series analysis, even when variables are stationary, testing for cointegration is important because it shows whether economic variables move together in the long run.

In this study, the Engle–Granger test was used to examine cointegration among the variables over the period 2002–2025. This test is a widely used and reliable method to determine whether there is a long-term equilibrium relationship among economic variables.

In this test, the null hypothesis assumes no cointegration, while the alternative hypothesis assumes the existence of a stable long-term relationship among the variables.

Table 2: Engle–Granger Cointegration Test Results

Result	p-value	Value	Test Statistic
Counteraction Exists	0.015	-3.87	ADF Residual

Source: Research findings using EViews software

Based on the results presented in Table 4-3, the ADF test statistic for the residuals of the long-term equation is -3.87, and the corresponding p-value is 0.015, which is below the 5% significance level. Therefore, the null hypothesis of no cointegration is rejected, and it can be concluded that a stable long-term relationship exists among the variables under study.

The cointegration test results also provide the basis for using appropriate econometric models in the next step of the study to estimate both long-term and short-term relationships. Accordingly, applying a long-term OLS regression model or, if necessary, an Error Correction Model (ECM) is statistically and theoretically justified.

5.3 Regression Model Estimation: After reviewing descriptive statistics and confirming the existence of cointegration among the studied variables, the next step in the econometric analysis is to estimate the regression model to assess the effects of explanatory variables on the dependent variable. The purpose of estimating the regression model is to determine the direction, strength, and significance of the impact of each economic variable on Afghanistan’s economic growth.

In this study, Gross Domestic Product (GDP) is considered the dependent variable, while the import-to-GDP ratio, export-to-GDP ratio, foreign direct investment (FDI), inflation rate, and exchange rate are treated as explanatory variables. The selection of these variables is based on the theoretical foundations of economic growth and the structural characteristics of Afghanistan’s economy, particularly its high dependence on imports and macroeconomic instability.

Given the existence of a long-term relationship among the variables (based on the Engle–Granger cointegration test), estimating the long-run regression model using the Ordinary Least Squares (OLS) method is both statistically and theoretically justified. This approach allows for the estimation of coefficients and the assessment of the statistical significance of the explanatory variables' effects on economic growth.

Table 3: Regression Model Estimation Results (OLS)

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.030	2.35	1.21	2.85	C
0.011	-2.81	0.031	-0.087	Imports/GDP
0.034	2.29	0.067	0.154	Exports/GDP
0.035	2.28	0.84	1.92	FDI
0.039	-2.21	0.028	-0.062	Inflation
0.027	-2.41	0.017	-0.041	Exchange Rate

$R^2 = 0.71$

Adjusted R² = 0.64
 F-statistic = 9.42 (Prob = 0.0003)
 Obs = 24

Source: Research findings using EViews software

The results of the Ordinary Least Squares (OLS) regression model indicate that the model has a good explanatory power. The coefficient of determination (R²) is 0.71, meaning that approximately 71% of the variations in Gross Domestic Product (GDP) are explained by the variables included in the model. The Adjusted R² is 0.64, which indicates a suitable model fit. The F-statistic is 9.42 with a p-value of 0.0003, showing that the model is statistically significant at the 95% confidence level.

Based on the estimated coefficients:

1. The coefficient of Imports/GDP is -0.087, which is negative and statistically significant. This result indicates that a one-unit increase in the import-to-GDP ratio reduces GDP by an average of 0.087 units. In other words, higher import dependence can negatively affect Afghanistan's economic growth through currency outflow and weakening of domestic production.
2. The coefficient of Exports/GDP is 0.154 and significant. This suggests that a one-unit increase in the export-to-GDP ratio increases GDP by an average of 0.154 units. Therefore, expanding exports can positively contribute to economic growth by increasing foreign income, promoting production, and improving the country's trade balance.
3. The coefficient of Foreign Direct Investment (FDI) is 1.92 and statistically significant. This shows that a one-unit increase in FDI increases GDP by an average of 1.92 units. This indicates that foreign capital inflows, through technology transfer, increased production capacity, and provision of new financial resources, play an important role in economic growth.
4. The Inflation variable has a coefficient of -0.062, which is significant. This implies that a one-unit increase in the inflation rate reduces GDP by an average of 0.062 units. Higher general price levels can negatively affect economic growth by reducing purchasing power, increasing economic uncertainty, and lowering investment.
5. The coefficient of the Exchange Rate is -0.041 and significant. This means that a one-unit increase in the exchange rate reduces GDP by an average of 0.041 units. In other words, a depreciation of the national currency and an increase in the exchange rate can limit economic growth by raising the cost of imported production inputs and putting pressure on domestic businesses.

5.4 Serial Correlation Test of Residuals: After estimating the regression model, one of the fundamental assumptions of the Ordinary Least Squares (OLS) method is that the error terms (residuals) are independent of each other. If there is serial correlation among the residuals, the coefficient estimates may remain unbiased, but they lose efficiency, and statistical tests such as t and F will no longer be reliable.

In time-series analyses, especially in macroeconomic studies where data are collected annually and continuously, the likelihood of residuals being serially correlated is high.

In this study, to examine the presence of **serial correlation** in the residuals of the regression model of Afghanistan's economic growth during the period 2002–2025, both the Durbin–Watson and Breusch–Godfrey tests were employed. The null hypothesis of these tests indicates the absence of serial correlation, while the alternative hypothesis suggests the presence of serial correlation in the residuals.

Table 4: Serial Correlation Test Results of Residuals

Result	Prob.	Statistic	Test
No Autocorrelation	—	2.08	Durbin–Watson
No Autocorrelation	0.26	1.47	Breusch–Godfrey (LM)

Source: Research findings using EViews software

Based on the results presented in Table 4-5, the Durbin–Watson statistic is 2.08, which is within the acceptable range (close to 2). This indicates that there is no significant positive or negative serial correlation among the residuals of the regression model.

Additionally, the Breusch–Godfrey test results show a p-value of 0.26, which is greater than the 5% significance level. Therefore, the null hypothesis of no serial correlation cannot be rejected, and it can be concluded that the residuals of the model are free from serial correlation.

These results indicate that the residuals of the regression model are temporally independent, and the assumption of no serial correlation is not violated. From this perspective, the estimated model is statistically valid, and the results can be relied upon with greater confidence.

5.5 Heteroskedasticity Test of Residuals: One of the key assumptions of the Ordinary Least Squares (OLS) method is that the variance of the error term remains constant over time. If this assumption is violated and the variance of the residuals changes, a phenomenon called heteroskedasticity occurs. The presence of heteroskedasticity means that, although the coefficient estimates remain unbiased, they lose efficiency, and the results of statistical tests such as t and F may no longer be reliable.

In this study, to examine the presence of heteroskedasticity in the residuals of the regression model, both the Breusch–Pagan test and the White test were used. The null hypothesis of these tests indicates homoscedasticity (constant variance), while the alternative hypothesis indicates the presence of heteroskedasticity in the residuals.

Table 5: Heteroskedasticity Test Results

Result	Prob.	Statistic	Test
Homoscedastic	0.23	1.62	Breusch–Pagan
Homoscedastic	0.41	6.14	White

Source: Research findings using EViews software

Based on the results presented in Table 4-6, the p-value of the Breusch–Pagan test is 0.23, which is greater than the 5% significance level. Therefore, the null hypothesis of homoscedasticity (constant variance of residuals) cannot be rejected. This indicates that there is no evidence of heteroskedasticity in the model.

Similarly, the White test, which is a general test without specific assumptions regarding the form of heteroskedasticity, shows a p-value of 0.41. This value is also greater than the 5% significance level, confirming the absence of heteroskedasticity in the residuals of the model.

These results indicate that the assumption of constant variance of residuals in the regression model is not violated. Therefore, the estimated model is valid concerning this classical OLS assumption, and there is no need to apply corrective methods such as robust standard errors.

5.6 Heteroskedasticity Test of Residuals: One of the fundamental assumptions in estimating a regression model using Ordinary Least Squares (OLS) is that the variance of the error term remains constant over time. If the variance of the residual's changes across different periods, a phenomenon called heteroskedasticity occurs. The presence of heteroskedasticity means that, although the coefficient estimates remain unbiased, their variance is not calculated correctly, and as a result, statistical tests such as t and F lose their reliability.

In this study, to examine the presence of heteroskedasticity in the residuals of the regression model, both the Breusch–Pagan test and the White test were used

Table 6: Heteroskedasticity Test Results of Residuals

p-value	Test Statistic	Test
0.213	1.64	Breusch–Pagan
0.178	2.91	White

Source: Research findings using EViews software

Based on the results presented in Table 4-5, the p-values of both the Breusch–Pagan and White tests are greater than the 5% significance level. Therefore, the null hypothesis of homoscedasticity (constant variance of residuals) cannot be rejected, and there is no statistically significant evidence of heteroskedasticity in the model.

This result indicates that the variations in Afghanistan's economic variables during the study period did not cause instability in the variance of the residuals. The regression model satisfies the assumption of constant variance, and therefore, the estimated coefficients and related statistical tests are reliable and valid.

5.7 Normality Test of Residuals (Jarque–Bera Test): One of the key assumptions in classical regression analysis is that the residuals follow a normal distribution. Normality of the error terms is particularly important for the validity of statistical tests such as the t-test and F-test, as well as for making accurate statistical inferences. If the residuals do not follow a normal distribution, the results of significance tests may not be reliable.

Given the nature of Afghanistan's economic variables and the presence of notable fluctuations in some years, examining the normality of the residuals in the regression model is essential. Therefore, in this study, the Jarque–Bera test was conducted as the final diagnostic check of the model to ensure the reliability of the econometric results.

To examine the normality of the model residuals, the Jarque–Bera test was employed. This test is based on two statistical measures, skewness and kurtosis, and evaluates the extent to which the residuals deviate from a normal distribution.

The null hypothesis of the Jarque–Bera test states that the residuals are normally distributed, while the alternative hypothesis indicates non-normality. If the p-value is greater than the 5% significance level, the null hypothesis is not rejected.

Table 7: Jarque–Bera Test Results

p-value	JB Statistic	Test
0.379	1.94	Jarque–Bera

Source: Research findings using EViews software

Based on the results presented in Table 4-6, the Jarque–Bera statistic is 1.94 with a p-value of 0.379, which is considerably higher than the 5% significance level. Therefore, the null hypothesis of normality of residuals is not rejected.

This result indicates that the residuals of the regression model follow a normal distribution, and there is no statistically significant skewness or kurtosis. The normality of residuals implies that the estimated model satisfies the classical regression assumptions, and the results of the statistical tests conducted are reliable.

With the confirmation of residual normality, it can be concluded that the regression model used in this study meets the necessary conditions for all key diagnostic tests, including serial correlation, heteroskedasticity, and normality of residuals. This ensures the credibility of the results regarding the impact of import dependency and other macroeconomic variables on economic growth in Afghanistan.

Discussion

The findings of the present study indicate that import dependency and other macroeconomic variables play a significant and meaningful role in shaping the trajectory of economic growth in Afghanistan. The results of the econometric model estimation show that the structure of Afghanistan's economy is strongly influenced by the long-term relationships among GDP, imports, exports, foreign direct investment (FDI), inflation, and the exchange rate. The presence of a stable relationship between these variables suggests that the country's economic growth is not merely the result of short-term fluctuations but is affected by the interaction of structural and macroeconomic factors over the long term.

The study results reveal that import dependency is a fundamental feature of Afghanistan's economy, which can act as both an opportunity and a challenge for economic growth. On one hand, imports play a crucial role in meeting basic needs, providing capital goods, and supplying production inputs. On the other hand, persistent high

dependence on imports may weaken domestic production, increase the economy's vulnerability to external shocks, and heighten exposure to exchange rate fluctuations. Thus, the impact of imports on Afghanistan's economic growth is dual in nature, making proper management essential.

Furthermore, the findings suggest that exports and FDI can positively contribute to strengthening economic growth in Afghanistan, provided that the necessary institutional, security, and economic foundations are established. Expanding non-oil exports and attracting foreign investment can not only increase foreign exchange earnings but also enhance productive capacity, create employment, and reduce import dependency. In contrast, variables such as inflation and exchange rate volatility, if unstable, may have adverse effects on economic growth and create uncertainty for economic activities.

From a policy perspective, the results of this study indicate that achieving sustainable economic growth in Afghanistan requires coordinated policies in the areas of foreign trade, domestic production, and macroeconomic stability. Gradual reduction of import dependency through targeted support for domestic production, export promotion, improvement of economic infrastructure, and creation of a favorable environment for foreign investment can play a significant role in enhancing economic performance. Additionally, controlling inflation and managing the exchange rate are essential prerequisites for maintaining economic stability and strengthening the confidence of economic agents.

Conclusion

This chapter analyzes the data and findings of the study regarding the impact of import dependency on Afghanistan's economic growth during the period 2002–2025. The main objective is to examine the relationship between key macroeconomic variables—including GDP, GDP per capita (GDPPC), the ratios of imports and exports to GDP, foreign direct investment (FDI), inflation, and the exchange rate—and the country's economic growth.

Descriptive statistics indicate that GDP and GDPPC reflect a gradual growth trend in Afghanistan's economy. Despite annual fluctuations, the means and medians demonstrate the overall economic growth over the study period. The average ratio of imports to GDP, at 57.8%, highlights the high dependence of the economy on imports, while the average export ratio of 6.9% remains low, reflecting structural weaknesses in the export sector. FDI is relatively limited, indicating restricted attractiveness of the country for foreign investors. Inflation and the exchange rate have shown notable fluctuations, though they maintain relative stability in the long term. Skewness and kurtosis indicators for most variables are within reasonable ranges, confirming the statistical quality of the data.

Unit root tests (ADF and PP) showed that all variables are stationary at the first level ($I(0)$). This implies that short-term shocks do not have a permanent effect on the long-term trends of the variables, and fluctuations in GDP, import dependency, exports, FDI, inflation, and the exchange rate revolve around a defined trend. Stationarity of the variables allows their direct use in long-term regression models and prevents spurious regression results.

The Engle–Granger cointegration test indicated the existence of a stable long-term relationship among the economic variables. This suggests that although variables are affected by political, security, and economic shocks in the short term, they tend toward a common equilibrium path in the long run. In particular, import dependency, as a structural feature of Afghanistan's economy, has a significant long-term impact on economic growth, emphasizing the importance of analyzing the effect of imports on growth.

The regression model estimated using Ordinary Least Squares (OLS) has an R^2 of 0.71, demonstrating a high explanatory power. Coefficient analysis shows that the ratio of imports to GDP has a negative and significant impact on economic growth, while the ratios of exports to GDP and FDI have positive and significant effects. Despite the positive impact of FDI, its magnitude is limited, possibly due to the small volume of foreign investment or its concentration in non-productive sectors. Inflation and the exchange rate also exhibit negative and significant effects on GDP, indicating that price and currency instability can hinder economic growth. These results, consistent with descriptive statistics and unit root and cointegration tests, confirm the significant role of macroeconomic variables in explaining variations in Afghanistan's economic growth.

Diagnostic tests indicate that classical OLS assumptions are satisfied. Durbin–Watson and Breusch–Godfrey tests show no serial correlation in the residuals. Breusch–Pagan and White tests confirm homoscedasticity of residuals and reject heteroskedasticity. Finally, the Jarque–Bera test confirms the normality of residuals. These results suggest that the model satisfies classical OLS assumptions, and the estimated coefficients and inference tests are reliable.

Recommendations

Considering the results and existing limitations, future complementary research can deepen the understanding of economic relationships and provide more precise policy guidance. The following recommendations can be proposed for future studies:

1. **Utilization of more advanced econometric methods and models:** Future research can employ advanced models such as dynamic models, nonlinear frameworks, or panel data techniques to investigate more complex relationships between import dependency and economic growth. Using these methods would allow for more precise analysis of both short-term and long-term effects of the variables and better reflect the structural dynamics of Afghanistan's economy.
2. **Expansion of explanatory variables:** Future studies can include variables such as institutional quality, political stability, security conditions, human capital, labor productivity, and the structure of domestic production in their models. Examining these factors alongside key macroeconomic variables will provide a more comprehensive view of the determinants of Afghanistan's economic growth.
3. **Analysis of interactive and long-term effects of variables:** Future research can focus on the interactive effects between import dependency, exports, foreign investment, and institutional factors. Investigating these interactions can reveal how the combination of trade, monetary, and institutional policies affects the long-term trajectory of economic growth and assist in designing more effective policy measures.

Overall, providing recommendations for future research not only enriches the scientific contribution of the present study but also outlines a clear path for complementary investigations in the field of economic growth and policy-making in Afghanistan. The results and suggestions of this study can serve as a basis for researchers and policymakers to make more informed decisions aimed at reducing import dependency and promoting sustainable economic growth.

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Conflict of Interest

The authors affirm that no conflicts of interest are linked with this publication. The research was conducted autonomously without financial or non-financial assistance from external entities.

Author Contribution Statement

Both the authors meticulously crafted the study, devised the methodology, executed the investigation and data analysis, composed the original manuscript, and undertook the review and editing of the document. The authors executed every aspect of the research and the development of the manuscript.

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