ANALYZING THE IMPACT OF INTERNATIONAL TRADE ON ECONOMIC STABILITY IN NIGERIA USING THE ARDL METHOD

IHUGBA, OKEZIE A.
okezieihugba@gmail.com, +2348035501438

NDUKWE-ANI, PAMELA A.
pamela.ndukweani@gmail.com, +2348036970793

IDIKA, NGOZI
idikangozi6@gmail.com, +2347065820973

OKONKWO KOSIE
okonkwokoko@gmail.com, +2348037408920

OYELADE, OLANYINKA O
oyeladeo230@gmail.com, +2348063979507
Department of Economics,
Alvan Ikoku Federal University of Education, Owerri Imo State Nigeria

ABSTRACT
This study examined the impact of international trade on economic stability in Nigeria using time-series data and econometric models, including autoregressive distributed lag (ARDL) models, with a dataset spanning from 1981 to 2022. The analysis reveals that higher inflation rates and exchange rate fluctuations have a statistically significant negative effect on economic stability. Specifically, increased inflation correlates with decreased economic stability, highlighting the need for effective inflation management. Exchange rate volatility also has an adverse effect on stability, emphasizing the need for exchange rate stabilization measures. In contrast, the import-to-consumption ratio significantly impacts economic stability, while the import-to-production ratio does not exhibit a significant effect. The study suggests that promoting domestic production through policy incentives and technological investments can reduce import dependence and mitigate trade imbalances. The policy implications emphasize the importance of robust monetary and fiscal policies to control inflation, stabilize the exchange rate, and support domestic production. Addressing these factors is essential for maintaining economic stability and promoting sustainable growth in Nigeria.
Keywords: Economic Stability, International Trade, Inflation Rate, ARDL
JEL Codes: E60, F11, E31, C32

1 INTRODUCTION
International trade involves the exchange of goods, services, and capital across borders, playing a crucial role in connecting local, regional, and national economies with the global market (McConnell, 2001). It encompasses not only tangible goods but also intangible services, such as financial transactions and data, which facilitate the transfer of technology, culture, and investment funds. The strength of international trade can significantly influence a country's economic stability and growth prospects (WTO, 2023).

In Nigeria, trade is a pivotal component of the economy, with the nation's growth closely tied to its international trade activities. The reliance on oil exports has made the Nigerian economy vulnerable to global price fluctuations, necessitating diversification into other sectors like agriculture and manufacturing to achieve economic stability (Dankumo et al., 2019; Dankumo

et al., 2020). Trade's impact extends beyond GDP growth to affect employment, income distribution, and poverty reduction. However, dependence on imports can lead to economic instability due to exposure to global price shocks and inflation (Onoja, 2020).

The theoretical framework around trade and development includes perspectives from Prebisch (1950), Singer (1950), and Myrdal (1960), who argue that international trade benefits developed countries disproportionately while perpetuating underdevelopment in developing nations. This theory highlights the challenges faced by countries like Nigeria, which experience volatility in trade and economic performance due to global economic conditions (Obisike et al., 2020).

Data from the Central Bank of Nigeria (2022) illustrates a positive correlation between Nigeria's real GDP and trade activities from 1981 to 2022 (see Figure 1). This correlation underscores the importance of trade in influencing GDP growth. However, the volatility in trade figures, especially due to fluctuating oil prices, reveals Nigeria's vulnerability to external economic shocks.

Figure 1: Changes in Nigeria's GDP growth pattern and total trade
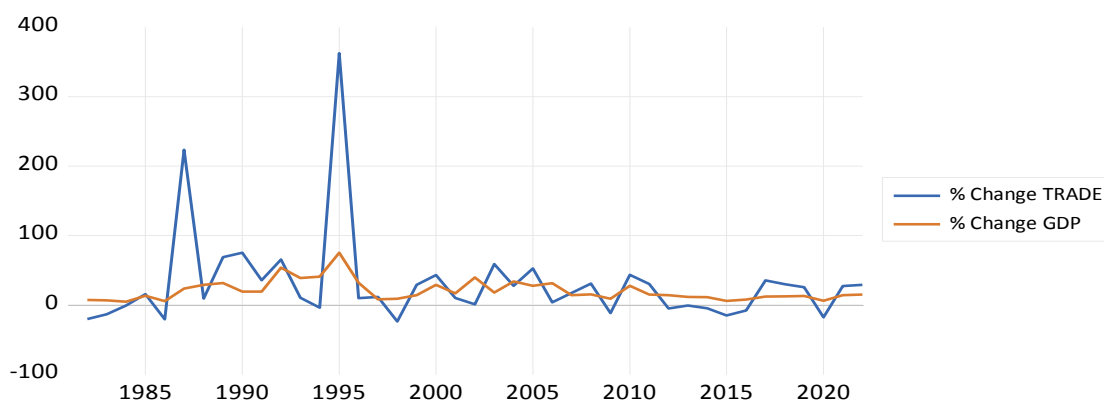
Source: CBN Statistical Bulletin, 2022

Prior research has examined the correlation between trade and economic growth across diverse contexts (Nguyen et al., 2023; Victor and Nwakwo, 2023; Shido-Ikwu et al., 2023; Al-Taie et al., 2022; Bardi & Hfaiedh, 2021; Moutinho and Madaleno, 2020; Sheikh et al., 2020; Egoro and Obah, 2017; Lawal et al., 2016). This study seeks to enhance the existing literature by presenting the import-to-consumption ratio and import dependence ratio as novel components of international trade, to the best of our knowledge.

The import-to-consumption ratio and import dependency ratio are key indicators of a country's reliance on imported goods and their impact on economic stability. High ratios indicate significant import dependency, while low ratios indicate domestic production (Baldwin and Evenett, 2009). High import dependency exposes a country to external risks, such as trade disruptions and currency fluctuations, impacting inflation and economic stability. Policies encouraging domestic production or diversifying import sources can reduce import dependency and improve economic resilience (Krugman et al., 2023).

The study will employ the autoregressive distributed lag (ARDL) methodology for data analysis. The ARDL technique is particularly appropriate for this research because it facilitates the examination of both short-term and long-term interactions between trade and economic stability, while also considering possible volatility and structural changes in the Nigerian economy. By incorporating this methodology, the study aims to offer valuable findings for

policymakers to enhance Nigeria's economic stability through the import-to-consumption ratio, import dependency ratio, exchange rate, and inflation.

The structure of the paper includes the concept of international trade and economic stability, a review of relevant literature, and a detailed methodology section. The paper will discuss the findings in relation to existing literature and conclude with policy recommendations and directions for future research.

2   CONCEPT OF INTERNATIONAL TRADE AND ECONOMIC STABILITY

International trade entails the transfer of commodities and services across national boundaries, enabling nations to specialize in the production of things in which they possess comparative advantage and to buy necessary items from other countries. This specialization and trade can result in enhanced productivity, innovation, and comprehensive economic growth. The fundamental notions of international trade encompass comparative advantage, trade liberalization, and protectionism. Comparative advantage refers to countries' specialization in the production of items for which they have a comparative advantage, thereby reducing opportunity costs. Trade liberalization reduces trade barriers, promotes free commerce, and boosts economic growth. Protectionism safeguards indigenous businesses against international competition; nonetheless, it may result in elevated consumer costs and economic inefficiencies (Terzea, 2016).

Economic stability refers to a condition in which a nation operates efficiently and experiences consistent growth, notwithstanding external disturbances. It enables a nation to mitigate risks, invest in infrastructure, sustain its status in global markets, and attain an acceptable standard of living for its populace. Economic stability is critical for citizens' well-being and serves as a metric for a robust economy. Economic variations may be caused by financial, political, social, legal, or technical factors (Blanchard and Johnson, 2012). To mitigate susceptibility to economic challenges, a nation must engage in preparation. Ensuring stability enhances investor trust, hence drawing investments in human capital and technology resources. The government has the ability to detect and regulate indicators of a stable economy. Stabilization strategies, including fiscal and monetary policy, assist in maintaining economic stability (Market Business News, 2024).

International business may enhance economic stability by promoting diversity, fostering economic development, and ensuring political and social stability. Diversification mitigates reliance on one industry or market, whereas economic expansion stimulates new markets, enhances investment, and promotes innovation. Stable commercial partnerships may bolster political and social stability by promoting collaboration and mitigating tensions. Nevertheless, while international commerce may have overall advantages, it may also generate beneficiaries and detractors within economies. Policymakers must rectify these discrepancies to guarantee equitable distribution of trade advantages (Rodrik, 2018).

Business cycles, or boom-bust cycles, refer to the alternating phases of recession and recovery within a market economy. They comprise the stages of depression, recession, recovery, and peak. Economic instability arises when all advanced economies experience recession or depression, as seen during the 2007/2008 global financial crisis. Peace is critical for commerce, ongoing economic progress, and prosperity; it promotes peace through economic collaboration, transparency, and a multilateral strategy to address economic and political issues (Strauss-Kahn, 2009).

International trade and economic stability are interconnected, with trade promoting diversification and growth but also requiring careful management to address risks and disparities. Policymakers must balance trade benefits with mitigation strategies to ensure broad-based economic gains, promoting peace and cooperation to create a more stable global economy (Krugman et al., 2023).

3   LITERATURE REVIEW

Victor and Nwakwo (2023) conducted research analyzing the influence of foreign commerce on Nigeria's economic development from 1981 to 2020, employing the ordinary least squares (OLS) method. Factors constraining commerce include low-value commodities, high trade expenses, and tariff impediments. The results indicate that exchange rates have a negative, albeit negligible, correlation with economic growth. Research indicates that Nigeria's trade policies hinder economic progress and adversely impact GDP growth. The research indicates that promoting exports and enhancing Nigeria's international footprint are advantageous for economic development. Nguyen et al. (2023) investigated the correlation between trade openness and macroeconomic stability in 20 Asian nations from 2011 to 2019 utilizing autoregressive distributed lag (ADRL) methodology. The findings indicated that trade openness adversely affected growth stability in Asian nations, although short-term exchange rate stability had a positive effect. However, the study found no correlation between trade openness and inflation stability, indicating the need for further investigation. The study by Shido-Ikwu et al. (2023), entitled "Impact of International Trade on Economic Growth in Nigeria," examines the correlation between international trade and Nigeria's economic growth from 1981 to 2019. The study, employing the autoregressive distributive lag (ARDL) methodology, determined that export commerce exerts a positive and substantial influence on economic growth, but import trade, foreign direct investment, and exchange rates demonstrate a negative and insignificant effect.

Al-Taie et al.'s research from 2022, "The Effects of Trade Policies on Economic Growth: Empirical Evidence from the Economy of Iraq," explores how trade policies impact Iraq's economic growth. The research investigates the relationship between trade policy and economic development, utilizing data from 1986 to 2020 and the Dynamic Auto-regressive Distributed Lags (DARDL) model. The findings indicate a positive association between economic growth and factors such as industrialization, inflation, tariffs on international trade, and product exchange. Bardi and Hfaiedh's (2021) study uses a panel ARDL-PMG methodology to investigate the impact of trade openness on economic development in Mediterranean countries. The study, encompassing eight countries and covering the period from 1975 to 2016, shows that financial and commercial liberalization positively influences economic growth. The research highlights the role of investment rates and human capital in fostering economic growth. Moutinho and Madaleno (2020) introduce a novel time series model to evaluate the neutrality, conservation, growth, or feedback hypotheses for OPEC nations. The authors utilize the autoregressive distributed lags (ARDL) methodology to analyze the effects of energy consumption, oil prices, trade openness, and urbanization on economic development. The findings indicate that urbanization positively influences GDP in two nations, oil prices affect three, and trade openness is relevant in Equatorial Guinea and Angola.

Sheikh, Malik, and Masood (2020) analyze the impact of trade openness on sustainable development in India following the liberalization policy of 1991. The authors employed the autoregressive distributed lag (ARDL) model and found that trade openness positively correlates with the disparity between conventional and green GDP while negatively correlating with green GDP growth. This indicates that while trade might promote economic growth, it

may also have detrimental effects on environmental sustainability. Egoro and Obah's (2017) research examines the impact of international trade on Nigeria's economic development from 1981 to 2015. Using multiple regression estimation strategies, E-View version 9 facilitated the examination of effects. They found that international trade substantially enhances Nigeria's economic growth. To increase income, the paper recommends diversifying the export base and reducing dependence on oil exports. Lawal et al. (2016) employ the ARDL bound testing approach to examine the correlation among trade openness, financial development, and economic growth in Nigeria. The study indicates a bidirectional cointegration between trade openness and economic growth, as well as between financial development and economic growth. This indicates that trade liberalization and financial development strategies may significantly influence Nigeria's economic growth.

4   METHODOLOGY AND DATA

The Central Bank of Nigeria and the World Development Indicators (World Bank) provided the data for this study, which covers annual data from 1981 to 2022. The dependent variable is economic stability (Y), i.e., real GDP. The import-to-consumption ratio is considered an independent variable (the ratio compares the value of imports to domestic consumption, indicating the proportion of consumption that imports meet). Also, the import dependency ratio compares the value of imports to exports. A high import dependency ratio suggests that a country relies heavily on imported goods relative to its export earnings, exchange rate, and inflation rate.

Table 1: Measurement of Variables and Data Sources

S/No	Variables	Measurement	Expected sign	Sources of Data
1.	Economic stability is a proxy for real GDP (ECSTAB)	Economic stability refers to a country's smooth functioning and steady growth despite external disruptions, ensuring people have essential resources like affordable housing, employment, worker protections, paid sick leave, child care, and transportation. International trade can influence this stability. It can be measured by real gross domestic product (GDP)	-	Central Bank of Nigeria (CBN) statistical bulletin volume 33, C.1.1. Published 7/31/2023
2.	Import-to-consumption ratio (IMPDR)	This ratio compares the value of imports to domestic consumption, reflecting the proportion of consumption met by imports. Import-to-Consumption Ratio=Value of Imports/Domestic Consumption ×100.	Positive	Central Bank of Nigeria (CBN) statistical bulletin volume 33, Published 7/31/2023
3.	Import dependency ratio (IPTCR)	Import Dependency Ratio (IMPDR): This ratio compares the value of imports to the value of exports. A high import dependency ratio suggests that a country relies heavily on imported goods relative to its export earnings. Import Dependency Ratio=Value of Imports/Value of Exports.	Positive	Central Bank of Nigeria (CBN) statistical bulletin volume 33, Published 7/31/2023

| 4. | Rate of exchange of the naira to the dollar (EXCR) | The amount of domestic currency needed to buy one unit of foreign currency. For instance, if the exchange rate is quoted as 700 NGN/USD, it means 700 Naira is needed to buy 1 US Dollar. | Negative | https://data.worldbank.org/indicator/PA.NUS.FCRF?locations=NG |
| 5. | Inflation rate (INF) | Annual percentages of average consumer prices a year-on-year change. A proxy for government policy | Negative | https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?locations=NG |

Source: Source: Authors Compilation, 2024

4.1 Model Specification
The general form of economic stability can be expressed as follows:

$$ECSTAB = f(IMPDR_t, IPTCR_t, EXCR_t, INF_t) \qquad (1)$$

Where ECSTAB represents economic stability, IMPDR refers to the import-to-consumption ratio, IPTCR is the import dependency ratio, EXCR indicates the rate of exchange of the naira to the dollar, INF is the inflation rate, and t denotes the period (years). We take all the study variables in their natural logarithmic form and construct the linear model as follows:

$$LECSTAB_t = \gamma_0 + \gamma_1 LIMPDR_t + \gamma_2 LIPTCR_t + \gamma_3 LEXCR_t + \gamma_4 LINF_t + \varepsilon_t \qquad (2)$$

Where $\gamma_1, \gamma_2, \gamma_3, \gamma_4$ are the coefficients to be estimated, γ_0 is the intercept, and ε_t denotes the error term.

We specify the following reasons for using LECSTAB, LIMPDR, LIPTCR, LEXCR, and LINF in equation (2): Numerous scholars have analyzed the interconnections between trade and economic growth in different parts of the world (Shido-Ikwu et al., 2023; Nguyen et al., 2023; Al-Taie et al., 2022; Sheikh et al., 2020; Egoro, S., & Obah, 2017). Previous findings indicate that trade has a negative impact on economic growth (Shido-Ikwu et al., 2023; Nguyen et al., 2023; Sheikh et al., 2020), whereas (Al-Taie et al., 2022; Egoro, S., & Obah, 2017) project a positive impact on economic growth. Several authors (Bardi & Hfaiedh, 2021; Sheikh et al., 2020; Lawal et al., 2016) suggest that trade openness is a suitable proxy for international trade and plays a significant role in boosting economic growth. In the current study, we have introduced the import-to-consumption ratio and the import dependency ratio.

4.2 Auto-regressive distributive lag modeling approach
The present study uses the ARDL approach to discover the long-term association between LIMPDR, LIPTCR, LEXCR, LINF, and LECSTAB in Nigeria. Pesaran and Shin (1998) and Pesaran et al. (2001) primarily developed this approach. The ARDL method is better than other co-integrations in a number of ways. For example, it can be used whether the series is purely co-integrated at I(0), I(1), or mutually estimated small sample properties (Pesaran et al., 2001; Shahbaz et al., 2013). The construction of the ARDL model follows the previous studies (Shido-Ikwu et al., 2023; Al-Taie et al., 2022; Sheikh et al., 2020) as:

$$\Delta LECSTAB_t = \psi_0 + \sum_{i=1}^{P} \psi_{1i} LIMPDR_{t-1} + \sum_{i=1}^{P} \psi_{2i} LIPTCR_{t-1} + \sum_{i=1}^{p} \psi_{3i} LEXCR_{t-1} + \sum_{i=1}^{p} \psi_{4i} LINF_{t-1} + \lambda_1 LECSTAB_{t-1} +$$
$$\lambda_2 LIMPDR_{t-1} + \lambda_3 LIPTCR_{t-1} + \lambda_4 LEXCR_{t-1} + \lambda_5 LINF_{t-1} + \varepsilon_t \qquad (2)$$

Where ψ_0 refers to the constant, ε_t denotes the error term as mentioned earlier, the first part of the equation presents the error correction dynamics, and the second part of the equation indicates the long-term association. We used the ARDL-bound F-stat to examine the long-term association between LIMPDR, LIPTCR, LEXCR, LINF, and LECSTAB. If the calculated F-

stat surpasses the critical upper bound, we reject the null hypothesis of no long-term co-integration between the variables. We accept the null hypothesis of no long-term co-integration if the computed F-stat falls below the lower critical bound. Additionally, we consider the obtained outcomes inconclusive if the F-stat falls between both upper and lower critical bounds. We can derive the short-run dynamics and the error correction term using the following ARDL model:

$$\Delta LECSTAB_t = \sum_{i=1}^{p} \beta_{1i} \Delta LECSTAB_{t-i} + \sum_{i=1}^{p} \beta_{2i} \Delta LIMPDR_{t-i} + \sum_{i=1}^{p} \beta_{3i} \Delta LIPTCR_{t-i} + \sum_{i=1}^{p} \beta_{4i} \Delta LEXCR_{t-i} +$$

$$\sum_{t-i}^{p} \beta_{5i} \Delta LINF_{t-i} + \eta (ECM)_{t-1} + \varepsilon_{t-1} \tag{3}$$

4.3   Empirical Results and Discussions

We used the augmented Dickey-Fuller (ADF) and Phillips and Perron (PP) unit root tests to check the stationarity of the study variables, and Table 2 reports the results. We first apply both unit root tests based on the level of the study variables, and then we focus on the first difference. The results of both the ADF and PP tests in Table 3 demonstrated that all variables are stationary at the first difference I(1). Thus, these tests suggest that we use the ARDL model.

Table 2: Unit Root Tests Result

Variables	ADF Test Statistic		PP Test Statistic	
	Level	**First difference**	**Level**	**First difference**
LECSTAB	-0.86	-4.04***	0.45	-4.04***
LIMPDR	-2.05	-7.59***	-2.97**	-7.00***
LIPTCR	-1.41	-7.83***	-1.18	-7.75***
LEXCR	-2.16	-5.43***	-2.31	-5.43***
LINF	-3.53**	-7.18***	-3.40**	-9.63***

Source: Authors' construct using Eviews 12 (2024).
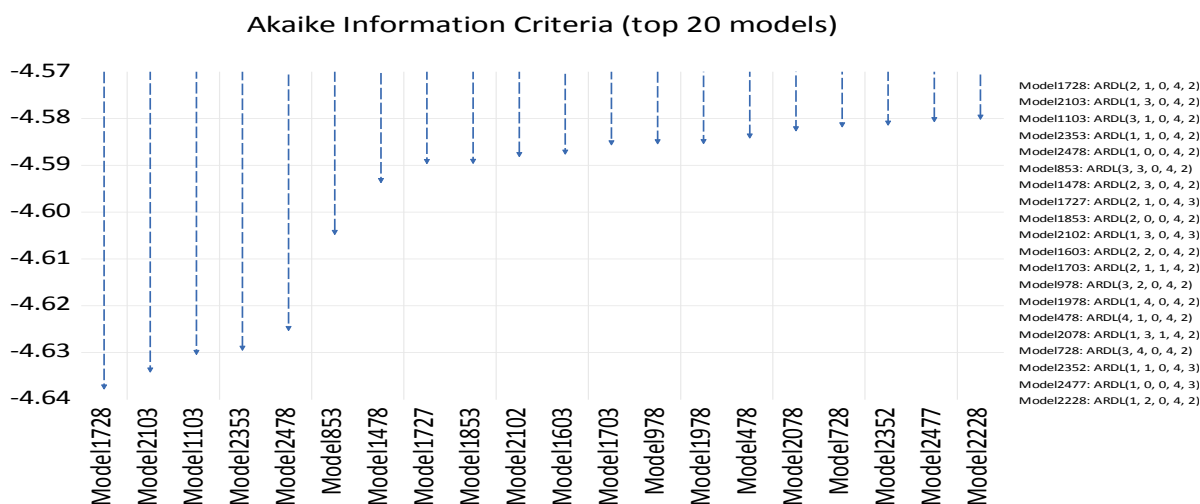Note: *** indicates significance at 1%.

Table 3: Matrix of Correlations

	LECSTAB	**LIMPDR**	**LIPTCR**	**LEXCR**	**LINF**
LECSTAB	1.0000	0.1854	0.8904	0.8694	-0.2526
LIMPDR	0.1854	1.0000	0.0511	-0.0427	0.0781
LIPTCR	0.8904	0.0511	1.0000	0.9693	-0.1675
LEXCR	0.8694	-0.0427	0.9693	1.0000	-0.1553
LINF	-0.2526	0.0781	-0.1675	-0.1553	1.0000

Source: Computation by the researchers with Eviews 12

The study also uses a correlation matrix to evaluate the correlation between the understudied constructs. The results in table 3, suggest a coefficient of 0.1854 between LECSTAB and LIMPDR, LIPTCR, and LEXCR, indicating a weak positive correlation, while a coefficient of -0.2526 between LECSTAB and LINF suggests a weak negative correlation.

4.4   ARDL Model Selection

As shown in FIgue 3, the evaluation index of the Akaike information criterion AIC estimation model with ECSTAB as the dependent variable is shown. The results show that in ARDL models with different order coefficients, the ARDL model (2, 1, 0, 4, 2) had the lowest Akaike information criterion of -4.637275. Therefore, this model is best suited for data interpolation. Therefore, this model is best suited for data interpolation

Akaike Information Criteria (top 20 models)

Model1728: ARDL(2, 1, 0, 4, 2)
Model2103: ARDL(1, 3, 0, 4, 2)
Model1103: ARDL(3, 1, 0, 4, 2)
Model2353: ARDL(1, 1, 0, 4, 2)
Model2478: ARDL(1, 0, 0, 4, 2)
Model853: ARDL(3, 3, 0, 4, 2)
Model1478: ARDL(2, 3, 0, 4, 2)
Model1727: ARDL(2, 1, 0, 4, 3)
Model1853: ARDL(2, 0, 0, 4, 2)
Model2102: ARDL(1, 3, 0, 4, 3)
Model1603: ARDL(2, 2, 0, 4, 2)
Model1703: ARDL(2, 1, 1, 4, 2)
Model978: ARDL(3, 2, 0, 4, 2)
Model1978: ARDL(1, 4, 0, 4, 2)
Model478: ARDL(4, 1, 0, 4, 2)
Model2078: ARDL(1, 3, 1, 4, 2)
Model728: ARDL(3, 4, 0, 4, 2)
Model2352: ARDL(1, 1, 0, 4, 3)
Model2477: ARDL(1, 0, 0, 4, 3)
Model2228: ARDL(1, 2, 0, 4, 2)

4.5 Bound Test

The bound test determines whether a long-term relationship exists or not. The null hypothesis states that if the value of the F-statistic indicates no long-term relationship, as in the first case, where the value is less than I(0), we do not reject the null hypothesis, and a long-term relationship does not exist. Conversely, if the value exceeds I(1), we reject the null hypothesis and conclude that a long-term relationship exists. In this example, we are in the second scenario because the F-statistic value is higher than the upper bound, indicating the presence of a long-term association at all significance levels—1%, 5%, and 10%.

Table 4: Results of the ARDL Bound Co-integration Test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic	8.667354	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
Actual Sample Size	38	Finite Sample: n=40		
		10%	2.427	3.395
		5%	2.893	4
		1%	3.967	5.455
		Finite Sample: n=35		
		10%	2.46	3.46
		5%	2.947	4.088
		1%	4.093	5.532

Source: Computation by the researchers with Eviews 12

We employed the ARDL-bound testing method to investigate the long-term relationships between the variables. Table 4 displays the computed F-statistic of 8.667354, surpassing the upper bound critical value at both the 1% and 5% significant levels. This fits the ARDL-bound testing methodology. Consequently, these findings attest to the robust long-term relationship between the exchange rate, inflation rate, import-to-consumption ratio, import dependency ratio, and economic stability. We additionally employed the Johansen cointegration test for robustness. Table 5 displays the results. The test's findings support the long-term cointegration relationship between the exchange rate, inflation rate, import-to-consumption ratio, import

dependency ratio, and economic stability variables. Whereas the Max-Eigen statistic displays four at the 1% significance level, the trace statistic displays five cointegrating equations.

Table 5: Johansen cointegration test

Hypothesized No. of CE(s)	Trace Statistic	0.05 Critical Value	Prob.**	Hypothesized No. of CE(s)	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	122.3522	69.81889	0.0000	None *	49.77148	33.87687	0.0003
At most 1 *	72.58067	47.85613	0.0001	At most 1 *	30.53780	27.58434	0.0203
At most 2 *	42.04287	29.79707	0.0012	At most 2	19.42994	21.13162	0.0851
At most 3 *	22.61293	15.49471	0.0036	At most 3 *	15.45455	14.26460	0.0323
At most 4 *	7.158390	3.841465	0.0075	At most 4 *	7.158390	3.841465	0.0075

.* Denotes rejection of the null hypothesis at the 0.05 level
Source: Computation by the researchers with Eviews 12

4.6 Long- and short-term results of the auto-regressive distributive lag model

We discovered a long-term cointegration relationship between the variables in the current study. We also calculated the import-to-consumption ratio, exchange rate, inflation rate, and economic stability using both long- and short-term estimates. Table 6 displays the long-term outcomes of the ARDL approach. Figure 4 shows a summary of the long-term association between the variables.

Table 6: The long-run results. Dependent Variable: ECSTAB.

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LECSTAB(-1)	1.113370	0.129961	8.566925	0.0000
LECSTAB(-2)	-0.155122	0.126341	-1.227807	0.2314
LIMPDR	-0.048741	0.017907	-2.721962	0.0119
LIMPDR(-1)	0.031441	0.019701	1.595872	0.1236
LIPTCR	0.009867	0.010854	0.909102	0.3723
LEXCR	-0.088409	0.020181	-4.380730	0.0002
LEXCR(-1)	0.064585	0.019745	3.271032	0.0032
LEXCR(-2)	0.011632	0.020803	0.559129	0.5813
LEXCR(-3)	0.056937	0.020446	2.784777	0.0103
LEXCR(-4)	-0.052397	0.015864	-3.302813	0.0030
LINF	-0.025076	0.008421	-2.977874	0.0065
LINF(-1)	0.000316	0.010663	0.029673	0.9766
LINF(-2)	-0.034650	0.009301	-3.725552	0.0011
C	1.443819	0.593276	2.433638	0.0228
R-squared	0.998983			
Adjusted R-squared	0.998432			
Durbin-Watson stat	2.286677			

Source: Computation by the researchers with Eviews 12, 2024

The LIMPDR variable has a coefficient of -0.048741, a t-statistic of -2.721962, and a p-value of 0.0119. This suggests that LIMPDR has a statistically significant negative impact on the economic stability variable. The variable LIPTCR has a coefficient of 0.009867, a p-value of 0.3723, and a t-statistic of 0.909102. This indicates that, at standard significance levels (e.g., 5% or 10%), LIPTCR does not have a statistically significant influence on economic stability. For LEXCR, the corresponding p-value is 0.0002, and the t-statistic is -4.380730. We can say that the LEXCR coefficient is statistically significant because the p-value is smaller than the traditional significance criterion of 0.05. Thus, we reject the null hypothesis, which holds that the real coefficient for LEXCR is zero. The coefficient for LINF is -0.025076. This demonstrates a correlation between a one-unit increase in the logarithm of the inflation rate

(LINF) and a drop of about 0.025076 units in the dependent variable, assuming all other variables are equal. LINF's t-statistic is -2.977874, and the corresponding p-value is 0.0065. We can say that the LINF coefficient is statistically significant because the p-value is smaller than the traditional significance criterion of 0.05. As a result, we reject the null hypothesis, which states that LINF's true coefficient is zero. The findings imply that variations in the rate of inflation also have a statistically significant effect on economic stability. Additionally, the ARDL regression result demonstrates a high R2 value (0.99) and an adjusted R2 value (0.99), indicating that 99% of the observed data fit the model well. Both positive and negative changes in economic stability explain the variation. The import-to-consumption ratio, import reliance ratio, exchange rate, and inflation rate are among the explanatory variables. The regression asymptote has a Durbin-Watson value of 2.29, which is close to 2. This indicates that there is little to no autocorrelation in the regression analysis's residuals. This implies that the assumption of independence of errors (residuals) remains intact, a crucial aspect for the validity of regression results and statistical inference.

4.7 Short-run analysis
Equation (3) estimates the short-run error correction model (ECM).
Table 7: Short Run Parameters and Speed of Adjustment

ECM Regression Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LECSTAB(-1))	0.155122	0.091164	1.701575	0.1018
D(LIMPDR)	-0.048741	0.013732	-3.549564	0.0016
D(LEXCR)	-0.088409	0.013182	-6.706851	0.0000
D(LEXCR(-1))	-0.016172	0.012539	-1.289710	0.2094
D(LEXCR(-2))	-0.004540	0.011665	-0.389229	0.7005
D(LEXCR(-3))	0.052397	0.011780	4.447927	0.0002
D(LINF)	-0.025076	0.006290	-3.986351	0.0005
D(LINF(-1))	0.034650	0.007536	4.597682	0.0001
ECT(-1)*	-0.041752	0.005267	-7.927062	0.0000
R-squared	0.788819			
Adjusted R-squared	0.730563			
Durbin-Watson stat	2.286677			

Source: Computation by the researchers with Eviews 12

D(LIMPDR) has a coefficient of -0.048741. This suggests that there is a correlation between a one-unit increase in the first difference of LIMPDR (LIMPDR) and a 0.048741-unit decrease in economic stability. At the traditional significance threshold of 0.05, the t-statistic of -3.549564, together with the corresponding probability of 0.0016, show that this coefficient is statistically significant. D(LEXCR), D(-1)), D(-2)), and D(LEXCR(-3)). These coefficients demonstrate how initial differences and lags in LEXCR affect economic stability. Changes in the first difference of LEXCR have a considerable impact on the dependent variable, although only the coefficient for D (LEXCR) is statistically significant. D(-1)), D(LINF). These coefficients demonstrate the influence of the initial discrepancies between LINF and its lag on economic stability. Changes in LINF's first difference have a considerable impact on economic stability, as evidenced by the statistical significance of both coefficients. The error correction terms (ECTt−1) show the speed of adjustment back to equilibrium in the estimated model. A significant relationship with a negative sign for the ECT implies the existence of a long-term equilibrium relationship among the model's variables (Narayan & Smyth, 2005). The magnitude of the ECT coefficients shows the speed of adjustment in correcting disequilibrium

to equilibrium from the previous year to the current year (Pesaran et al., 2001). When ECSTAB is the dependent variable, our result indicates that the coefficient is negative and significant at the 1% level of significance. It also connotes a speed of adjustment back to equilibrium of 0.04%.

4.8   Diagnostic Test

Table 8 below displays the results of the diagnostic test; however, we conducted the Breusch-Godfrey LM test to determine the serial independence of the model's faults. We can infer that there is no autocorrelation at the 5% level because the serial correlation result shows that the F version and the LM version are both negligible. The normality test validates the normal distribution of the series. The model is free of specification error, as shown by the fact that the p value for the Ramsey Reset test of specification error is greater than 5%. We use CUSUM and CUSUMSQ charts to see if there are any recursive residuals due to the structural break (because ARDL is highly sensitive to it). Crucially, the blue line must not cross the red line.

Table 8: Results of Diagnostic Statistics

Test	LM version	F-statistic
Normality (Jarque -Bera Test Statistics)	JQ= 0.736003 [0.692116]	Not applicable
Serial Correlation (Breusch - Godfrey LM Test)	CHSQ (2) = 2.888928 [0.2359]	F(2,22) = 0.905077 [0.4190]
Heteroscedasticity (Breusch – pagan – Godfrey)	CHSQ (13) = 17.74527 [0.1674]	F(13,24) = 1.617425 [0.1489]
Specification Error (Ramsey RESET Test)	t(23) = 0.485008 [0.6323]	F(1,23) = 0.235233 [0.6323]

Normality Test

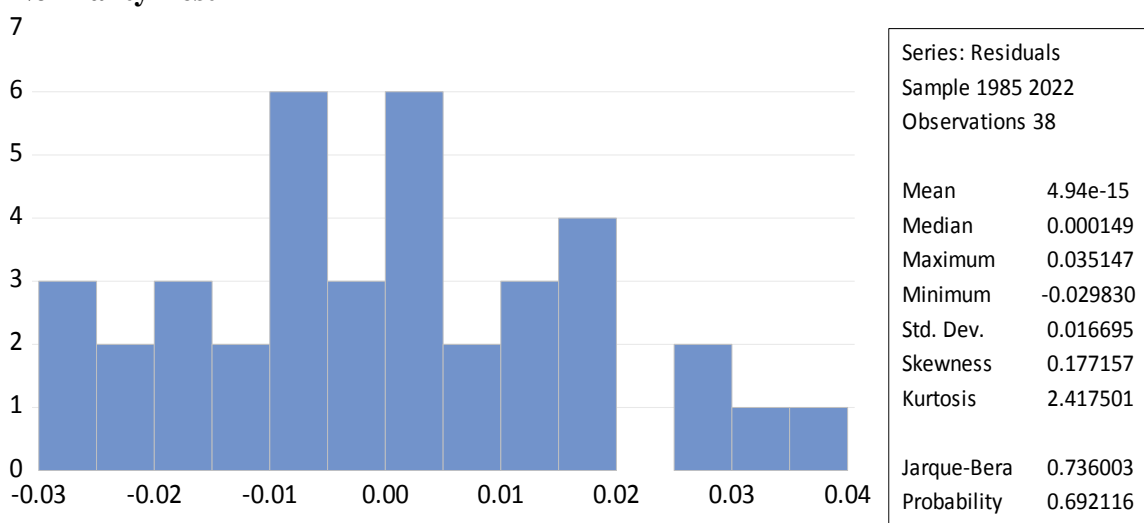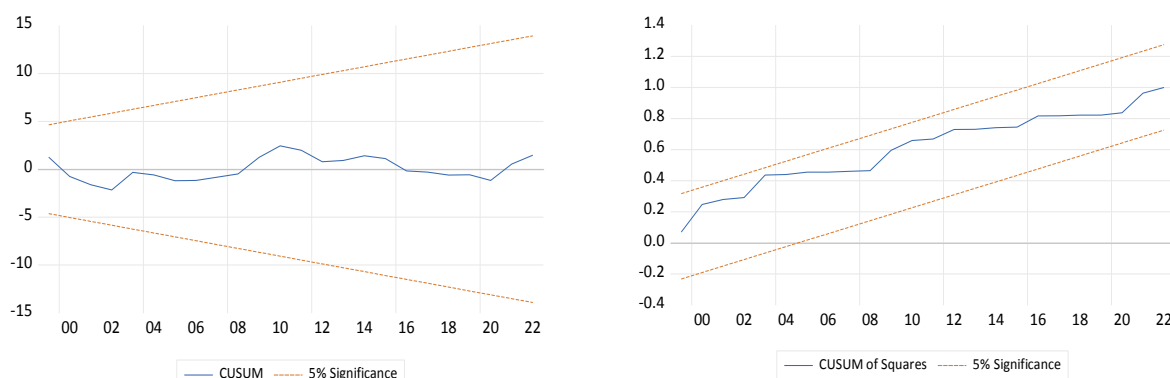| Series: Residuals	
Sample 1985 2022	
Observations 38	
Mean	4.94e-15
Median	0.000149
Maximum	0.035147
Minimum	-0.029830
Std. Dev.	0.016695
Skewness	0.177157
Kurtosis	2.417501
Jarque-Bera	0.736003
Probability	0.692116

Figure 3: Parameter stability tests

Figure 3 above displays the stability test result; the blue line does not cross the red, indicating the absence of a recursive residual in the variance of the second chart and the mean of the CUSUM. As a result, no variable is susceptible to a structural break. As a result, over the course of the study period, the model's estimated parameters remain constant.

5.   Discussion of Findings
1. The negative coefficient (-0.048741) for LIMPDR suggests that an increase in the import-to-consumption ratio has a statistically significant negative impact on economic stability. For Nigeria, this might imply that as the proportion of imports relative to consumption increases, economic stability could decrease. Given Nigeria's heavy reliance on imports for goods and services, fluctuations in this ratio could affect economic stability. Economic instability could arise if increased domestic production fails to effectively match imports, or if imports lead to a trade deficit. This findings support the study of Baldwin and Evenett (2009).
2. According to economic theory, particularly in developing economies like Nigeria, the import-to-production ratio can significantly impact economic stability. High import levels relative to domestic production could indicate over-reliance on foreign goods, which might contribute to economic instability due to trade imbalances or currency pressures. Such a ratio is expected to have an impact on economic stability. With a high p-value (0.3723) and a t-statistic (0.909102) close to zero, the findings do not contradicts the theoretical expectations Baldwin and Evenett (2009) that high import ratios can lead to trade deficits and currency depreciation. This suggests that the ratio of imports to production does not have a meaningful effect on economic stability in this analysis.
3. The exchange rate variable (P-value: 0.0065) has a statistically significant negative (-0.088409) impact on economic stability. For Nigeria, this indicates that fluctuations in the exchange rate can affect economic stability. Given Nigeria's dependence on oil exports and the associated vulnerability to exchange rate volatility, this result highlights the importance of exchange rate stability for maintaining economic stability. The findings support the result of Victor and Nwakwo (2023), Nguyen et al. (2023), and Shido-Ikwu et al. (2023) that exchange rates have a negative but insignificant relationship with economic growth.
4. In our analysis, the findings related to the inflation rate (LINF), specifically the coefficient of -0.025076, a t-statistic of -2.977874, and a p-value of 0.0065, do indeed highlight the significant negative impact of inflation on economic stability. The negative coefficient indicates that as the inflation rate increases by one unit, economic stability decreases by approximately 0.025076 units, assuming other variables remain constant. This relationship is inversely proportional, meaning that higher inflation tends

to reduce economic stability. The results do not agree with Al-Taie et al.'s (2022) findings.

5.1 Conclusions

The study concludes that the statistically significant negative impact of the import-to-consumption ratio on economic stability suggests that increased reliance on imports relative to consumption can destabilize the economy. This could be due to trade imbalances and currency pressures. The import-to-production ratio does not significantly affect economic stability, which challenges some expectations. This may indicate that the relationship between imports relative to production and economic stability is less direct or influenced by other factors not captured in this model. The significant negative effect of the exchange rate on economic stability suggests that fluctuations in the exchange rate can destabilize the economy. This is particularly relevant for Nigeria, given its dependence on oil exports and susceptibility to currency fluctuations. The negative and statistically significant coefficient for inflation (LINF) indicates that higher inflation rates have a substantial negative effect on economic stability. This underscores the critical need for effective inflation management to maintain economic stability. The ECT coefficients reflect how quickly Nigeria's economy returns to equilibrium after a disturbance. A significant negative ECT implies that there is a long-term equilibrium relationship among the variables affecting Nigeria's economy. The 0.04% adjustment speed indicates a relatively slow correction process, meaning that it takes time for the economy to stabilize after disturbances.

5.2 Recommendations

1. The government should implement policies to support domestic production, reduce import reliance, and improve industrial capabilities. Also, the government should review and adjust trade policies to balance local production with import management, such as tariffs or subsidies. Investing in innovation and technology can enhance domestic production efficiency and competitiveness.
2. Further research is required to understand import-to-production ratio factors and their impact on economic stability. To align trade and production policies with economic stability goals and make adjustments based on new insights, the government must review policy.
3. To stabilize the currency, the government should maintain adequate foreign exchange reserves, use currency interventions when needed, and diversify the export base to reduce its dependence on oil exports.
4. To curb inflation, the Central Bank of Nigeria should consider tightening monetary policy by raising interest rates, implementing a clear inflation targeting framework, and addressing supply chain constraints to reduce cost-push inflation through infrastructure and logistics investments.

5.3 Policy Implications

1. Reducing import dependency can mitigate trade imbalances and protect the economy from external shocks, while promoting domestic industries supports long-term economic growth by creating jobs and fostering industrialization.
2. Understanding import-to-production ratios in various sectors enhances policy effectiveness and economic strategy, allowing for targeted policies and tailored solutions to address sectoral challenges.
3. Stable exchange rates offer economic resilience by reducing volatility, benefiting consumers and businesses, and increasing foreign direct investment due to their predictable nature.

4. Inflation management is critical for economic stability because it reduces uncertainty and promotes a stable investment climate while also restoring consumer and investor confidence, which contributes to overall growth.

References

Al-Taie, A. H. H., Ali, F. K., & Jarallah, S. H. (2022). The Effects of the Trade Policies on the Economic Growth: Empirical Evidence from the Economy of Iraq. *International Journal of Economics and Finance Studies*. ISSN: 1309-8055. DOI: 10.34109/ijefs.20220077.

Baldwin, R. E., & Evenett, S. J. (2009). *The collapse of global trade, murky protectionism, and the crisis: Recommendations for the G20*. Centre for Economic Policy Research (CEPR).

Bardi, W., Hfaiedh, M.A. (2021). International trade and economic growth: evidence from a panel ARDL-PMG approach. *Int Econ Econ Policy* 18, 847–868. https://doi.org/10.1007/s10368-021-00507-4

Blanchard, O., & Johnson, D. R. (2012). *Macroeconomics* (6th ed.). Pearson.

Dankumo, A. M., Ishak, S., Oluwaseyi, Z. A. & Onisanwa, I. D. (2019). Does Okun's Law explain the relationship between economic growth and unemployment in Nigeria? *Malaysian Journal of Economics*, 3(3), 153-161.

Dankumo, A.M., Ishak, S., Bani, Y. & Hamzah, H.Z. (2020). Relationship between governance and trade: Evidence from Sub-Saharan African Countries. *Research in World Economy*, 11(6), 139-154.

Egoro, S., & Obah, D. (2017). The Impact of International Trade on Economic Growth in Nigeria: An Econometric Analysis. *Asian Finance & Banking Review*, 1(1). Published by Centre for Research on Islamic Banking & Finance and Business.

International Monetary Fund. (2009). *World economic outlook: Sustaining the recovery*. International Monetary Fund.

Krugman, P., Obstfeld, M., & Melitz, M. J. (2023). *International economics: Theory and policy* (12th ed.). Pearson.

Lawal, A. I., Nwanji, T. I., Asaleye, A., Ahmed, V., & Camarero, M. (2016). Economic growth, financial development and trade openness in Nigeria: An application of the ARDL bound testing approach. Cogent Economics & Finance, 4(1). https://doi.org/10.1080/23322039.2016.1258810

Market Business News. (2024). Stability: Definition and meaning. Market Business News. https://marketbusinessnews.com/financial-glossary/stability-definition-meaning/

McConnell, J. E. (2001). *International trade*. In N. J. Smelser & P. B. Baltes (Eds.), *International Encyclopedia of the Social & Behavioral Science*. Elsevier. https://www.sciencedirect.com/topics/economics-econometrics-and-finance/international-trade.

Moutinho, V., & Madaleno, M. (2020). Economic growth assessment through an ARDL approach: The case of African OPEC countries. In Proceedings of the 7th International Conference on Energy and Environment Research (ICEER 2020) (pp. 14–18). NECE-Research Center in Business Sciences and Management, University of Beira Interior; GOVCOPP - Research Unit in Governance, Competitiveness and Public Policy, University of Aveiro. https://doi.org/

Myrdal, G. (1960). *Economic theory and underdeveloped regions* [Review of the book *Economic Theory and Underdeveloped Regions*, by G. Myrdal]. *India Quarterly*, 16*(2), 189-191. https://doi.org/10.1177/097492846001600220.

Nguyen, V. M. H., Ho, T. H., Nguyen, L. H., & Pham, A. T. H. (2023, July). The Impact of Trade Openness on Economic Stability in Asian Countries. *Sustainability*, 15 (15). DOI:10.3390/su151511736.

Obisike, N. E., Onwuka, I. N., Okoli, U. V., & Udeze, R. C. (2020). Impact of international trade on Nigerian economic growth: Evidence from oil terms of trade. *International Journal of Economics and Financial Management*, 5(2), 31. IIARD – International Institute of Academic Research and Development. https://www.iiardpub.org.

Onoja, A. J. (2020, October 8). *The impact of international trade on the Nigerian economy*. Economic Confidential. https://economicconfidential.com/2020/10/impact-international-trade-nigerian-economy/.

Pesaran, M.H. & Shin, Y. (1998). An autoregressive distributed-lag modelling approach to cointegration analysis, *Econometric Society Monographs*, Vol. 31, pp. 371-413.

Pesaran, M.H., Shin, Y. & Smith, R.J. (2001). Bounds testing approaches to the analysis of level relationships, *Journal of Applied Econometrics*, Vol. 16 No. 3, pp. 289-326.

Prebisch, R. (1950). *The economic development of Latin America and its principal problems*. *Economic Commission for Latin America, United Nations Department of Economic Affairs*. https://repositorio.cepal.org/server/api/core/bitstreams/08ac817a-864c-4df6-961c-7745a3b2fae9/content.

Rodrik, D. (2018). *Straight talk on trade: Ideas for a sane world economy*. Penguin Books.

Shahbaz, M., Shahbaz Shabbir, M. & Sabihuddin Butt, M. (2013). Effect of financial development on agricultural growth in Pakistan: new extensions from bounds test to level relationships and granger causality tests, *International Journal of Social Economics*, Vol. 40 No. 8, pp. 707-728, doi: 10.1108/IJSE-01-2012-0002.

Sheikh, M. A., Malik, M. A., & Masood, R. Z. (2020). Assessing the effects of trade openness on sustainable development: evidence from India. Asian Journal of Social Responsibility and Sustainability, 5(1). https://doi.org/10.1186/s41180-019-0030-x.

Shido-Ikwu, S. B., Dankumo, A. M., Pius, F. M., & Fazing, E. Y. (2023). Impact of International Trade on Economic Growth in Nigeria. Lafia *Journal of Management Sciences and Economics,* 8 (1). ISSN: 2550-732X.

Singer, H. W. (1950). The distribution of gains between investing and borrowing countries. *American Economic Review*, 40*(2), 473-485.

Strauss-Kahn, D. (2009, October 23). Economic stability, economic cooperation, and peace—the role of the IMF [Speech]. International Monetary Fund. https://www.imf.org/en/News/Articles/2015/09/28/04/53/sp102309

Terzea, E. R. (2016). The concept of international trade and main classic theories. *SEA - Practical Application of Science*, 4*(2), 243-254. https://seaopenresearch.eu/Journals/articles/SPAS_11_10.pdf.

Victor, A. O. & Nwakwo, O. (2023). Effects of International Trade on Economic Growth in Nigeria. *International Journal on Economics, Finance and Sustainable Development*, 5(10), 1-23. https://doi.org/10.31149/ijefsd.v5i10.4820

World Trade Organization. (2023). International trade: An overview. Retrieved from https://www.wto.org/english/res_e/reser_e/ersd202301_e.htm