



Received: 27-08-2025
Accepted: 07-10-2025

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Monetary Policy and Trade Openness: Implications on Economic Growth in Nigeria

¹ Joseph Olufemi Ogunjobi, ² Melody Hegoghie, ³ Adebayo Olufemi Oladipo, ⁴ Bolatito Oni

^{1,2} Department of Economics, Landmark University, Omu Aran, Kwara State, Nigeria

³ Department of Accounting and Finance, Landmark University, Omu Aran, Nigeria

⁴ Department of Business Studies, Landmark University, Omu Aran, Kwara State, Nigeria

Corresponding Author: Joseph Olufemi Ogunjobi

Abstract

The impact of monetary policy and trade openness on economic growth is the main focus of the research work. The investigation used time series data from 1993 to 2023. The data analysis employed was ARDL bounds test. The study concludes, that a long run relationship does exist between monetary policy, trade openness and economic growth. Money supply and Trade openness have positive

impacts on economic growth in the long run. The study, therefore, recommended that to ensure economic growth the government should aim at reducing inflation and also adopt monetary policies that will spur economic growth. There should also be policies to increase trade especially exports to aid economic growth.

Keywords: Monetary Policy, Money Supply, Trade Openness, Economic Growth

Introduction

Monetary policy and trade openness are two critical components that affect economic growth significantly. Monetary policy enacted by the apex banks in any country, encompasses the management of interest rates and money supply to stabilize the economy and foster growth. In Nigeria, the interaction between these two elements has significantly impacted the nation's economy over the past three decades. Monetary policy, primarily executed by the apex bank in Nigeria which is the Central Bank of Nigeria (CBN), entails managing interest rates, money supply, and inflation, and the primary aim is ensuring price stability, full employment, and sustainable economic growth. On the other hand, trade openness, characterized by the reduction of barriers to international trade, such as tariffs and import restrictions, has the potential to foster increased competition, innovation, and investment, ultimately boosting economic development.

From 1993 to 2023, Nigeria's economic landscape has undergone significant transformations, driven by both domestic and global factors. The period witnessed several changes in monetary policy strategies, with the country adopting various approaches to manage inflation, stabilize the currency, and promote investment. Concurrently, Nigeria's trade openness evolved, with periodic shifts in the country's international trade policies, regional economic agreements, and the integration of global markets. However, while both monetary policy and trade openness offer opportunities for economic growth, their outcomes in Nigeria have been complex, shaped by challenges such as fiscal deficits, oil price volatility, political instability, and external shocks. This article discovers the implications of monetary policy and trade openness on Nigeria's economic growth from 1993 to 2023. By analyzing the interactions between these two factors and examining their influence on major economic indicators such as GDP growth, inflation, and employment, this paper seeks to present a comprehensive understanding of their role in shaping the nation's economic performance.

Empirical Review

Abinabo and Abubakar (2023) analyzed the relationship between trade openness and economic growth in Nigeria from 1990 to 2021. Secondary data was used while Johansen co-integration and error correction model (ECM) were used to process the data. The results reveal that a long-run relationship exists between trade openness and economic growth in Nigeria. The results also show that trade openness has positive and significant impact on economic growth in Nigeria and that import has significant negative effect on economic growth in Nigeria. Imandojemu *et al* (2023) ^[13] utilized time series data from 1970 to 2018, an

autoregressive distributed lag (ARDL) model, bounds and the Bayerhanck co- integration tests to investigate whether monetary policy stimulates economic growth in Nigeria. The evidences from the main and robustness checks show that there is a significant long run relationship between monetary policy and economic growth in Nigeria and also an inverse relation between monetary policy and economic growth in Nigeria.

Dauda and Abdulkareem (2023) ^[10] observed the impact of monetary policy on economic growth in Nigeria from 1990 to 2020. Their work utilized the ARDL bounds test to examine long run relationship among the variables in the study. The short run regression test ran using ARDL regression method revealed that monetary policy is a key determinant of economic growth in Nigeria. From the results, the study settles that monetary policy affects Nigeria's economic growth significantly. Adeagbo (2021) ^[11] studied the effect of monetary policy on economic growth in Nigeria. The study utilized yearly data covering the period 1971 to 2018. The study employed the Ordinary Least Square method to analyze the data collected. The evidences from the results reveal that a long run relationship exists among the variables and that some independent variables like money policy rate, interest rate and investment to productive sector, present a positive but insignificant effect on economic growth. Real exchange rate has a negative impact on economic growth in Nigeria. Money supply is another independent variable has a positive and noteworthy effect on economic growth.

Arema and Arambada (2021) studied both the individual and joint impacts of trade openness and financial openness on economic growth. The study focused on sub-Saharan African (SSA) countries within the period of 1980 and 2017 using panel data. These countries of focus were grouped into low and middle-income countries. The study made use of the dynamic panel analysis, the techniques of difference generalized method of moments (GMM) and system GMM. The overall empirical results on low-income countries show that trade openness has a significant and positive impact on economic growth. The results for financial openness and the joint trade and financial openness on the other hand, do not show significant positive impact on economic growth. For middle income countries, the effect on trade openness on economic growth is diverse but both financial openness and the joint trade and financial openness do not spur economic growth.

Okoh and Otene (2020) observed the impact of monetary policy on economic growth in Nigeria. The vector autoregression technique (VAR) was utilized to analyze the data collected from 1980 to 2017. Evidences from the result findings show that monetary policy which was signified by money supply (M2) has a positive impact on economic growth with RGDP. Monetary policy variables-interest rate, money supply, exchange rate and liquidity ratio all had a negative and insignificant effect alongside inflation. Afolabi (2020) examined the impact of financial liberalization and trade openness along with their interactive effects on the growth of the Nigerian Economy. The study used yearly time-series data for the period, 1981 to 2018. Johansen cointegration test and dynamic ordinary least square (DOLS) were used to confirm the presence of long run relationship among the variables in the model. The study also employed the use of Granger Causality test. The results show that financial development, exchange rate and interest

rate spread have a significant influence on real GDP in Nigeria while trade openness, as well as its interaction with financial development, do not exert any significant impact on economic growth in Nigeria.

Olori (2017) explored the relationship between monetary policy and real gross domestic product in Nigeria from 1980 to 2015. The main aim of the study was to examine the impact of treasury bills rate, exchange rate and interest rate on real gross domestic product. The study utilized secondary data and the ordinary least squares (OLS) methodology. The results of the study's analysis reveal that an insignificant and positive relationship exists between treasury bills rate and real gross domestic product but there was a negative and insignificant relationship between interest rate and real gross domestic product. There was also a positive and significant relationship between exchange rate and real gross domestic product. The study then settles that monetary policy has significant impact on real gross domestic product in Nigeria. Omodero and Okafor (2020) ^[14] considered the effectiveness of monetary policy tools in guaranteeing economic growth stability in Nigeria. The study adopted three of the monetary policy instruments: money supply, interest rate and exchange rate to investigate the effectiveness of the monetary policy on economic growth stability in Nigeria from 1998 to 2018. From the findings, money supply is considerably positive in influencing the GDP, which is used as a proxy for economic growth stability. However, interest rate and exchange rate do not have a significant impact on the GDP. The study concludes that money supply is the most productive monetary policy tool in Nigeria. David and Obiaje (2023) examined the impact of monetary policy on economic growth in Nigeria, utilizing annual data covering the period from 1985 to 2022. The study observed the relationship among the economic growth, exchange rate, inflation rate, interest rate and money supply in Nigeria. The study used the autoregressive distributed lag (ARDL) approach and the results recognized a long run relationship between economic growth and interest rate and money supply. The objective of this study is to examine the long-run effects of monetary policy and trade openness on economic growth of Nigeria.

Source of Data

The data used in this work was collated from the National Bureau of Statistics, Central Bank of Nigeria, the World Development Indicators and the World Bank.

Methodology

The theoretical interaction between money supply, trade openness, and economic growth can be viewed through the following contest: money supply and trade openness, monetary policy and global trade dynamic, and the financial integration and capital flows. However, Monetarists theory by Milton Friedman, Krugman's new trade theory and the endogenous growth theory by Paul Roman are all embedded in the topic.

Model Specification

The model used in this study was adopted from the work of Ariyo & Bakare (2015). Inflation variable was introduced to complement the adopted model.

$$RGDP = f(M2, INT, INFR, EXR, TOP)$$

Where;

M2 is money supply, INT is interest rate, TOP is trade openness, INFR is inflation rate and EXR is exchange rate. In econometric modelling,
 $RGDP = f(\beta_0 + \beta_1 M2 + \beta_2 INT + \beta_3 INFR + \beta_4 EXR + \beta_5 TOP + \mu)$.

β = Constant or Intercept and μ is a stochastic term

Presentation of Results

Table 1: Descriptive Statistics

	RGDP	M2	INT	INFR	EXR	TOP
Mean	5.413095	3.877069	3.342800	17.68	113.5614	36.23971
Median	5.628559	4.130058	5.790567	12.53783	100.6309	36.05871
Maximum	6.352949	5.100398	18.18000	72.83550	273.0093	53.27796
Minimum	4.038145	2.513384	-31.45257	5.388008	54.43981	16.35219
Std. Dev	0.740587	0.710478	9.902993	16.31673	49.18925	9.825317
Skewness	-0.539897	-0.202642	1.657748	2.352747	1.886525	-0.172004
Kurtosis	1.910700	2.096836	6.602946	7.405709	6.209630	2.290579
Jarque-Bera	2.842642	1.184119	28.96826	50.20861	29.64964	0.751124
Probability	0.241395	0.553187	0.000001	0.000000	0.000000	0.686903
Sum	156.9798	112.4350	96.94121	512.9866	3293.280	1050.951
Sum Sq. Dev	15.35713	14.13383	2745.940	7454.598	67748.30	2703.032
Observations	29	29	29	29	29	29

Table 1 above revealed the average of RGDP as 5.413095, its minimum and maximum as 4.038145 and 6.352949 respectively, while its standard deviation stands as 0.740578. The mean of the money supply (M2) is 3.877069, the minimum and maximum are 2.513384 and 5.100398, its standard deviation is 0.710478.

Also, the interest rate has its mean as 3.342800, its maximum, 18.18000, and minimum, -31.45257 while its standard deviation stands as 9.902993. The mean of the inflation rate 17.68, its maximum is 72.83550, the minimum 5.388008 and the standard deviation shows 16.31673. The exchange rate has 113.5614 as its mean, 273.0093 as its maximum and 54.43981 as its minimum, while its standard deviation is 49.18925. Finally, trade openness has 36.23971 as its mean, 53.27796 as its maximum, 16.35219 as minimum and 9.825317 as is standard deviation respectively.

Table 2: Unit Root Test (Augmented Dickey Fuller Test)

Variables	ADF Result		Order of Integration
	Level	First Difference	
Rgdp	-1.976099	-4.688102	I (1)
M2	-2.068835	-8.195359	I (1)
Int.	-6.878006	-	I (0)
Infl.	-3.489441	-	I (0)
Exr	-2.761087	-3.940249	I (1)
Top	-2.667604	-5.172969	I (1)

In order for the unit root test to remain stationary at level, the test statistic value must be greater than the critical value by at least 5% absolute term. If this is not the case, differencing takes place using the same decision rule. According to the ADF unit root test result, INT and INFR are stationary at level, however RGDP, M2, EXR, and TOP are stationary at first difference.

Table 3: Ardl Bounds Test

Significance Level	Critical Bounds		F Stat Value	Kmax	Hypotheses Testing
	I (0)	I (1)			
At 10%	2.26	3.35	5.589460	5	C.E
At 5 %	2.62	3.79	5.589460	5	C.E
At 2.5%	2.96	4.18	5.589460	5	C.E
At 1%	3.41	4.68	5.589460	5	C.E

*C. E = Co-integration Exists

There is a long-term association between the variables in the model, as indicated by the F-statistic, which is higher than the upper bounds at all significant levels according to the ARDL bounds test in Table 3. The ECM and long-term form of ARDL must be specified due to the occurrence of cointegration.

Table 4: Ardl Error Correction Regression

Variables	Coefficient	Std. Error	T-Statistic	Prob
D(EXR)	0.767588	0.109353	7.019344	0.0000
D(EXR (-1))	0.337966	0.119635	2.824979	0.0112
Co-int Eq(-1)*	0.006138	0.000938	6.546184	0.0000
R-squared	0.829848			
Adjusted R-squared	0.807654			

The exchange rate is the sole variable that has shown itself to be important and adjusting in the near term, according to the results of the error correction regression for the ARDL model, which are displayed in Table 4. The ECT co-efficient, which has a negative value and is significant at 1% (Cointeq(-1)(0.006138), indicates the short-term adjustment speed.

Table 5: Ardl Long Run Coefficients

Long Run Coefficients				
Variables	Coefficients	Std. Error	T-Statistic	Prob.
RGDP(-1)*	0.006138	0.068578	0.089497	0.9297
M2**	0.365790	0.253202	1.444658	0.1657
INT**	-3.560477	1.189786	-2.992535	0.0078
INFR**	-3.204125	0.879129	-3.644661	0.0019
EXR(-1)	-0.228670	0.142939	-1.599770	0.1271
TOP**	2.631905	0.772251	3.408095	0.0031
D(EXR)	0.767588	0.152504	5.033212	0.0001
D(EXR(-1))	0.337966	0.150686	2.242849	0.0377

The ARDL long run coefficients in Table 5 show that the variables in the model excluding, interest rate, inflation rate and exchange rate have positive impacts on real GDP. According to the study's findings trade openness has a positive and significant impact on RGDP in the long run. This implies that an increase in exports or trade in general will lead to an increase in RGDP. The findings also show that money supply has a positive but not significant impact on RGDP in the long run. This implies that an increase in M2 will lead to an increase in RGDP. This means that strong economic activity is sparked up by good trade and money supply. INT, INFR and EXR have negative impacts on RGDP in the long run. This means that an increase in any of these variables will lead to a decrease in RGDP.

Conclusion and Recommendation

The study investigates how trade openness and monetary policies affect Nigeria's economic expansion. RGDP, money supply (M2) interest rate, inflation rate, exchange rate, and trade openness are among the variables that were employed in this study. Using time series data, the study examined 30 years from 1993 to 2023. The study concluded that trade openness, economic growth, and monetary policy do have a long-term link. While INT, INFR, and EXR have long-term negative effects on RGDP, M2 and TOP have long-term beneficial effects. From the study findings, we can conclude that one of the ways to grow the economy in Nigeria is to focus more on trade especially exports and also to enact proper monetary policy to increase the strength of the naira. Also, inflation is to be kept at a minimal level to avoid drop in currency value and also in the GDP.

The findings of this study is in aligned with the work of Omodero and Okafor (2021), Chiaraah (2023) which revealed that monetary policy has positive effect on trade openness and economic growth of any economy.

In conclusions, an interaction between monetary policy and trade openness positively benefits the growth of the Nigerian economy. Therefore, while the economy should stay open to trade, there is need to guarantee that the correct monetary policies are enacted boost economic growth in Nigeria.

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