

رابطه‌ی تجارت و رشد اقتصادی در افغانستان؛ شواهدی از الگوی ARDL

دکتر سیداحمدراشد اشرفی^۱

دکتر منوچهر موحد^۲

دکتر عبدالواحد نادری^۳

حنیف الله حکیمی^۴

چکیده

رابطه بین تجارت خارجی و رشد اقتصادی، به ویژه در کشورهای در حال توسعه، موضوعی بحث‌برانگیز است. تمرکز اصلی این مطالعه بررسی تأثیر واردات و صادرات بر رشد اقتصادی افغانستان در مقطع زمانی ۱۹۹۰ تا ۲۰۱۹ می‌باشد. در این تحقیق، از ضریب ARDL، آزمون مرزی (Bound Test) برای بررسی رابطه بلندمدت و روش Structural Breakpoint در مدل (ADF) استفاده شده است. نتایج تحلیل ARDL نشان می‌دهد که تجارت بین‌المللی در بلندمدت تأثیر مثبت و معناداری بر رشد اقتصادی افغانستان دارد (با سطح معنی‌داری ۵ درصد). در کوتاه‌مدت نیز، واردات و صادرات تأثیر مثبت و قابل توجهی بر گسترش اقتصادی افغانستان دارند. ضریب ECT با مقدار منفی ۲ نشان‌دهنده نرخ تعدیل مناسب به سمت تعادل بلندمدت بوده و وجود رابطه علی و بلندمدت میان متغیرها را تأیید می‌کند. همچنین، مدل استفاده‌شده از برازش (goodness of fit) مناسبی برخوردار است و متغیرهای مستقل، توان بالایی در توضیح متغیر وابسته دارند، که این امر توسط ضریب تعیین تعدیل‌شده (Adjusted R-Square) به میزان ۹۰ درصد تأیید می‌شود. علاوه بر این، اجرای برنامه جایگزینی واردات می‌تواند اقدامی منطقی باشد. بر اساس نتایج تحقیق، دولت باید سرمایه‌گذاری بخش خصوصی را در صنایع مختلف افغانستان تشویق کند، زیرا واردات از دیگر کشورها باعث خروج بخش قابل توجهی از سرمایه مالی افغانستان شده است. همچنین، دولت باید موانع تجاری مانند تعرفه‌ها، سهمیه‌بندی‌ها و سایر محدودیت‌های تجاری را که مانع از جریان آزاد کالا و خدمات میان کشورها می‌شود، کاهش دهد.

کلیدواژه‌ها: صادرات، واردات، رشد اقتصادی، ARDL، افغانستان.

^۱ عضو کادر علمی پوهنتون رنا

^۲ عضو کادر علمی پوهنتون نعمان سادات

^۳ عضو کادر علمی پوهنتون منگلور

^۴ عضو کادر علمی پوهنتون رنا

ISSN: p 2789 - 1879

ISSN: e 2789 - 1887

Received: 31 / 10 / 2024

Accepted: 15 / 03 / 2025 *Rana Academic & Research Journal – Volume 8, Issue 04 (2025)*

Trade-Growth Relationship in Afghanistan: Evidence from an ARDL Model

Sayed Ahmad Rashid Ashrafi (Ph.D)¹

Manochehr Moahed (Ph.D)²

Abdul Wahid Naderi (Ph.D)³

Hanifullah Hakimi⁴

Abstract

The relationship between foreign trade and economic growth is contentious, especially in developing countries. The impact of imports and exports on Afghanistan's economic growth between 1990 and 2019 is the main topic of this study. Additionally, the study used the ARDL coefficient, the Bound test for a long-term association, and the Structural Breakpoint method of ADF for data stationarity. With statistical significance at the 5 percent level, the results of the ARDL study show that, over the long run, international trade significantly boosts economic growth. Meanwhile, the short-term outcome reveals that imports and exports significantly and favorably influence Afghanistan's economic expansion. However, the ECT coefficient (-2) indicates a convenient adjustment rate to long-run equilibrium and demonstrates the causality and long-term relationship among variables. Additionally, the model is fit, and the independent variables adequately explain the dependent variable, as evidenced by the adjusted R-Square of 90%. Furthermore, enacting an import substitution program would be a sensible move. Based on the study's results, the government should promote private sector investment in Afghanistan across various industries. Afghanistan's imports from other nations caused it to lose a significant chunk of its financial capital. In addition, governments should lessen trade barriers that prevent the free movement of goods and services between countries, such as tariffs, quotas, and other trade restrictions.

Keywords: Export, Import, Economic Growth, ARDL, Afghanistan

1- Faculty Member of Rana University

2 - Faculty Member of Noman Sadat University

3- Faculty Member of Mangalore University

4- Faculty Member of Rana University

1. Introduction

The two main pillars of global trade are import and export (Saadat & Montazeri, 2017). The effect of trade on economic growth has been the subject of much discussion among economists and policymakers (Balassa, 1978; Feder, 1983; Ram, 1985; McNab & Moore, 1998; Bhattacharya & Bhattacharya, 2016). In contrast to imports, goods or services bought from another country and brought into one's own, exports are goods or services from a particular nation and are offered for sale in global marketplaces (Adeleye et al., 2015).

A nation can boost output and sales by exporting goods and services, creating jobs and economic growth. Exporting can aid economic diversification by lowering a nation's dependence on one sector or market. Exporting can also generate foreign currency that can be used to finance imports, assist domestic growth and infrastructure, or pay off debt overseas (Lawal & Ezeuchenne, 2017).

However, imports may contribute to economic expansion. A more excellent range of goods and services are available to consumers when goods that a nation cannot manufacture profitably or effectively are imported. Since domestic producers must enhance their goods and services to remain competitive, the process may result in more competition and innovation.

Nonetheless, it is important to note that there is a striking dearth of substantial, thorough literature on trade and its effects on economic growth in Afghanistan. Filling in these gaps would provide important information about how trade might advance Afghanistan's economic growth. Ultimately, this study project could significantly advance the theoretical knowledge and the valuable tactics needed to promote economic development in Afghanistan.

This paper's structure will offer an empirical discussion and Analysis of the short- and long-term relationships between proxies of international commerce and economic growth, as well as the effect of these proxies on economic growth. An explanation of the various econometric models and their interpretations is also given.

2. Review of Literature

The link between import, export, openness, and economic growth at the national and international levels has been the subject of several empirical studies. Researchers have focused on the relationship between international trade and economic growth for the past forty years. They are split into two groups: those who believe that trade significantly impacts economic growth and those who do not. The literature on the links between export and GDP, import and GDP, and openness and GDP is empirically summarized in this study.

First, research on the relationship between trade and GDP has shown that the variables are cointegrated and that exports boost economic expansion (Hesbon, 2009; Lawal & Ezeuchenne, 2017; Elias et al., 2018; Ahmad, 2018; Hesamiazizi, 2008; Abubakar & Shehu, 2015; Enu et al., 2013; Dinc et al., 2017; Boakye & Gyamfi, 2017; Mogoe & Mongale, 2014; Omoju & Adensaya, 2012; Hussain & Haque, 2016; Abdullahi et al., 2016; Afolabi et al., 2017; Edoumiekumo & Opukri, 2013; Bekari & Krit, 2017).

Economic growth is positively impacted by imports, according to another group of studies (Mark Jackson et al., 2018; Ahmad, 2018; Afolabi et al., 2017; Edoumiekumo & Opukri, 2013). However, other research (Hesbon, 2009; Lawal & Ezeuchenne, 2017; Elias et al., 2018; Hesamiazizi, 2008; Enu et al., 2013; Mogoe & Mongale, 2014; Bekari & Krit, 2017; Alavinasab, 2013) indicated that imports had an adverse effect on economic growth.

Conversely, trade openness positively impacts economic growth (Javed et al., 2012; Zahonogo, 2016; Bojanic, 2012). However, two researchers came to the conclusion that more trade openness hurt economic growth. (Malefane & Odhiambo, 2018; Lawal & Ezeuchenne, 2017)

Solow (1957) presented the effect of technological development on the industrial process in his essay. Parameter A sometimes referred to as the available technology stock, displays the overall factor productivity growth that the model introduces. The production function of the basic Solow model exhibits continuous returns to scale, as may be observed in the following. In terms of technology, it is seen as either capital-augmenting or Solow-neutral. The Cobb-Douglas production's role:

$$\text{If } f(A, K, L) = AK^\alpha L^{(1-\alpha)}, \text{ then } Y$$

where Y is the level of output or economic growth during a specific period, A is an indicator of total factor productivity, K is the amount of physical capital that is accessible, L is the amount of labor that is available, and α is a parameter that denotes capital elasticity.

The accumulation of tangible or physical capital is the main driver of economic growth and the subject of macroeconomists' attention, according to Solow's 1957 neo-classical theory of growth. On the other hand, endogenous economic development initially emerged as a means of integrating the reasons behind technological progress and the ensuing steady rise in productivity inside the general equilibrium framework of neoclassical growth theory. Numerous hypotheses, each with distinct empirical and policy implications, are used in the literature to explain the process of economic growth. Romer's "AK model" encourages sustainable growth by assuming that technical advancement is an unanticipated byproduct of companies that specialize in investing. Furthermore, all theoretical research is predicated on effective "endogenous growth models." which was introduced by

Arrow (1962) and further extended by Shell (1966), Romer (1986), Lucas (1988), and Romer (1990), is the foundation for our empirical Analysis:

$$Y=f(A, K, L, T)$$

3. Results and Discussion

3.1. Description and Frequencies of the Data

Table 1 Descriptive Statistics of the Variables (GDP, EXP, and IMP)

	Y	E	I
Mean	22.65388	19.3208	21.29506
Median	22.46317	19.09309	21.45922
Maximum	23.74667	20.58994	22.87109
Minimum	21.47232	18.39434	19.77501
Std. Dev.	0.829897	0.676095	1.183151
Skewness	0.158561	0.472320	0.003704
Jarque-Bera	3.531766	2.327296	3.421367
Probability	0.171036	0.312345	0.180742
Observations	30	30	30

Source: The authors.

Table 2 Descriptive Statistics of the Variables (GFCF, Labor Force, and FDI)

	K	L	F
Mean	23.10224	15.61930	15.85497
Median	24.62492	15.66206	17.66903
Maximum	26.02444	16.18574	19.41763
Minimum	16.74759	14.93048	9.210340
Std. Dev.	3.201550	0.346294	3.249867
Skewness	-0.986908	-0.159107	0.689001
Kurtosis	2.451936	2.154254	2.033723
Jarque-Bera	5.245402	1.020684	3.540728
Probability	0.072606	0.600290	0.170271
Observations	30	30	30

Source: The authors.

The factors exhibit a consistent association, as Tables 1 and 2 demonstrate. Additionally, the lower value of all the standard deviation data shows that the deviations from the mean values of the true data are relatively modest. Additionally,

the Skewness and Kurtosis Statistics offer important insights about the probability of the data's normality and stability, as well as the magnitude of the distribution (Adebayo, 2023).

Unit root testing is the next stage. A time series with a unit root is considered non-stationary if it shows periodic changes or a trend that does not go away with time. Although there are a number of unit root tests, the Augmented Dickey-Fuller (ADF) test is the most often employed (Irfan et al., 2023).

3.2. Unit Root Test

When it comes to stationarity analysis, the Structural Breakpoint approach of Augmented Dickey-Fuller: minimized t-statistics Unit Root Tests (URT) is used to assess the data's integration properties. Influential studies, including Alsamara et al. (2019), Wani (2019), and Bist and Bista (2018), used the aforementioned test to account for the possibility of structural discontinuities in the time series data.

Structural Breakpoint method of Augmented Dickey-Fuller: minimized t-statistics

Table 3 Summary results of the Augmented Dickey-Fuller (ADF) minimized t-test at levels

Series	Null Hypothesis	Critical Value (5% level)	ADF Test at levels	Equation Specification / Break Specification	P-Value (Prob.)	Conclusion
K	H ₀ : K has a unit root	-4.859812	-5.129164	Intercept & Trend / Intercept	0.0222	Reject the Null Hypothesis because the prob. value is smaller than the α value (0.05)
L	H ₀ : L has a unit root	-4.859812	-6.296718	Intercept & Trend / Intercept	< 0.01	
F	H ₀ : F has a unit root	-4.859812	-4.948443	Intercept & Trend / Intercept	0.0384	
I	H ₀ : I has a unit root	-4.859812	-5.303547	Intercept & Trend / Intercept	0.0123	
E	H ₀ : E has a unit root	-4.859812	-3.915098	Intercept & Trend / Intercept	0.4261	Cannot Reject Null Hypothesis
Y	H ₀ : Y has a unit root	-4.859812	-2.757226	Intercept & Trend / Intercept	0.9602	

Source: The authors.

Table 4 Summary results of the Augmented Dickey-Fuller (ADF) minimized t-test at first difference

Series	Null Hypothesis	Critical Value (5% level)	ADF Test at 1 st difference	Equation Specification / Break Specification	P-Value (Prob.)	Conclusion
D(E)	H ₀ : D(E) has a unit root	-4.859812	-9.901771	Intercept & Trend / Intercept	< 0.01	Reject the Null Hypothesis because the prob. value is smaller than the α value (0.05)
D(Y)	H ₀ : D(Y) has a unit root	-4.859812	-7.414309	Intercept & Trend / Intercept	< 0.01	

Source: The authors.

Except GDP and exports, all other variables were found to be stationary in Tables 3 and 4. Following the initial difference at a five percent significance threshold, the

two variables in question become stationary. We also chose our statistical model based on the data stationarity, mode, and literature review.

3.3. Time Series Model Selection

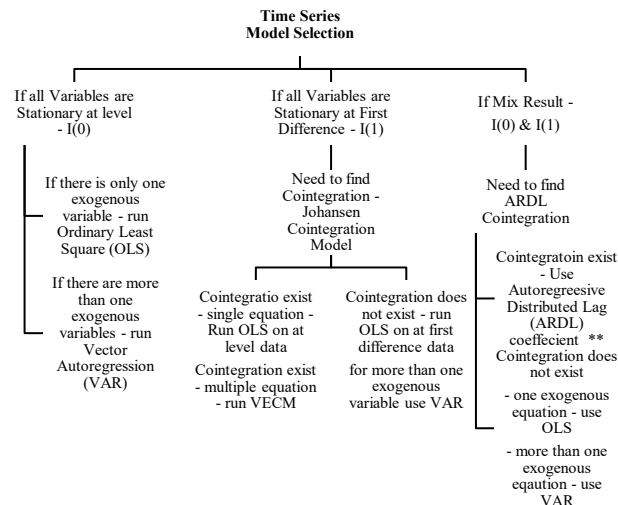


Figure 1 Time Series Model Selection

Source: Jawaid (2020) and Shrestha & Bhatta (2018)

- 1.1. There are a few characteristics to consider when selecting an appropriate model to determine the interaction, influence, association, and link between variables. The process for choosing one or more models is as follows:
- 1.2. When use Augmented Dickey-Fuller (ADF) to determine the stationarity of data, the following outcomes could occur:
- 1.3. Ordinary Least Squares (OLS) determine the impact and relationship between variables when there is just one exogenous variable and all the variables are stationary at level or $I(0)$. Nonetheless, the VAR model should be used with multiple exogenous variables.
- 1.4. All variables should be highlighted for cointegration if they are all stationary at first difference, or $I(1)$; Cointegration exists, and there is only one cointegrating equation; the researcher may use OLS on at-level data directly. However, if there is more than one cointegrating equation, Vector Error Correction Model (VECM) is the fit model to be tested.
- 1.5. Cointegration does not exist, and there is only one exogenous Variable; OLS should be implemented on the first difference data. However, if there is more than one exogenous Variable, VAR is the fittest model to take advantage of. The researcher used the ARDL cointegration model, and there are two options if there are mixed variables based on stationarity, with some variables being $I(0)$ and some being $I(1)$;
 - Cointegration is present; the researcher uses the Autoregressive Distributed Lag (ARDL) coefficient.

- OLS is utilized, with just one exogenous variable and no cointegration.
- There are multiple exogenous variables and no cointegration; the VAR model is dependable.

The ARDL model was chosen for the investigation due to the mixed data; some are stationary at the level, while others are stationary at the first difference. Additionally, in order to use the ARDL model to examine how trade affects economic growth, the study should first choose the Lag Order Criteria and then use the ARDL long-run and bound test to determine cointegration between variables.

Lag Order Selection Criteria

Table 5 VAR Lag Order Selection Criteria

Lags	LogL	LR	FPE	AIC	SC	HQ
0	-94.41330	NA	5.25e-05	7.172379	7.457851	1.595939
1	66.30755	241.0813	7.57e-09	-1.736253	0.262053	-6.433693
2	141.8490	80.93730*	6.68e-10*	-4.560645*	-0.849504*	-3.426112*

Source: The authors.

Notes: *Indicates lag order selected by the above-mentioned criterion

L.R.: the sequential modified L.R. test statistic, with each test conducted at the five percent level.

Final Prediction Error (FPE)

Akaike information criterion, or AIC

SC: The criterion of Schwarz information

H.Q: Quinn information criterion by Hannan

According to the aforementioned principle, the lag length with the lowest value is ideal. As a result, lag2 was chosen by the SC, L.R., Akaike information, H.Q., and FPE criteria. Therefore, lag2 is a significant lag time, and the Akaike Criterion is preferred while executing the model.

ARDL Bound Tests for Cointegration

The ARDL Bound Tests for Cointegration are a test that determines the long-term cointegration between variables. They are the best choice for small samples and do not require integration of the same order. Because the variables in the study have varying orders of stationarity, a bound test was used. However, Pesaran and Shin

(1999) and Pesaran et al. (2001) established the tests, and the model used in this work is as follow:

$$\nabla \Gamma \mathbf{y}_t^t = \underbrace{\begin{aligned} &+ c^1 \Gamma \mathbf{y}_t^{t-1} + \varepsilon^t \\ &+ c^3 \Gamma \mathbf{y}_t^{t-1} + c^3 \Gamma \mathbf{y}_t^{t-1} + c^4 \Gamma \mathbf{y}_t^{t-1} + c^2 \Gamma \mathbf{y}_t^{t-1} + c^5 \Gamma \mathbf{y}_t^{t-1} \end{aligned}}_{\text{un-gro1}} + \underbrace{\begin{aligned} &+ \sum_{d_3=1}^{\lambda=0} c^4 \nabla \Gamma \mathbf{y}_t^{t-1} + \sum_{d_4=1}^{\lambda=0} c^2 \nabla \Gamma \mathbf{y}_t^{t-1} + \sum_{d_2=1}^{\lambda=0} c^5 \nabla \Gamma \mathbf{y}_t^{t-1} \\ &+ \sum_{b=1}^{\lambda=1} c^1 \nabla \Gamma \mathbf{y}_t^{t-1} + \sum_{d_1=1}^{\lambda=0} c^3 \nabla \Gamma \mathbf{y}_t^{t-1} + \sum_{d_5=1}^{\lambda=0} c^3 \nabla \Gamma \mathbf{y}_t^{t-1} \end{aligned}}_{\text{un-ho12}} \quad \text{S:}$$

(4)

$$\begin{aligned} \Delta \text{Ln} Y_t = & c_1 + c_2 \text{Ln} Y_{t-1} + c_3 \text{Ln} K_{t-1} + c_4 \text{Ln} L_{t-1} + c_5 \text{Ln} F_{t-1} + c_6 \text{Ln} E_{t-1} \\ & + c_7 \text{Ln} I_{t-1} + \sum_{j=1}^p c_{1j} \Delta \text{Ln} Y_{t-j} + \sum_{j=0}^{q1} c_{2j} \Delta \text{Ln} K_{t-j} \\ & + \sum_{j=0}^{q2} c_{3j} \Delta \text{Ln} L_{t-j} + \sum_{j=0}^{q3} c_{4j} \Delta \text{Ln} F_{t-j} + \sum_{j=0}^{q4} c_{5j} \Delta \text{Ln} E_{t-j} \\ & + \sum_{j=0}^{q5} c_{6j} \Delta \text{Ln} I_{t-j} + \varepsilon_{1t} \end{aligned} \quad (5)$$

'p, q's are the lag length, 'p' refers to the dependent variable lag length, and 'q' refers to the independent variable lag length, so the combined lag length is (p, q1, q2, q3, q4, and q5).

The model expanded after selecting Lag Criteria and expressed as follows:

$$\begin{aligned} \Delta \text{Ln} Y_t = & c_1 + c_2 \text{Ln} Y_{t-1} + c_3 \text{Ln} K_{t-1} + c_4 \text{Ln} L_{t-1} + c_5 \text{Ln} F_{t-1} + c_6 \text{Ln} E_{t-1} \\ & + c_7 \text{Ln} I_{t-1} + \sum_{j=1}^2 c_{1j} \Delta \text{Ln} Y_{t-j} + \sum_{j=0}^2 c_{2j} \Delta \text{Ln} K_{t-j} \\ & + \sum_{j=0}^2 c_{3j} \Delta \text{Ln} L_{t-j} + \sum_{j=0}^2 c_{4j} \Delta \text{Ln} F_{t-j} + \sum_{j=0}^1 c_{5j} \Delta \text{Ln} E_{t-j} \\ & + \sum_{j=0}^2 c_{6j} \Delta \text{Ln} I_{t-j} + \varepsilon_{1t} \end{aligned} \quad (6)$$

The long-run cointegration or bound test can be determined in three different ways, which are denoted by the following numbers:

1. Cointegration is demonstrated if F-statistics exceeds the upper bound value. Please assume that the computed F-statistics exceed the upper bound I (1) critical value. Cointegration, which indicates a long-term link, will be inferred in that scenario. The null hypothesis should be rejected. The long-run model, the error correction model (ECM), should be estimated in the study. The result is inconclusive if F-stats are between the upper and lower bound values.

2. no cointegration exists if F-statistics is smaller than the lower bound value. We determine that there is no cointegration and, hence, no long-term relationship if the calculated F-statistics is less than the crucial value for the lower bound I(0). The null hypothesis should not be rejected. Estimate the Autoregressive Distributed Lag (ARDL) model, which is the short-run model.

Table 6 ARDL Cointegration or Bounds Test

Test Stats	Value	Sig.	I(0)	I(1)
F-stats	12.69189	10%	2.26	3.35
		5%	2.62	3.79
K	5	2.5%	2.96	4.18
		1%	3.41	4.68

Source: The authors.

Table 6 lists the bound test criteria and study-based hypotheses. The following are the stated formulations of Pesaran et al. (2001) and Pesaran and Shin (1999):

H0: No cointegrating equation exists.

The study rejects the null hypothesis and demonstrates cointegration because F-statistics are more significant than the upper bound value. It implies that cointegration, which indicates a long-term link between variables, will be found if the computed F-statistics is higher than the critical value for upper bound I(1).

Table 7 Short-run and long-run coefficient

The dependent variable, LnY_t	Coefficients	t-stats.	(ρ value)
The long-run results			
LnK_t	-0.004220	0.025323	0.8707
LnL_t	-0.961407	0.265759	0.0040***
LnF_t	-0.056440	-5.164652	0.0003***
LnE_t	0.168073	3.014635	0.0118**
LnI_t	1.003181	31.32260	0.0000***

The short-run results			
Constant	29.19337	10.57206	0.0000***
$\Delta \text{Ln}Y_{t-1}$	0.520483	4.027691	0.0020***
$\Delta \text{Ln}K_t$	-0.045933	-1.573196	0.1440
$\Delta \text{Ln}L_t$	3.611916	2.888206	0.0148**
$\Delta \text{Ln}F_t$	-0.003649	-0.424220	0.6796
$\Delta \text{Ln}E_t$	0.126583	2.979292	0.0125**
$\Delta \text{Ln}I_t$	0.763811	9.105203	0.0000***
$ECT (-1)$	-2.066623	-10.52452	0.0000***
Adjusted R ²	0.90		
Durbin-Watson Stats	2.546		
F-stats	25.25		0.0000 ***

Source: The authors.

Notes. ECT=Error Correction Term

*Significant at 10% level. **Significant at 5% level. ***Significant at 1% level.

Rana Academic
& Research Journal
Volume 8, Issue
No: 4- Autumn 2025

The findings of the long- and short-term equation to determine the long- and short-term impacts of import and export, two proxies for international trade, on the economic growth proxy—the Afghan gross domestic product—are shown in Table 7. With a five percent significance level, the results of the long-term Analysis show that international trade, both in terms of imports (I) and exports (E), significantly and favorably affects economic growth. This is corroborated by earlier studies like Lawal & Ezeuchenne (2017), Elias et al. (2018), Ahmad (2018), Hesamiazizi (2008), Abubakar & Shehu (2015), Enu et al. (2013), and Dinc et al. (2017). More specifically, an increase of one unit in exports from international commerce would result in a gain of 0.16 units in economic growth.

At a 5 percent significance level, the short-term result reveals that imports and exports significantly and positively impact economic growth. This finding is corroborated by earlier studies by Boakye & Gyamfi (2017), Mogo & Mongale (2014), Omoju & Adensaya (2012), Hussain & Haque (2016), Abdullahi et al. (2016), Afolabi et al. (2017), and Edoumiekumo & Opukri (2013). However, the ECT coefficient (-2) indicates a convenient rate of adjustment to long-run equilibrium and demonstrates the causality and long-term link among variables.

R-squared and adjusted To determine how much of the variance of the independent variable can be accounted for by changes in the dependent variable, regression models employ R-squared statistics. To put it another way, r-squared shows the goodness of fit or how well the data matches the regression model. Accordingly, Table 9's Adjusted R-Square of 90% indicates that the model is well-fitting and that the independent factors adequately explain the dependent variable.

Additionally, the aforementioned claim that the model fits well is supported by Durbin-Watson Statistics, F-statistics, and Adjusted R-Square.

4. Conclusion and Policy Suggestions

This study examined the impact of commerce on Afghanistan's economic growth. The study employed Augmented Dickey-Fuller: minimized t-statistics to ascertain whether the data were stationary. A combination of data—some stationary at the level and a few stationary at the first difference—led the study to choose the ARDL. Additionally, the study had to choose the Lag Order Criteria first and then use a long-run and bound test of ARDL to determine cointegration between variables. Then, the ARDL model was used to examine the effect of trade on economic growth. At a significance level of 5 percent, the long-term result demonstrates that import and export commerce, which comprise international trade, significantly influence economic growth.

More specifically, an increase of one unit in exports from international trade would result in a rise of 0.16 units in economic growth. Furthermore, at a five percent significance level, an increase of one unit in imports would increase one unit in Afghanistan's economic development.

At a five percent significance level, the short-term finding reveals that imports and exports substantially and favorably impact economic growth.

The R-squared shows the goodness of fit, or how well the data match the regression model. The model is fit, and the independent variables adequately explain the dependent variable, as indicated by the adjusted R-squared of 90%.

Additionally, the aforementioned claim that the model fits well is supported by Durbin-Watson Statistics, F-statistics, and Adjusted R-Square.

Based on the study's results, the government should promote private sector investment in Afghanistan across a range of industries. Afghanistan's imports from other nations caused it to lose a significant chunk of its financial capital. Adopting a policy of import substitution would be a sensible move. Through the creation of jobs, capacity building, and economic growth, this program will assist Afghanistan in balancing the volume of imports and exports.

In addition, governments should lessen trade barriers that prevent the free movement of goods and services between countries, such as tariffs, quotas, and other trade restrictions. More investment and trade, as well as more efficient use of resources, could come from this.

Governments may use incentives such as tax breaks, simplified regulatory processes, and investment guarantees to attract foreign investment. By attracting resources and knowledge, this can aid in a country's economic development.

Afghanistan has historically had a limited commerce sector and little economic progress as a result of years of violence and instability. The primary objectives of Afghanistan's trade policy are reviving the economy and attracting foreign investment. Afghanistan has traditionally been heavily dependent on foreign assistance, with the United States providing a sizable portion of the cash. Foreign organizations such as the World Bank and the International Monetary Fund have greatly aided the country's economic progress. In contrast, Afghanistan has been working to enhance its trade policies and fortify its commercial and trade ties with other countries. It has sought to increase regional connectivity by promoting regional trade agreements and building infrastructure.

The country has participated in negotiations to join several regional trade initiatives, such as the Central Asia Regional Economic Cooperation (CAREC), and is a member of the World Trade Organization. The recent political shifts, however, are not the same as the trade policies. The scenario and circumstances are uncertain, and it is yet unknown how the new government authority will impact trade relations and policy.

Finally, foreign direct investment (FDI) has the potential to boost significantly Afghanistan's economy. Infrastructure development, employment creation, the development of human capital, technology transfer and innovation, increased trade and market access, improved productivity and efficiency, financial inflows and capital formation, and more can all be facilitated by FDI.

References

- Abdullahi, A., Safiyanu, S., & Soja, T. (2016). International Trade and Economic Growth: An Empirical Analysis Of West Africa. *IOSR Journal of Economics and Finance*, 7(2), 12-15.
- Abhayaratne, A. S. (1996). Foreign Trade and Economic Growth Evidence from Sri Lanka, 1960-1992. *Applied Economics Letters*, 3(9), 567-570.
- Abubakar, A., & Shehu, K. (2015, April). An Appraisal of the Impact of International Trade on Economic Growth of India: An ARDL Approach. *Annamalai Journal of Management*(Special Issue), 30-35.
- Adebayo, T. (2023). Trade-off Between Environmental Sustainability and Economic Growth Through Coal Consumption and Natural Resources Exploitation in China: New Policy Insights from Wavelet Local Multiple Correlation. *Geological Journal*, 1384–1400.
- Adeleye, J. O., Adeteye, O. S., & Adewuyi, M. O. (2015). Impact of International Trade on Economic Growth in Nigeria. *International Journal of Financial Research*, 163-172.
- Afolabi, B., Danladi, J., & Azeez, M. (2017). International Trade and Economic Growth in Nigeria. *Global Journal of Human-Social Science: E Economics*, 17(5), 28-39.
- Ahmad, M. H. (2018). International trade on economic growth in Bangladesh. *International Journal of Science and Research (IJSR)*.
- Alavinasab, S. M. (2013, November). Foreign Trade and Economic Growth in Iran: An Empirical Study. *International Journal of Academic Research in Business and Social Science*, 3(11), 508-519.
- Alsamara, M., Mrabet, Z., Barkat, K., & Elafif, M. (2019). The Impact of Trade and Financial Developments on Economic Growth in Turkey: ARDL Approach with Structural Break. *Emerging Market Finance and Trade*.
- Arndt, H. W. (1982). Trade as the Engine of Growth. *Tha Development Objective: A Historical Study*.
- Arrow, K. (1962). Economic Welfare and the Allocation of Resources for Invention. *NBER conference 13 The Rate and Direction of Inventive Activity: Economic and Social Factors* (pp. 609–625). Princeton University Press.
- Ashrafi, S., & Kalaiah, V. (2020). International trade and economic growth in Afghanistan. *Journal of Xi'an University of Architecture & Technology*, 12(6), 1799-1808.

- Ashrafi, S., & Kalaiah, V. (2021). Trend, direction and performance of Afghanistan's international trade. *Australian Finance & Banking Review*, 5(1), 40-49.
- Bakari, S., & Krit, M. (2017). The Nexus Between Exports, Imports, and Economic Growth: Evidence from Mauritania. *International Journal of Economics and Empirical Research*, 5(1), 10-17.
- Balassa, B. (1978). Exports and Economic Growth: Further Evidence. *Journal of Development Economics*, pp. 181-189.
- Bhattacharya, M., & Bhattacharya, S. N. (2016). International Trade and Economic Growth: Evidence from the BRICS. *Journal of Applied Economics and Business Research*, pp. 150-160.
- Bist, J. P., & Bista, N. B. (2018). Finance-Growth Nexus in Nepal: An Application of the ARDL Approach in the Presence of Structural Breaks. *The Journal for Decision Makers*, 236-249.
- Boakye, R., & Gyamfi, E. (2017, March). The Impact of Foreign Trade on the Economic Growth of Ghana. *International Journal of Business Marketing and Management (IJBMM)*, 2(3), 20-26.
- Bojanic, A. N. (2012). The Impact of Financial Development and Trade on the Economic Growth of Bolivia. *Journal of Applied Economics*, 15(1), 51-70.
- Bouoiyour, J. (2003). Trade and GDP Growth in Morocco Short-run or Long-run Causality? *Revista Brasileira De Economia De Empresas*, 3(2), 19-26.
- Chen, H. (2009, February). A Literature Review on The Relationship between Foreign Trade and Economic Growth. *International Journal of Economics and Finance*, 1(1), 127-130.
- Dinc, D., Gokmen, A., Nakip, M., & Azari, M. (2017, August 30). The impact of foreign trade issues on economic growth in some developing countries including Iran and Turkey. *Journal of Transnational Management*.
- Edoumiekumo, S. G., & Opukri, C. O. (2013). Economic Growth Factor in Nigeria: The Role of Global Trade. *American Journal of Humanities and Social Science*, 1(2), 51-55.
- Elias, I., Agu, R., & Eze, L. (2018). Impact of International Trade on the Economic Growth of Nigeria. *European Journal of Business and Management*, 10(18).
- Enu, P., Havi, E., & Hagan, E. (2013, September). The impact of Foreign Trade on Economic Growth in Ghana (1980 -2012). *International Journal of Academic Research in Economics and Management*, 2(5).
- Farhady, A. A. (2004). A Survey of Foreign Trade Effects on Iran's Economic Growth. *JPBUD*, 27-58.
- Feder, G. (1983). On Exports and Economic Growth. *Journal of Development Economics*, pp. 59-73.
- Gnoufougou, D. H. (2013). A Causal Relationship Between Trade and Growth in Togo. *IJTEMT*, 2(4).
- Grossman, G. M., & Helpman, E. (1990). Trade, Innovation, and Growth. *The American Economic Review*, 2(80), 86-91.
- Gurgul, H., & Lach, L. (2010). International Trade and Economic Growth in the Polish Economy. *Operations Research and Decisions* (3-4).
- Hesamiazizi, B. (2008). The role of foreign trade on economic growth and development in Indian and Iranian economies. *Shodhganga.inflibnet.ac.in*.
- Hesbon, O. N. (2009). The impact of International trade on economic growth in developing countries: a case study of Kenya. *University of Nairobi*.
- Hussain, M., & Haque, M. (2016). Foreign Direct Investment, Trade, and Economic Growth: An Empirical Analysis of Bangladesh. *Economics*, 1-14.
- International Monetary Fund. (2022, April 22). *International Financial Statistics*. Retrieved from <https://data.imf.org/?sk=4c514d48-b6ba-49ed-8ab9-52b0c1a0179b>
- Irfan, M., Ullah, S., Razzaq, A., Cai, J., & Adebayo, T. (2023). Unleashing the Dynamic Impact of Tourism Industry on Energy Consumption, Economic Output, and Environmental Quality in China: A Way Forward Towards Environmental Sustainability. *Journal of Cleaner Production*, p. 387.
- Javed, Z., Qaiser, I., Mushtaq, A., Saif-ullah, & Iqbal, A. (2012, April). Effects of International Trade on Economic Growth: The Case Study of Pakistan. *International Journal of Academic Research in Progressive Education and Development*, 1(2).
- Jawaid, T. (2020, 10 27). *TJ Academy*. Retrieved from Youtube: <https://www.youtube.com/watch?v=klz24KQugbA&t=8s>
- Jayachandran, G., & Seilan, A. (2010). A Causal Relationship Between Trade, Foreign Direct Investment and Economic Growth for India. *International Research Journal of Finance and Economics* (42), 74-88.
- Kalai, M., & Zghidi, N. (2019). Foreign Direct Investment, Trade, and Economic Growth in MENA countries: Empirical Analysis Using ARDL Bounds Testing Approach. *J Knowl Econ*, 397-421.
- Kibritcioglu, A. (2002). On the Smithian Origins of New Trade and Growth Theories. *University of Illinois at Urbana Champaign*.
- Kilic, N., & Beser, M. (2017, July 20). Relationship of Foreign Trade and Economic Growth in Eurasian Economy: Panel Data Analysis. *International Journal of Economics and Finance*, 9(9), 1-7.
- Lawal, E. O., & Ezeuchenne, K. (2017). International Trade and Economic Growth in Nigeria. *IOSR Journal Of Humanities And Social Science*, 22(6), 35-43.
- Li, R., Wang, Q., Liu, Y., & Jiang, R. (2021). Per-capita carbon emissions in 147 countries: The effect of economic, energy, social and trade structural changes. *Sustainable Production and Consumption*, 1149-1164.

- Lucas, R. E. (1998). On the Mechanics of Economic Development. *Journal of Monetary Economics*, pp. 3–42.
- Makhmutova, D., & Mustafin, A. (2017, September). Impact of International Trade on Economic Growth. *International Journal of Scientific Study*, 5(6), 140-144.
- Malefane, M., & Odhiambo, N. (2018). Impact of Trade Openness on Economic Growth: Empirical Evidence From South Africa. *Economia Internazionale/International Economics*, 71(4), 387-416.
- Markjackson, D., Jonny, N., & Timipa, S. (2018, April). Foreign trade and its impact on economic growth in Nigeria. *International Journal of Economics, Commerce and Management United Kingdom*, 6(4).
- McNab, R., & Moore, R. (1998). Trade Policy, Export Expansion, Human Capital and Growth. *Journal of International Trade and Economic Development*, 237–256.
- Mogoe, S., & Mongale, I. (2014, July). The Impact of International Trade on Economic Growth in South Africa: An Econometrics Analysis. *Mediterranean Journal of Social Science*, 5(14), 60-66.
- Mohamed, R., Abd El-Aziz, A., Ramadan, H., Abd El-Sayed, M., & Emam, H. (2021). Impact of Human Capital on Economic Growth in Egypt: An ARDL Approach. *European Journal of Economics, Finance and Administrative Science*, pp. 65–80.
- Omoju, O., & Adesanya, O. (2012). Does Trade Promote Growth in Developing Countries? Empirical Evidence from Nigeria. *International Journal of Development and Sustainability*, 1(3), 743-753.
- Pahlavani, M., Wilson, E., & Worthington, A. C. (2005). Trade-GDP Nexus in Iran: An Application of the Autoregressive Distributed Lag (ARDL) Model. *American Journal of Applied Sciences*, 2(7), 1158-1165.
- Pesaran, M., & Shin, Y. (1999). An Autoregressive Distributed Lag Modeling Approach to Cointegration Analysis. *Econometrics and Economic Theory in the 20th Century: The Ragnar Frisch Centennial Symposium*.
- Pesaran, M., Shin, Y., & Smith, R. (2001). Bounds Testing Approaches to the Analysis of level relationship. *J Appl Eco*, 289-326.
- Pindyck, & Rubinfeld. (n.d.). *home.bi*. Retrieved April 2022, from home.bi: <http://home.bi.no/fgl96027/l24.pdf>
- Ram, R. (1985). Exports and Economic Growth: Some Additional Evidence. *Economic Development and Cultural Change*, pp. 415–425.
- Riedel, J. (1988). Trade as an Engine of Growth: Theory and Evidence. In D. Greenaway, *Economic Development and International Trade*. London: Palgrave.
- Romer, P. M. (1986). Increasing Returns and Long-Run Growth. *Journal of Political Economy*, pp. 1002–1037.
- Romer, P. M. (1990). Endogenous Technological Change. *Journal of Political Economy*, pp. 71–102.
- Saadat, R., & Montazeri, M. (2017). Impact of International Trade on Economic Development. *International Conference on Management, Economics and New Accounting* (p. 44). Regional Centre for Science and Technology.
- Shell, K. (1966). Toward a Theory of Inventive Activity and Capital Accumulation. *American Economic Review* (56), pp. 56–62.
- Shrestha, M., & Bhatta, G. (2018). Selecting Appropriate Methodological Framework for Time Series Data Analysis. *The Journal of Finance and Data Science*, 71-89.
- Solow, R. M. (1956). A contribution to the Theory of Economic Growth. *Quarterly Journal of Economics*, 1(70), 65–94.
- Solow, R. M. (1957). Technical Change and the Aggregate Production Function. *Review of Economics and Statistics*, 3(39), 312–320.
- Sulaiman, C., Bala, U., Tijani, B., Waziri, S., & Maji, I. (2015). Human Capital, Technology, and Economic Growth: Evidence From Nigeria. *Sage*, 1-10.
- Wani, N. (2019). Nexus Between Openness to Trade and Economic Growth: An Empirical Investigation of Afghanistan. *South Asia Economic Journal*, pp. 1–19.
- Zahonogo, P. (2016). Trade and economic growth in developing countries: Evidence from Sub-Saharan Africa. *Journal of African Trade* (3), pp. 41–56.

Websites

<https://macdonaldlaurier.ca/mli-commentary-brian-lee-crowley-reducing-internal-trade-barriers-ottawa/>
<https://www.deanfrancispress.com/index.php/fe/article/view/2001/2037>