Journal of Business and Economic Policy
UNIZIK Business School, Nnamdi Azikiwe University, Awka

UBSJBEP
1 (3)
https://journals.unizik.edu.ng/index.php/ubsjbep
Quarterly Journal of UNIZIK Business School, Awka, Nigeria

MONETARY POLICY AND FINANCIAL SECTOR DEVELOPMENT: EVIDENCE FROM NIGERIA

CITATION: [1]Marshal IWEDI & [2] Mark Bekweri (2023), Monetary Policy and Financial Sector Development: Evidence from Nigeria, *UBS Journal of Business and Economic Policy,* 1(3), 111-125

Paper Type**: Original Research Paper;* ***Correspondence: marshal.iwedi@ust.edu.ng

[1]Marshal IWEDI & [2] Mark Bekweri EDEH,
[1, 2] Department of Banking and Finance, Rivers State University, Port Harcourt, Nigeria
email: marshal.iwedi@ust.edu.ng & edeh.bekweri@ust.edu.ng

Abstract
The research aims to explore how monetary policy impacts the growth of the financial sector in Nigeria. Financial data spanning from 1981 to 2021 was collected from both the Central Bank of Nigeria and the National Bureau of Statistics. Analytical tools including unit root tests, co-integration tests, regression techniques, and Granger causality tests were employed for analysis. The outcomes of the regression analysis demonstrated that both the monetary policy rate and Treasury bill rates have a detrimental effect on the development of Nigeria's financial sector. Conversely, the exchange rate and inflation rate were found to have a positive influence on the growth of the financial sector. As a result, the study concluded that elements such as money supply, treasury bill rates, monetary policy rate, and exchange rate play a significant role in shaping the development of the financial sector during the study period. In light of these findings, the study suggests that maintaining exchange rate stability is vital for fostering economic growth. Consequently, the study recommends that both governmental authorities and monetary institutions should prioritize exchange rate stability by adopting effective exchange rate policies to ensure a steady and reliable exchange rate.
Keywords: Monetary policy, financial sector development, exchange rate, inflation rate, treasury rate, money supply

Introduction

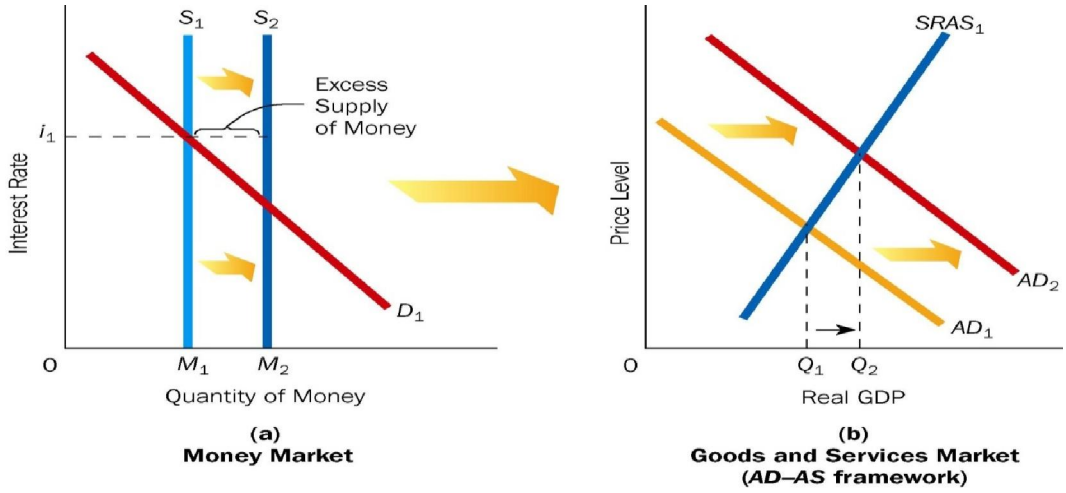
A variety of recent global and domestic economic and financial developments have impacted monetary policy. These include geopolitical tensions, macroeconomic concerns related to the Russia-Ukraine crisis, and repercussions from the COVID-19 pandemic. Factors such as tightening external financial conditions, Russian sanctions, disruptions in the global supply chain due to the Ukraine invasion, and vulnerabilities arising from the rapid growth of global debt portfolio and financial stability risks also affect the situation. In addition, major financial markets face greater uncertainty, while central banks grapple with the risk of rising prices resulting from extensive monetary and fiscal stimulus measures. These developments pose challenges to monetary policy. However, Nigerian macroeconomic indicators indicate a slow development of the country's economy in most of 2022. Growth is hindered by rising energy prices, tighter external financial conditions in Advanced Economies, and ongoing security and infrastructure challenges. Nonetheless, ongoing monetary and fiscal stimuli are expected to aid the recovery until growth risks decrease and inflation risks diminish significantly. Projections suggest that the Nigerian economy will expand by 3.24 percent (CBN), 4.20 percent (FGN), and 2.70 percent (IMF) in 2022. Moreover, there is concern regarding the global price increase of petroleum and other goods and its practical impact on all economies, leading to imported inflation in Nigeria. Measures must be taken to prevent this trend from persisting to protect

Nigerians from the negative effects of rapidly rising prices. This scenario presents a significant challenge to monetary policy in Nigeria. Consequently, the impact of effective monetary policy on financial sector development has garnered increased attention from researchers in recent years. There are limited empirical studies on this question, and the results are inconclusive. This paper contributes to the existing literature by presenting new evidence on the relationship between monetary policy and financial sector development. Analysing financial time series data spanning 40 years (1981-2021), particularly in the context of the monetary policy committee's adoption of a hold policy stance, which aligns with the current economic conditions, is significant given the ongoing Russia-Ukraine conflict and its economic and financial ramifications.

Literature Review

Monetarist Theory of Monetary Policy

The theory of monetarism posits that increasing the money supply leads to a rise in overall demand, leading to increased real GDP and higher prices, while decreasing the money supply leads to a decrease in aggregate demand, real GDP, and prices, coupled with a rise in unemployment. This relationship can be represented visually as follows:

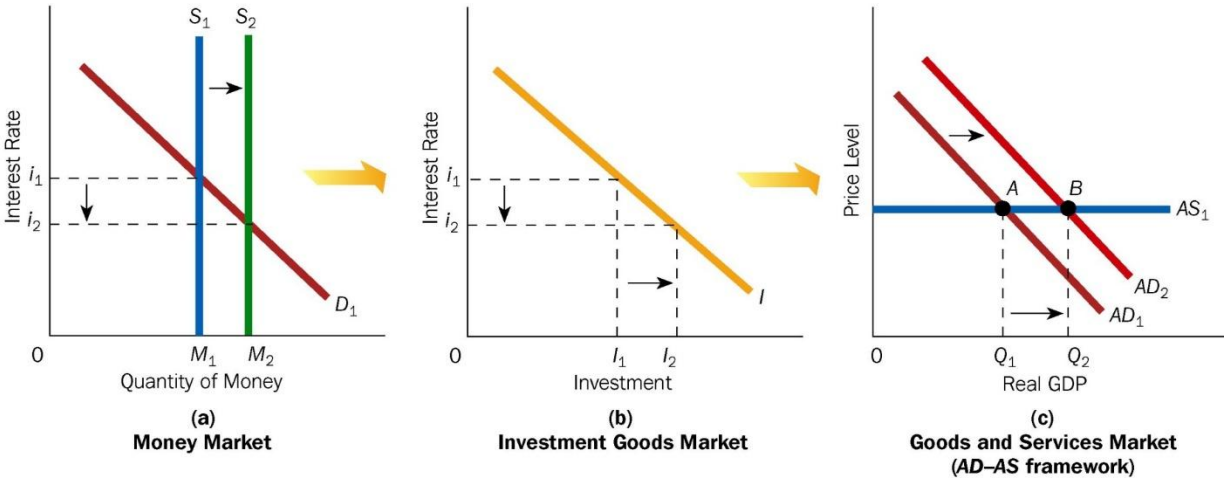


Keynesians Theory of Monetary Policy

The Keynesian school of thought examines how monetary policy influences the money market, the market for investment goods, and the market for goods and services. As per the Keynesian transmission mechanism, an augmentation in the money supply leads to a decrease in the interest rate. Consequently, this stimulates investment, causes a rightward shift in the aggregate demand (AD) curve, enhances real GDP, and lowers the unemployment rate. This concept can be visually represented in the following graphical depiction:

Journal of Business and Economic Policy
UNIZIK Business School,
Nnamdi Azikiwe University, Awka

UBSJBEP
1 (3)
https://journals.unizik.edu.ng/index.php/ubsjbep
Quarterly Journal of UNIZIK Business School, Awka, Nigeria



Financial Sector Development Theories

The theories related to the development of the financial sector employ two indicators to examine whether there exists a direct causal relationship between monetary policy and the advancement of the financial sector. These indicators are as follows:

Hypothesis of Supply-Driven Growth

The hypothesis of supply-driven growth asserts that the progress of the financial sector propels economic advancement. It serves two main purposes: reallocating resources from sectors with sluggish growth to those with rapid growth, and spurring entrepreneurial activity within these modern sectors (Patrick, 1996). This suggests that the establishment of financial institutions and services precedes the actual demand for them. According to the supply-driven hypothesis, the causal flow originates from finance and leads to economic growth without reciprocal influence. A well-developed financial sector plays a pivotal role in fostering economic growth.

Hypothesis of Demand-Induced Development

The hypothesis of demand-induced development contends that the expansion of financial service demand is contingent upon the enlargement of actual output, accompanied by the commercialization and monetization of other sectors. This hypothesis maintains that effective utilization of the economy drives financial advancement. To substantiate this viewpoint, Robinson (1952) posits that "finance follows where enterprise leads," suggesting that the development of the financial sector is essentially a response to the escalating need for financial services as the real economy undergoes expansion.

Empirical Review

Empirical investigations have firmly established a robust connection between monetary policy and the development of the financial sector across a range of countries. In a study by Ma and Lin (2016), this relationship was scrutinized through the analysis of panel data from 41 economies. The outcomes of their research revealed a noteworthy negative correlation between financial development and the efficacy of monetary policy on both output and inflation. Another research effort, conducted by Onoh (2017), delved into the influence of monetary policy on the turnover of commercial banks in Nigeria. The results demonstrated a substantial and negative association between the liquidity ratio and the turnover rate of banks, while the money supply and cash reserve ratio displayed significant positive and negative relationships, respectively,

with bank assets and loans. This analysis was conducted utilizing multiple regression techniques. In a separate investigation, Iwedi (2019) examined the channels through which monetary policy affects economic growth in Nigeria. Employing a vector auto regression model and utilizing a time series dataset spanning 56 years, the study unearthed a favourable short-term connection between monetary policy transmission channels and macroeconomic output in Nigeria.

Using the ARDL methodology, Bashir and Sam-Siso (2020) investigated the ramifications of monetary policy on macroeconomic performance during a downturn in Nigeria. The study's findings indicated that variables such as inflation rate, exchange rate appreciation, and money supply in circulation had short-term effects on inflation. Additionally, currency rate appreciation and depreciation emerged as pivotal factors influencing inflation, growth, and unemployment in the long term. Furthermore, the study pointed out that while money supply had a detrimental impact on GDP growth, it had a positive influence on inflation and unemployment. Tonuchi, Nwolisa, Obikaonu, and Alase (2021) undertook an evaluation of the effectiveness of monetary policy in advancing financial inclusion in Nigeria, taking into account the role of Financial Technology. Their analysis of quarterly time series data unveiled the significant impact of inflation rate and lending rate on financial inclusion within the country. Lastly, Okey, Nyiputen, Ugbaka, and Eugene (2022) empirically examined the impact of the monetary policy rate (MPR) on Nigeria's economic growth using annual data spanning from 2006 to 2020. The findings underscored a noteworthy and negative influence of the monetary policy rate on economic growth.

Methodology

Data and Estimation Techniques

The examination employed the financial time series approach to gather yearly data. The data, taken from the Central Bank of Nigeria statistical Bulletin (2021), covers a span of ten years from 1981 to 2021. The time series comprises information on monetary policy rate, treasury bill rates, inflation rates, and exchange rates. Financial sector liquidity served as a proxy for financial sector development in Nigeria. The data was analyzed using the ordinary least square method (OLS) estimation technique.

Model Specification

The monetary policy and financial sector development in Nigeria are modelled as follows:

$$FSL = f(MPR, TBR, INF, EXR) \quad 1$$

Since this equation is functional or linear in nature, when it is converted into an econometric equation, we obtain:

$$FSL = \alpha o + \beta 1\ MPRt + \beta 2\ TBRt + \beta 3\ INFt + \beta 4\ EXRt + \mu 3$$

Where;
FSL= Financial sector liquidity (proxy for financial sector development)
MPR = Monetary policy rate in Nigeria
TBR = Treasury bill rates in Nigeria
INF = Inflation rates in Nigeria
EXR = Exchange rates in Nigeria
α = Constant or Intercept
$\beta 1 - \beta 4$ = Coefficient or Parameters
t= Time

Results And Interpretation

Trend analysis of monetary policy variables and financial sector development

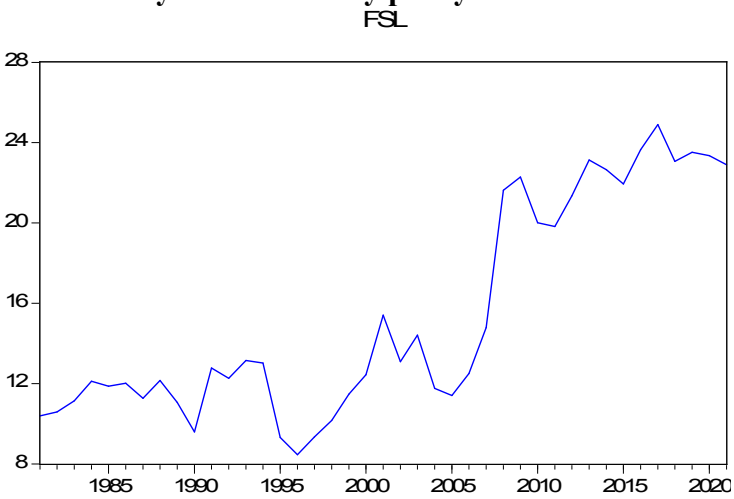


Chart 1: Trend of Financial Sector Liquidity

The trend of financial sector liquidity is presented in Chart 1, in 1985 the financial sector liquidity was 12% but in 1985 it declined to 8.5%. In 2018 it to the peak at 26%, this trend in financial sector liquidity implies growing of private sector credit demand in the Nigerian economy. Monetary policy variables include the money supply/credit and interest rates (the monetary policy rate, the deposit money rate, and the lending rate) (Fadare, 2011). The money supply/credit is the broad monetary aggregate that includes currency in circulation plus bank deposits held with the central bank and all other banks combined. Interest rates are the cost of borrowing money in the economy. Okpara (2010) reported that between 2002 and 2007; deposit growth averaged 40% annually while lending rates on average increased 80% annually (Soludo, 2008). The growth financial sector liquidity has been attributed to monetary policy (Adrian& Shin, 2009). The monetary policy rate, the deposit money rate, and the lending rate are key monetary policy instruments for determining inflation, economic growth, employment, investment and savings in the economy.

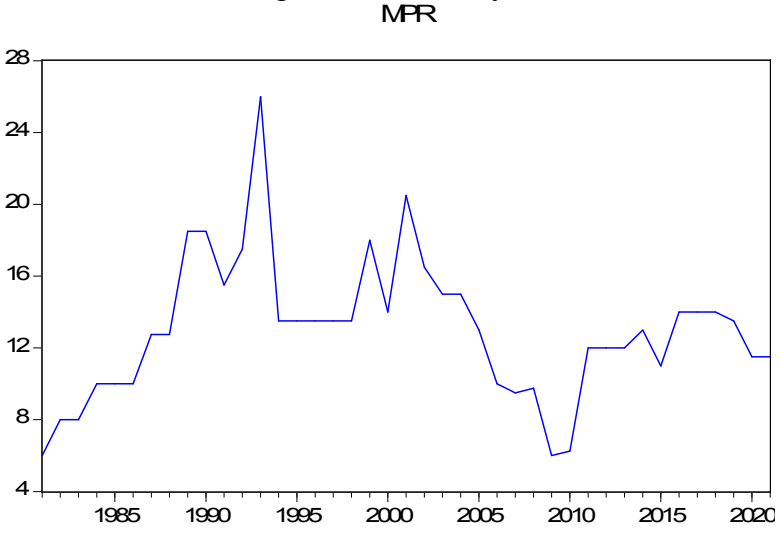


Chart 2: Trend of Monetary Policy Rates

The Monetary Policy Rates was 10% in 1985 and it was at its peak 10 years later at above 25% subsequently in 2010 it dipped to 5% and in 2020 it was at 12%, the fluctuations in the exchange rate implies that 50% of the Monetary Policy Rate is pegged to the exchange rate, this therefore implies that exchange rate management plays an important role in maintaining stability of the exchange rate (BCRA, 2018). The exchange rate of NGN to the USD rose by 200% in a period of about a decade (Yakub et al., 2019). This lead to the introduction of the CBN Naira Anchored Intervention Sales into the market to control the fluctuation in the value of the Naira (Tule, 2018). To stabilize the fluctuation in the monetary policy rate the CBN announced the RT200 FX Programmein June 2018, the policy is aimed at raising non-oil exports from $50 billion to $70 billion by the end of 2020 by creating confidence in the market for the local currency (Poopola, 2022; Ogwu, 2022).

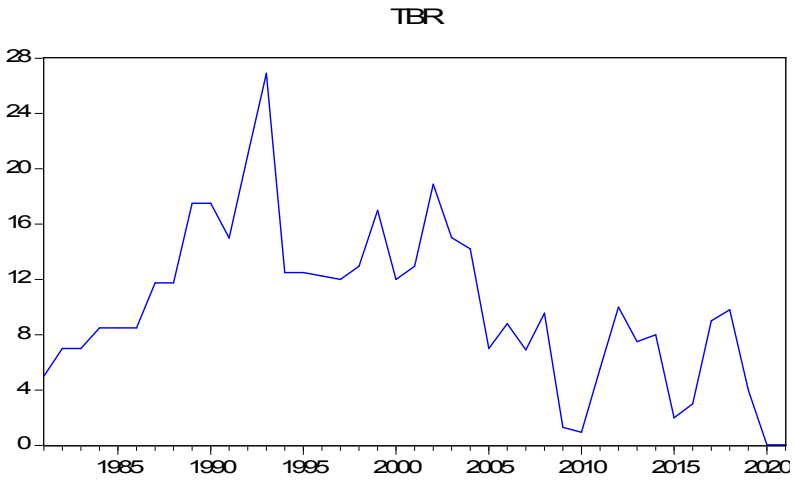


Chart 3: Trend of Treasury bill Rates

The rate of the treasury was 8% in 1985 and but was at its peak in 1995 at above 25%, this trend is attributed to several factors. One of the most important reasons is that the Treasury bond market became liquid and efficient during this period (Bao et al., 2018). With the increase of securities market activities, it became more feasible for the government to borrow from the market and issue short-term debt instruments to the general public (Akhanolu et al., 2018). In addition, the formation of new money market mutual funds improved access to long term debt instruments and contributed to the increased liquidity of the bond market. As a result, the cost of borrowing funds was reduced significantly and the government could obtain large amounts of short-term debt at a lower cost than in the past. The Treasury bill rates were at lowest in 2010 below 10% and this decline is explained by the fact it coincided with the economic recovery after the great recession (Bianchi, 2020). The recovery led to a strong increase in demand for government debt instruments as investors sought safe investments to protect their wealth from volatile financial markets. This led to a sharp decrease in interest rates as the government was able to borrow at lower rates to finance its spending programs (Rogoff, 2020). However, the low interest rates did not last for long as the expansionary monetary policy led to higher inflation and eventually higher interest rates (see Chart 4 & 5). The average rate of interest on Treasury bills fell steadily over the last two decades (Ezeaku et al., 2018). This decline in rates can be attributed to a number of factors such as the development of money market funds and increasing levels of public debt. The main factors that led to a decline in Treasury bill rates were twofold: Firstly, the gradual reduction in costs of issuing government securities which reduced the cost to the government and to taxpayers; and secondly, the rise of institutional investors and their

participation in government securities market.

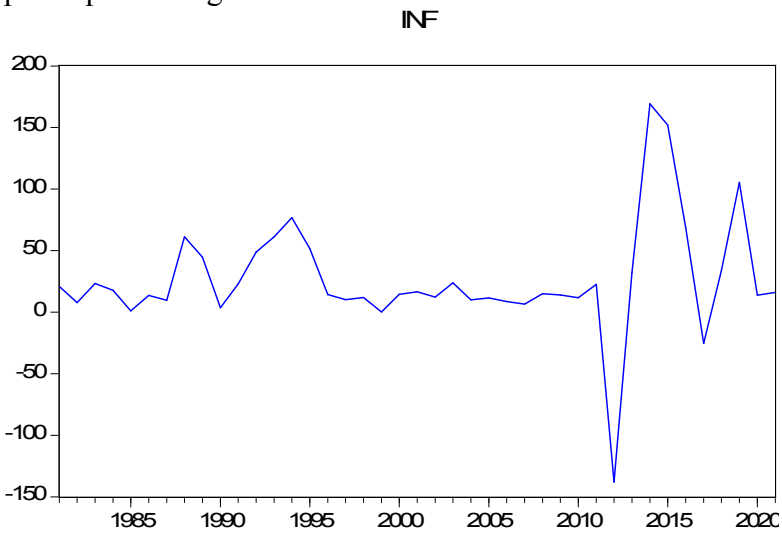


Chart 4 Trends of Inflation Rates

The inflation rate in Nigeria was at lowest in 2012 at less than -100% and it was at the peak at more than 150% increase in 2015. The reasons for this drastic increase in inflation rates are still not fully understood, but it is thought to be due to weak economic fundamentals and uncertain policy environment in Nigeria (Ajibola-Thomas & Fagboyo, 2021). This has made it difficult for government to implement economic policies that could control the inflation rate. Instead, they have relied on monetary policy to control inflation during this period (Gbadebo & Mohammed, 2015. However, the impact of this has not been felt in the market as the result has been low to moderate reduction in inflation levels. Chart 4 shows the trends of inflation rates in Nigeria from 1985 to 2020. The figure shows that the inflation rate decreased slightly from an average of 13.9% in 2005 to around 11% in 2009. It then increased again and reached its highest level of about 18% in 2013 before falling back to its lowest level between 2012 and 2014 at about 6%. The increase in the rate of inflation during this period was mainly driven by increases in food prices which accounted for about 56% of the total inflation during this period (Bawa et al., 2016). Food prices have increased significantly over the years, largely as a result of higher global demand for agricultural commodities.

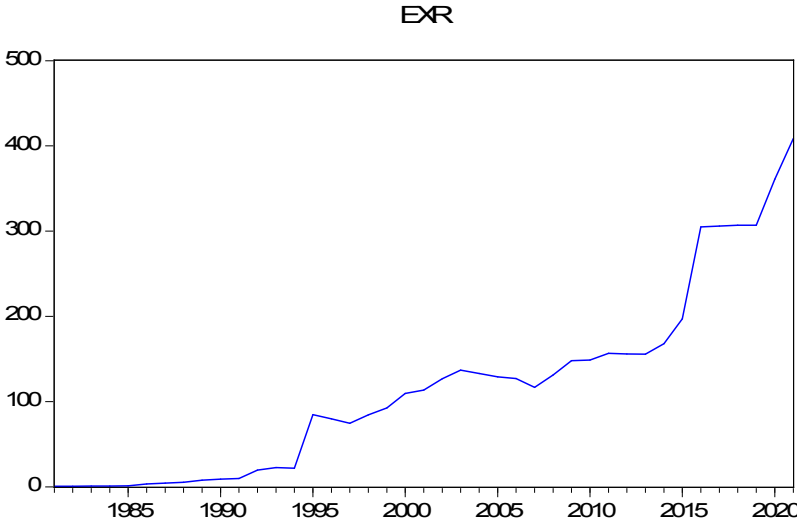


Chart 5 Trends of Exchange Rates

The Value of the Nigerian naira in relation to the United States dollar has continue to have positive trend as illustrated in Chart 5, the trend imply that the naira has continued to grow weak when compared with the dollar. This implies that the cost of imports will continue to increase and there will be further inflationary pressures in the economy. Moreover, the exchange rate has continued to be volatile in recent years which have made it difficult for the government to control the rate of inflation in the country (Amassoma, 2016). The government has therefore adopted several measures in an attempt to reduce the rate of inflation (Jibir & Aluthge, 2019). For example, it has tightened monetary policy by restricting credit growth in order to protect the local currency against excessive inflows of foreign funds. In addition, it has also raised interest rates in order to curb demand and prevent the economy from overheating. Despite these measures, the level of inflation has continued to rise. This reflects the fact that it is still difficult to address the underlying macroeconomic imbalances in the country.

Descriptive Result

Table 4.3 Relationship between monetary policy and financial sector development

	FSL	MPR	TBR	INF	EXR
Mean	15.41951	13.00000	10.03878	26.74024	116.3805
Median	12.78000	13.00000	9.550000	15.06000	113.4500
Maximum	24.90000	26.00000	26.90000	169.2900	408.6700
Minimum	8.460000	6.000000	0.030000	-138.0400	0.640000
Std. Dev.	5.353935	3.959167	5.852902	46.43742	109.4072
Skewness	0.544534	0.734305	0.444332	0.235793	0.956006
Kurtosis	1.625814	4.542775	3.360503	8.028451	3.247594
Jarque-Bera	5.252195	7.750652	1.571130	43.57567	6.350033
Probability	0.072360	0.020748	0.455862	0.000000	0.041793
Sum	632.2000	533.0000	411.5900	1096.350	4771.600
Sum Sq. Dev.	1146.585	627.0000	1370.258	86257.37	478797.1
Observations	41	41	41	41	41

Source: Extracted from E-view 9.0 Output

Key

FSL = Financial Sector Liquidity a measure of financial development (Ratio of M2 to GDP)
MPR = Monetary Policy Rates
TBR = Treasury bill Rates
INF = Inflation Rates
EXR = Exchange Rates

Extracting information from Table 4.3, we can observe descriptive statistics for various economic indicators. Financial Sector Liquidity has a mean of 15.4%, kurtosis of 1.62, and a standard deviation of 5.3. This indicates a distribution skewed towards the positive side, suggesting that the majority of values fall below the mean. While most values for Financial Sector Liquidity are below the mean of 15.4%, some outliers might contribute to a few higher values. These outliers could stem from various factors such as individual discrepancies or inaccuracies in data entry. Similarly, Monetary Policy Rates exhibit a positively skewed distribution. With a mean of 13%, kurtosis of 4.5, and standard deviation of 3.5, the majority of values lie below the mean, though some outliers lead to a few values above it. Again, these extreme values might arise due to outliers or other influences like individual differences or data

entry errors.

The Treasury bill rates also follow a positively skewed pattern. Averaging at 10%, with kurtosis of 3.36 and a standard deviation of 5.8, the distribution indicates that most values are situated below the mean of 10%. The noteworthy point is that the non-symmetrical distribution, coupled with a mode roughly equal to the mean, implies a bell-shaped curve. Shifting to Inflation Rates, the data presents a positively skewed distribution. With a mean of 26%, kurtosis of 8, and a standard deviation of 46.4, the majority of values are below the mean. The wide standard deviation accentuates the diversity within the distribution. Remarkably, although the skewness is pronounced, the kurtosis is not substantially distant from zero, implying a departure from normal distribution and suggesting increased variability. Lastly, examining Exchange Rates, we see a positively skewed distribution.

Averaging at 116%, with kurtosis of 1.62, and a standard deviation of 109.4, the distribution is characterized by values predominantly below the mean. The substantial standard deviation implies relatively reduced variability compared to the mean.

In summary, the data in Table 4.3 reveals descriptive statistics for several economic indicators. These statistics collectively indicate positively skewed distributions for each variable, where the majority of values tend to be situated below their respective means. Outliers and various influencing factors might contribute to the instances where values surpass the mean. The level of variability and departure from normal distribution varies across these indicators, underscoring their distinct characteristics.

Stationarity Test Result

Table 4.4 Unit Root Test for monetary policy and financial sector development variables

	D(FSL)	D(MPR)	D(TBR)	D(INF)	D(EXR)
ADF Statistics	-7.6220396	-9.717338	-8.278697	-5.536747	-4.868312
1%	-3.544063	-3.555023	-3.555023	-3.653730	-3.632900
5%	-2.910860	-2.915522	-2.915522	-2.957110	-2.948404
Probability	0.0000	0.0000	0.0000	0.0001	0.0004

Source: Extracted from E-view 9.0 Output

The investigation involved subjecting the financial sector development and economic growth variables to a stationarity test, utilizing the Augmented Dickey Fuller (ADF) test. The outcomes of this examination have been succinctly outlined and presented within table 4.4 of the preceding chapter, individually for each variable under scrutiny. Upon analyzing the results illustrated in the aforementioned table, it becomes evident that while all the financial sector development and economic growth variables exhibited non-stationarity at their initial levels, they demonstrated a tendency towards stationarity upon undergoing first-order differentiation. Consequently, the time series data for all the variables were determined to possess an integrated order of I(1). This conclusion is substantiated by the observation that the absolute values of the ADF test statistics surpassed the critical values established by MacKinnon at both the 1% and 5% significance levels. As a consequence, the respective null hypotheses, positing the absence of stationarity (unit roots) among the variables, were rejected. This implies that the variables did not exhibit unit roots and thus retained a sense of stationarity after the initial differentiation.

Co-integration Test

Table 4.5a Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	1.000000	1494.875	69.81889	1.0000
At most 1 *	0.683264	89.17281	47.85613	0.0000
At most 2 *	0.536680	44.33507	29.79707	0.0006
At most 3	0.261321	14.33092	15.49471	0.0743
At most 4	0.062527	2.518124	3.841466	0.1125

Trace test indicates 3 co integrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level

Table 4.5b Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	1.000000	1405.702	33.87687	1.0000
At most 1 *	0.683264	44.83774	27.58434	0.0001
At most 2 *	0.536680	30.00415	21.13162	0.0022
At most 3	0.261321	11.81279	14.26460	0.1179
At most 4	0.062527	2.518124	3.841466	0.1125

max- eigenvalue test indicates 3 co integrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
Source: Extracted from E-view 9.0 Output

The unit root test statistics have unveiled that all variables exhibit stationarity after both the first and second differences, as demonstrated in Table 4.4. The Augmented Dickey-Fuller unit root test has indicated that across various lags, all variables exhibited stationarity after being differenced, with the exception of the interest rate variable, which only demonstrated stationarity at lag one. This observation implies that in the short term, none of the variables adhere to a random walk pattern, necessitating an investigation into potential long-term relationships using the Johansen cointegration model (Paparoditis & Politis, 2018).

The outcomes of the Johansen cointegration tests presented in Table 4.5 A & B have highlighted the presence of a long-term relationship between the financial sector development variable and the monetary policy variable. However, such a relationship does not exist between these variables. This finding implies that in the long run, fiscal policy exerts a more influential effect than monetary policy on shaping the evolution of the financial services sector (Abata et al., 2012). Conversely, the results of the Johansen cointegration tests suggest a long-term relationship between the exchange rate variable and the other variables, with a maximum of two cointegrating equations. This suggests that while exchange rate movements may exert a stronger influence on the financial sector's development compared to other variables, their significance remains lower than the others in the long run.

Regression Analysis

Table 4.6 Relationship between monetary policy and financial sector development

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.93876	1.833360	7.057400	0.0000
MPR	-0.050098	0.299775	-0.167118	0.8682
TBR	-0.130589	0.237174	-0.550605	0.5853
INF	0.010638	0.011291	0.942105	0.3524
EXR	0.035732	0.007469	4.783846	0.0000
R-squared	0.698124	Mean dependent var		15.41951
Adjusted R-squared	0.664582	S.D. dependent var		5.353935
S.E. of regression	3.100745	Akaike info criterion		5.215011
Sum squared resid	346.1263	Schwarz criterion		5.423984
Log likelihood	-101.9077	Hannan-Quinn criter.		5.291107
F-statistic	20.81357	Durbin-Watson stat		1.850049
Prob(F-statistic)	0.000000			

Source: Extracted from E-view 9.0 Output

Key

FSL = Financial Sector Liquidity a measure of financial development (Ratio of M2 to GDP)
MPR = Monetary Policy Rates
TBR = Treasury bill Rates
INF = Inflation Rates
EXR = Exchange Rates

Table 4.6 presents the outcomes of the regression analysis illustrating the influence of monetary policy on the advancement of the financial sector. The findings from the multiple regression depicted in Table 4.6 suggest a suitable statistical fit for the model. The R2 value of 0.698 signifies that the independent variables elucidate approximately 69.8% of the total fluctuations observed in the dependent variable. Furthermore, the Durbin Watson value of 1.8 is indicative of the favorable overall stability of the estimated model parameters. A low Durbin Watson value (below 2) suggests minimal positive autocorrelation of the residuals within the model. Notably, the exchange rate exhibited statistical significance at the 1% level and displayed a positive influence on financial sector development. This positive correlation implies a robust association between the exchange market and the financial landscape. This association elucidates why alterations in the relative strength of the exchange rate can impact both financial development and overall growth within the nation, as elucidated by Mordi (2010).

The coefficient for monetary policy rate was negative though statistically insignificant; this implies that the monetary policy rate is negatively related to the level of financial sector development in Nigeria, which supports the widely accepted notion that a stronger policy rate tends to weaken financial development in developing countries such as Nigeria. However, it is important to note that while the policy rate negatively affects financial development, it is not the root cause of the problems in the Nigerian banking sector as observed by the panel analysis of capital market segmentation (Bekaert et al., 2014). The coefficient for Treasury bill rate was negative though statistically insignificant; this implies that the Treasury bill rate is negatively related to the level of financial sector development in Nigeria, with high rates of treasury bills which the security and economic trends of Nigeria does not support it is pertinent to note that

TBR has affected the financial development of Nigeria negatively. The coefficient for inflation rate was positive though statistically insignificant; this implies that the inflation rate is positively related to the level of financial sector development in Nigeria. This is consistent with the findings by Akpansung & Babalola (2011) who argued that the rise in the inflation rate stimulates consumer demand and the demand for credit and therefore contributes to financial development in Nigeria.

Causality Test

Table 4.7 Effect of monetary policy on financial sector development

Null Hypothesis:	Obs	F-Statistic	Prob.
MPR does not Granger Cause FSL	40	0.64914	0.4256
FSL does not Granger Cause MPR		0.96812	0.3315
TBR does not Granger Cause FSL	40	0.66965	0.4184
FSL does not Granger Cause TBR		5.41488	0.0255
INF does not Granger Cause FSL	40	1.24514	0.2717
FSL does not Granger Cause INF		1.11067	0.2988
EXR does not Granger Cause FSL	40	1.36788	0.2497
FSL does not Granger Cause EXR		2.02341	0.1633
TBR does not Granger Cause MPR	40	1.00953	0.3215
MPR does not Granger Cause TBR		0.14450	0.7060
INF does not Granger Cause MPR	40	0.10609	0.7465
MPR does not Granger Cause INF		0.46488	0.4996
EXR does not Granger Cause MPR	40	0.63189	0.4317
MPR does not Granger Cause EXR		0.03173	0.8596
INF does not Granger Cause TBR	40	0.38363	0.5395
TBR does not Granger Cause INF		1.42457	0.2402
EXR does not Granger Cause TBR	40	4.70787	0.0365
TBR does not Granger Cause EXR		1.31499	0.2589
EXR does not Granger Cause INF	40	0.00031	0.9861
INF does not Granger Cause EXR		17.0147	0.0002

Table 4.7 shows the granger causality between monetary policies and financial sector development. One-way causality exists between financial sector development and the Treasury bill rate, indicating that decreases in Treasury bill rates have resulted in increases in the financial sector development index, while an increase in treasury bill rates has had no noticeable effect on the financial sector development index.

Conclusion

Monetary policy rates, deposit money rates, and lending rates are important monetary policy instruments for determining inflation, economic growth, employment, investment, and savings in the economy. Exchange rate management is critical to maintaining exchange rate stability (or exchange rate predictability), which is important for economic growth and stability. A strong exchange rate is an important prerequisite for trade and investment to take place across borders. During this time, Nigeria relied on monetary policy to keep inflation under control. This was

achieved by hiking interest rates whenever necessary. This strategy worked until the global recession of 2008-2009 when oil prices fell sharply. The naira has remained weak in comparison to the dollar (USD) since the introduction of floating exchange rate system in 1973. Over the years, the naira/dollar exchange rate has been volatile and exhibits high fluctuations across different periods. Fiscal policy has a greater long-term influence on the development of the financial services sector than monetary policy due to its direct impact on the tax system and the allocation and use of government funds. There is a strong link between the exchange market and the financial environment, which explains why changes in the relative strength of the exchange rate can have an impact on the country's financial development and growth.

In summary, it's widely recognized that a robust financial system hinges on the stable operation of the foreign exchange market. Consequently, maintaining exchange rate stability stands as the primary driver of economic growth. It's imperative for monetary authorities and national governments to prioritize exchange rates by adopting policies that foster steady exchange rate conditions. The implications of this research underscore the need to curtail exchange rate fluctuations, especially when they exert a significant influence on economic growth. Moreover, policymakers should exercise control over inflation and interest rates as effective measures to counteract the adverse impact of volatility on growth. This is crucial because the extent to which economic growth thrives is closely intertwined with international trade and investments.

The study's findings lead to several key conclusions:

i. Implement measures like prudent policies and reinforcing the nation's financial system to minimize the extent of exchange rate fluctuations.
ii. Exercise oversight over inflation and interest rates to mitigate the detrimental effects of volatility on economic growth.
iii. Improve regulatory oversight and supervision of the financial intermediaries in order to mitigate the risk of insolvency and increase financial stability and resilience of the economy.
iv. Strengthen the financial infrastructure of the country so as to facilitate the development of financial markets and enhance the efficiency of the financial system
v. Strengthen the dynamic monitoring of the relationship between bank development and economic growth.
vi. Improve the macro-prudential policy framework on financial risk through the conduct of sound stress tests and scenario analysis in order to identify and monitor systemic risks in a timely manner.

References

Abata, M. A., Kehinde, J. S., & Bolarinwa, S. A. (2012). Fiscal/monetary policy and economic growth in Nigeria: A theoretical exploration. *International Journal of Academic Research in Economics and Management Sciences*, *1*(5), 75.

Adrian, T., & Shin, H. S. (2009).Money, liquidity, and monetary policy. *American Economic Review*, *99*(2), 600-605.

Ajibola-Thomas, A. O., & Fagboyo, R. J. (2021). Financial Sector Operation in Nigeria During Uncertain Times. *SAU Journal of Management and Social Sciences*, *6*(3), 154-161.

Akhanolu, I. A., Babajide, A. A., Akinjare, V., Oladeji, T., &Osuma, G. (2018). The effect of

public debt on economic growth in Nigeria: An empirical investigation. *International Business Management*, *12*(6), 436-441.

Akpansung, A. O., &Babalola, S. J. (2011). Banking sector credit and economic growth in Nigeria: An empirical investigation. *CBN Journal of Applied Statistics*, *2*(2), 51-62.

Amassoma, D. (2016). The nexus between exchange rate variation and economic growth in Nigeria. *Journal of Entrepreneurship, Business and Economics*, *5*(1), 1-40.

Bao, J., O'Hara, M., & Zhou, X. A. (2018). The Volcker Rule and corporate bond market making in times of stress. *Journal of Financial Economics*, *130*(1), 95-113.

Bawa, S., Abdullahi, I. S., & Ibrahim, A. (2016).Analysis of inflation dynamics in Nigeria (1981-2015). *CBN Journal of Applied Statistics*, *7*(1), 255-276.

BCRA. (2018), "The BCRA Implements a New Monetary Policy Scheme",*The BCRA Implements a New Monetary Policy Scheme*, September, available at: https://www.bcra.gob.ar/Noticias/BCRA-implementa-nuevo-politica-monetaria-i.asp#:~:text=%20The%20monetary%20policy%20rate%20will%20be%20the%20average%20rate (accessed 19 September 2022).

Bekaert, G., Harvey, C. R., Lundblad, C., & Siegel, S. (2007). Global growth opportunities and market integration. *The Journal of Finance*, *62*(3), 1081-1137.

Bianchi, F. (2020). The great depression and the great recession: A view from financial markets. *Journal of Monetary Economics*, *114*, 240-261.

Ezeaku, H. C., Ibe, I. G., Ugwuanyi, U. B., Modebe, N. J., &Agbaeze, E. K. (2018). Monetary policy transmission and industrial sector growth: Empirical evidence from Nigeria. *Sage Open*, *8*(2), 2158244018769369.

Fadare, S. O. (2011). Banking sector liquidity and financial crisis in Nigeria. *International Journal of economics and finance*, *3*(5), 3-11.

Gbadebo, A. D., & Mohammed, N. (2015). Monetary policy and inflation control in Nigeria. *Journal of Economics and Sustainable Development*, *6*(8), 108-115.

Iwedi, M. (2019). Monetary policy transmission channels and economic growth in Nigeria. *Asian Journal of Economics and Empirical Research*. 6(2), 93-100. https://doi.org/10.20448/journal.501.2019.62.93.100

Jibir, A., &Aluthge, C. (2019).Modelling the determinants of government expenditure in Nigeria. *Cogent Economics & Finance*.

Ma,Y. & Lin, X(2016). Financial development and the effectiveness of monetary policy. *Journal of Banking & Finance*. 68(2016), 1-11.

Mordi, C. N. (2010). The link between the financial (banking) sector and the real sector of the Nigerian economy. *Economic and Financial Review*, *48*(4), 11.

Ogwu, S.M. (2022), "CBN ends forex sales to banks | Dailytrust", *Daily Trust*, 11 February, available at: https://dailytrust.com/cbn-ends-forex-sales-to-banks#:~:text=The%20CBN%20governor%20said%20the%20new%20policy%20was%20directed%20at (accessed 19 September 2022).

Paparoditis, E., & Politis, D. N. (2018). The asymptotic size and power of the augmented Dickey–Fuller test for a unit root. *Econometric Reviews*, *37*(9), 955-973.

Poopola, N. (2022), "CBN defends naira with $7.6bn in five months", *Punch Newspapers*, 10 September, available at: https://punchng.com/cbn-defends-naira-with-7-6bn-in-five-months/#:~:text=The%20CBN%20maintained%20the%20official%20rate%20of%20the%20naira%20to (accessed 19 September 2022).

Rogoff, K. (2020). Falling real interest rates, rising debt: A free lunch?. *Journal of Policy Modeling*, *42*(4), 778-790.

Soludo, C. C. (2008). Issues on the level of interest rates in Nigeria. *Central Bank of Nigeria, Abuja*.

Tule, M. K. (2018). Foreign exchange management: Nigeria's experience with the unholy trinity. *Bullion*, *42*(2), 1.

Yakub, M. U., Sani, Z., Obiezue, T. O., & Aliyu, V. O. (2019). Empirical investigation on exchange rate volatility and trade flows in Nigeria. *Economic and Financial Review*, *57*(1), 23-46.