Macroeconomic Determinants of Banking Sectors Development in Nigeria

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Abstract

This study investigated the macroeconomic determinants of banking sector development in Nigeria. The objective of the study is to investigate the impact of economic growth, inflation rate, trade openness and monetary policy rate on banking sector development. The study covered a time period of 1990-2021. The Ordinary Least Squares (OLS) analysis technique was adopted for the study's analysis based on the fact that the variables were stationery at levels. Time series data on banking sector development, economic growth, trade openness, inflation rate and monetary policy rate from 1990 - 2021 were extracted from the CBN Statistical Bulletin and analyzed using descriptive statistics, unit root test and OLS regression techniques and the data were estimated. The Augmented Dickey Fuller (ADF) and Dickey Fuller GLS Unit root tests results showed that economic growth, inflation rate, trade openness and monetary policy rate on banking sector development were stationery at levels based on the fact that ADF statistics > ADF at 5% and the OLS findings revealed that economic growth has no significant impact on banking sector development at p-value >0.05, inflation rate has no significant impact on banking sector development at p-value >0.05, trade openness has no significant impact on banking sector development at p-value >0.05 while that monetary policy rate has a significant impact on banking sector development at p-value <0.05. The study recommended that policymakers should strive to pursue growth and development of the banking sector in Nigeria by efficient usage of the monetary policy rate.

Keywords: Banking sector development, Economic growth, Inflation rate, Interest group theory, Monetary policy rate and trade openness.

Introduction

The concept of the development of the banking sector is a multi-dimensional concept and is not easy to find a single definition of this process as it is an interrelated process that includes improvements in the quantity and quality of financial services. Financial intermediary development, therefore, is the resultant improvement and enhancement in the quality and efficiency of the financial intermediaries. The functions of this part of the financial sector range from capital allocation, mobilisation of savings to monitoring and evaluation of borrowers (Klein & Olivei, 2008). A strong financial sector is also a stable source of funding as compared to capital inflows. These functions enable the financial intermediary sector to contribute to economic development of a country. In Nigeria, the Central Bank of Nigeria (CBN) has implemented various reforms aim at guiding the financial sector into a more competitive, resilient, effective and inclusive sector (CBN, 2020) of all financial intermediaries, deposit money banks play a principal role as far as channelling and mobilising funds is concerned, especially to the private sector, for investment purposes or for other economic activities. The macroeconomic variables that might influence the banking sector development include economic growth, trade openness, inflation rate and monetary policy rate. This implies that these the actual factors explaining the behaviour of the development of the banking sector in Nigeria. It is assumed that these determinants differ from one country to another according to

conditions and characteristics of each country such as the degree of the development of banking services the stage of economic development, the degree of financial liberalization, and the degree of economic, political and legislative stability.

Prior empirical studies that have investigated the macroeconomic determinants of banking sector development focused on developed and emerging Asian countries (Yu & Gan, 2010; Guo & Stepanyan, 2011; Donia, 2012; Kakhkharov & Rohde, 2019). In sharp contrast to the extensive investigation in previous literature of macroeconomic determinants of banking sector development in developed and emerging Asian countries, there are few empirical studies in African countries, specifically in Nigeria. Furthermore, most of the earlier studies on the determinants of banking sector development (Guo & Stepanyan, 2011; Donia, 2012; Tsaurai, 2018; Aluko & Ajayi, 2018 among others) employ either cross-country data, results obtained from such cross - country studies must be treated with great caution as they are subject to extreme limitations. Given limitations of few or little empirical studies in Nigeria on the determinants of banking sector development, hence, this study address the gap in Nigeria context by investigating the macroeconomic determinants of banking sector development.

Literature Review

Banking Sector Development

Benyah (2010) defined financial intermediary development as increasing efficiency of allocating financial resources and capital projects through encouraging competition and increasing the potential of financial system. However, the size, structure and efficiency of a financial system determine development. Financial intermediary development is the resultant improvement and enhancement in the quality and efficiency of the financial intermediaries. Banking sector development can be measured with various indicators. These indicators measure different aspects of banking sector development in terms of size, depth, access, to mention just a few. Money and quasi-money (M2) and Liquid liabilities (M3) are indicators of banking sector development that measure the size and depth of the banking sector. M3 is made up of currency outside banks; demand deposits other than those of the central government; the time, savings, and foreign currency deposits of resident sectors other than the central government; bank and traveller's cheques; and other securities such as certificates of deposit and commercial paper, while M2 comprises of the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government, divided by GDP.

Macroeconomic Determinants

A macroeconomic determinant is an influential fiscal, natural, or geopolitical event that broadly affects a regional or national economy. The macro environment looks at forces surrounding a firm that have the potential to affect the way it operates (Davis & Powell, 2012). In this study, the macroeconomic determinants considered include economic growth, trade openness, inflation rate and monetary policy

Economic Growth and Banking Sector Development

Economic growth is seen as an increase in the total output of an economy, usually an increase in real GDP per capita. Vuranok (2009) defined economic growth as the increase (or growth) of a specific measure such as real national income, gross domestic product, per capita income or other measures of aggregate income. The gross domestic product per capital of any economy is used as a measure or indicator of the average standard of living of the citizens of a country.

Majeed and Iftikhar (2020) examined the impact of banking sector credit on sectoral and sub-sectoral level of economic growth of Pakistan by utilizing data from 1982 to 2017. The empirical aggregated analysis indicates that the magnitude of credit to private sector has positive sign, but no meaningful influence on aggregate level of economic growth. Touny (2014) examined the macroeconomic determinants of banking sector development in Egypt and Saudi Arabia. The period of study was from 1977 to 2012 for Egypt and from 1984 to 2012 for Saudi Arabia. The study utilized the cointegration analysis to find out the long-run equilibrium relationship among the variables of the model while the ECM was used to determine the short run relationship. The results shows that economic growth has a long-run negative impact on banking sector development, Imran and Nishat (2013) studied the determinants of bank credit growth in Pakistan for the period 1971 to 2008 using the ARDL econometric approach. The growth in bank credit to the private sector is used as dependent variable whereas growth of liabilities from abroad, growth in domestic deposits, money market rate, M2 as percentage of GDP, real economic growth, inflation and the exchange rate are the explanatory variables. The result reveals that foreign liabilities, domestic deposits, economic growth, exchange rate, and the monetary conditions have significant impact on banks credit to the private sector in the long run. *The hypothesis proposed is: Economic growth has no significant effect on banking sector development in Nigeria.*

Trade Openness and Banking Sector Development

Openness is the extent to which an economy allows trade and capital across its borders (Aluko & Ajayi, 2018). Trade openness refers to the degree to which countries permit or have trade with other countries. Openness can also be defined as the degree of dependence of an economy on international trade and financial flows. It measures the international competitiveness of a country in the global market. Thus, we may talk of trade openness and financial openness. Trade openness is often measured by the ratio of export plus import to GDP or alternatively, the ratio of trade to GDP. It is now generally accepted that increase openness with respect to both trade and capital flows will be beneficial to a country. Increase openness facilities greater integration in the global markets. Tsaurai (2018) explored the determinants of banking sector development in Southern African Development Community (SADC) countries using the dynamic Generalised Methods of Moments (GMM) estimation technique with panel balanced data ranging from 1994 to 2014. The findings of this study reveal that the lag of banking sector development and GDP positively and significantly influenced banking sector development in line with theoretical predictions. Trade openness negatively and significantly impacted on banking sector development whilst inflation had a marginal positive impact on banking sector development in SADC countries. Gezae (2014) investigated the macroeconomic variables that affect the development of the banking sector in East African countries. OLS multiple linear regression was employed in the analysis. The result from the study reveals that Trade Openness, Real Interest rate, population growth, and Government consumption expenditure significantly impact the development of the banking sector. Kim, Lin and Suen (2010) investigated the influence of trade openness on financial development developed and developing countries using pool regression analysis. The result from the study shows that trade openness exert a positive impact of on banking sector development in lower-income countries however they find a negative long-run and insignificant short-run impacts in high-income countries.

Hypothesis

The proposed hypothesis is:

Ho1: Trade openness has no significant effect on banking sector development in Nigeria.

Ho2: Inflation rate has no significant effect on banking sector development in Nigeria.

Ho3: Monetary policy rate has no significant effect on banking sector development in Nigeria.

Inflation Rate and Banking Sector Development

World Bank (2011) defined inflation as a sustained increase in the general price level of prices for goods and services in an economy. However, besides an imbalance in the demand and supply of money, it could also occur due to changes in production and distribution cost or increase in taxes on products. It is the rate at which the general price level of goods and services changes in an economy. It was measured by annual growth of the GDP deflator (Aluko & Ajayi, 2018). Aluko and Ajayi, (2018) examined the determinants of banking sector development in sub-Saharan African countries using a panel of 25 countries from 1997 to 2014. The system Generalized Method of Moments (GMM) dynamic panel model estimator. Using a composite index of banking sector development, the estimation results show that population density and simultaneous openness to trade and capital promote banking sector development while financial liberalization hinders banking sector development. Also, the result reveals that inflation, and religion promotes the efficiency of the banking sector while latitude, trade openness, income level, and ethnic diversity reduce banking sector efficiency. Takyi and Obeng (2013) studied the determinants of financial development in Ghana using the Autoregressive Distributed Lag (ARDL) approach. Using quarterly data from 1988 to 2010, the study found a unique cointegrating relationship between financial development trade openness, inflation, per capita income, reserve requirement and government borrowing. The regression results show that trade openness and per capita income are important determinants of financial development in Ghana. Further, inflation, interest rate, and reserve requirement exerted negative and statistically significant effects on financial development both in the short-run and long-run suggesting that these variables adversely influence financial development in Ghana.

Monetary Policy Rate and Banking Sector Development

The monetary policy rate is the central bank's minimum lending rate at which it rediscounts first-class bills of exchange and government securities held by commercial banks (Kelechi, 2016). When the central bank detects the emergence of inflationary pressures in the economy, it raises the bank rate. Borrowing from central banks becomes more expensive, and commercial banks borrow less from them. In exchange, commercial banks hike their lending rates to businesses and individuals, who borrow less from commercial banks (Kelechi, 2016). Credit is contracting, and prices are being restrained from growing higher. In contrast, as prices fall, the central bank lowers the bank rate. Borrowing from the central bank is inexpensive for commercial banks. They, too, decrease their loan rates. Borrowing is recommended for business owners. Investment is encouraged, as are output, employment, income, and demand (Kelechi, 2016). These activities are expected to have an impact on stock exchange activities. Mushtaq, Arshed and Hassan (2019) examine the determinants of banking sector development in Pakistan for the period 1980 – 2017. The ARDL estimator was employed to study the long run effect of capital formation, interest rate, trade deficit, general price level and remittances on banking sector development (proxy by credit to private sector). The results show that increase in the investment, imports and general price level leads to increase in the provision of domestic credit which leads to banking sector development.

Theoretical Review

The interest group theory was used to explain the macroeconomic determinants of banking sector development. Rajan and Zingalas (2003) postulated the interest group theory of financial sector development, otherwise known as the simultaneous openness hypothesis which identifies openness–trade and financial openness–as a determinant of banking sector development. The theory posits that openness would lead to banking sector development when the economy does not choose trade openness or financial openness in isolation of each other. Financial sector development occurs when an economy is simultaneously open to both trade and capital. Rajan and Zingales (2003) argued that financial sector development is as a result interest groups' stance on financial sector development. Interest groups, particularly incumbent firms often stand against financial sector development because potential competitors would gain entry into the domestic market due to greater financial access. Therefore, incumbent firms do not support financial sector development because it encourages competition. Incumbent firms in a closed economy benefit from low levels of financial sector development caused by financial repressive policies because access to finance by potential competitors would be limited (Hauner, Prati, & Bircan, 2013).

Methodology

The longitudinal research design was used in this study. The population comprised of macroeconomic factors on banking sector development in Nigeria where census sampling technique to collect secondary data covering the period of 1990 to 2021 for the variable of interest such as economic growth, trade openness, inflation rate and the monetary policy rate as the explanatory variables and bank liquid liabilities – M2/GDP as the dependent variables. Descriptive statistics, correlation analysis and multivariate ordinary least square (OLS) method were adopted in the analysis of data. Various tests were conducted to evaluate the results, which include t-test, R-Squared and f-test. Time series analysis was carried out to test the data for stationarity or non-stationarity problems using Augmented Dickey-Fuller (ADF), which is an extension of Dickey-Fuller test. The unit root test was carried out to determine whether the orders of integration of the variables of interest were compatible with the selected econometric methodological framework.

Model Specification

In order to examine the impact of macroeconomic factors on banking sector development in Nigeria, the model will follow that of Shifotoka (2014) with slight modification in terms of the macroeconomic factors selected for this study. Shifotoka (2014) utilized gross domestic product, nominal interest rates, inflation rate and the ratio of market capitalization to nominal gross domestic product to capture the macroeconomic determinants of banking sector development in Namibia. This study utilized four macroeconomic determinants (economic growth, trade openness, inflation rate and monetary policy rate) and dependent variables (aggregate liquid liabilities ratio of bank - M2/GDP) to suit our purpose.

The functional form of the model is stated below;

$$LLR = f(RGDP, OPEN, INFL, MPR) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3.2)$$

Equation (3.2) can be express in its econometric form as follows:

$$LLR = \beta 0 + \beta 1RGDP + \beta 2OPEN + \beta 3INFL + \beta 4MPR + \mu \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3.3)$$

Where;

LLR = Aggregate liquid liabilities of bank – M2/GDP (Banking sector development)

RGDP = Real Goss Domestic Product (Economic growth)

OPEN = Trade Openness

INFL = Inflation rate

MPR = Monetary Policy Rate

$\beta 0$ denotes the constant term, $\beta 1$, $\beta 2$, $\beta 3$, and $\beta 4$ are slope coefficients representing

Table 1: Measurement of the Variables

Variable	Type of Variable	Measurement
Banking sector development	Dependent Variable	The liquid liabilities ratio is calculated as M2-broad money supply (currency plus demand and interest bearing liabilities of bank and non-bank financial intermediaries) divided by GDP.
Economic Growth – Real GDP (RGDP)	Independent Variable	Measured as the C+I+G(X-M) in Naira
Inflation Rate (INFL)	Independent Variable	measured as the annual change in the CPI: (CPIt –CPIt-1) / CPIt-1
Trade Openness (OPEN)	Independent Variable	Trade openness is measure as: (import+ export/GDP).
Monetary Policy Rate (MPR)	Independent Variable	Discount rate in percentage

*Source: Researcher's Compilation, (2024)***.**

Results of the Findings

Descriptive statistics are used in this study to assess the individual characteristics of the variables and shown in the Table 2.

Table 2: Descriptive Statistics

	LLR	RGDP	OPEN	INFL	MPR
Mean	10.22969	47497.83	36.48653	18.06083	13.78125
Median	9.395000	26474.43	36.54016	12.71577	13.50000
Maximum	19.63000	173527.7	53.27796	72.83550	26.00000
Minimum	4.960000	489.7665	20.72252	5.388008	6.000000
Std. Dev.	3.506258	51940.53	8.834838	16.36505	3.797681
Skewness	0.862420	0.954321	0.041542	2.170105	0.749166
Kurtosis	3.505955	2.695299	2.302825	6.633406	5.311276
Jarque-Bera	4.308087	4.981005	0.657274	42.71876	10.11599
Probability	0.116014	0.082868	0.719904	0.000000	0.006358
Sum	327.3500	1519931.	1167.569	577.9467	441.0000
Sum Sq. Dev.	381.1091	8.36E+10	2419.685	8302.263	447.0938
Observations	32	32	32	32	32

Source: Author's computations, (2024) using Eviews 9.0.

The above results show that there are 32 observations in total, for the period under review. Table 2 revealed that the ratio between mean and median values is not too high, showing high level of consistency among variables. All the variables considered are skewed to the right with long tail as indicated by their positive values. Banking sector development (LLR), inflation rate (INFL) and monetary policy rate (MPR) has peaked properties with the kurtosis value that is greater than three (3) a while RGDP and OPEN has does not have peaked as indicated by the

kurtosis value that is less than three (3). The Jarque-Berra (J-B) statistic value for INF and MPR is significant at 1% level in the light of their corresponding probability values an indication that the two variables are not normally distributed. However, the J-B values LLR, RGDP and OPEN fail the significance test at the 5 percent level as shown by the probability value, an indication that these variables are normally distributed.

Unit Root Test

To examine the long-run relationship among the variable, the Augmented Dickey Fuller (ADF) and Dickey Fuller GLS (ERS) unit root tests were used to test for stationary in the series and the result is presented in Table 3 below;

Table 3: Augmented Dickey-Fuller Unit Root Test

LEVEL		ADF Statistics	ADF (95%)	Remark
	LLR	-2.14	-1.95	Stationery
	RGDP	9.72	-2.96	Stationery
	INTL	-2.06	-1.95	Stationery
	OPEN	-2.74	-1.95	Stationery
	MPR	-3.16	-2.96	Stationery

Source: Author's Computation from E-Views 9.0

It was observed from Table 3 above that all the variables were stationary at levels. The ordinary least square regression analysis estimate result is presented in Table 4 below:

Table 4:OLS Estimation Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.87521	4.058298	3.911791	0.0006
RGDP	2.71E-05	1.44E-05	1.878245	0.0721
INFL	-0.028225	0.037839	-0.745936	0.4627
OPEN	0.000490	0.088902	0.005513	0.9956
MPR	-0.463552	0.100632	-4.606383	0.0001
AR(4)	-0.368265	0.309289	-1.190686	0.2450
SIGMASQ	5.317557	1.590540	3.343240	0.0026
R-squared	0.553509	Mean dependent var		10.22969
Adjusted R-squared	0.446351	S.D. dependent var		3.506258
S.E. of regression	2.608922	Akaike info criterion		4.964609
Sum squared resid	170.1618	Schwarz criterion		5.285239
Log likelihood	-72.43374	Hannan-Quinn criter.		5.070889
F-statistic	5.165359	Durbin-Watson stat		1.516672
Prob(F-statistic)	0.001416			

Source: *Author's Computation, (2024) using Eviews 9.0.*

Using the estimated result of the OLS in Table 4, it was observed that the coefficient of determination (R^2) is 0.553509 with adjusted R^2 value of 0.446351, which shows that the explanatory power of the variables is strong. This implies that about 55% of the variations in banking sector development were explained by the variations in real gross domestic products, inflation rate, trade openness and monetary policy rate. The F-test was applied to check the overall significance of the model. The F-statistic is instrumental in verifying the overall significance of an estimated model. Table 4.3 shows f-statistics value of 5.61 with its probability value of 0.001416 which is highly significant. The Durbin Watson D-Statistic obtained was 1.516672 which can be approximated to 2. This means that there is no auto correlation in the model. Hence, the model can be used for realistic forecasts. A close

examination of the individual coefficient in the regression result in Table 4 reveals that three of the explanatory variables, economic growth (RGDP), trade openness (OPEN) and inflation rate (INFL) failed the test of significance at p-value > 0.05. This implies that they do not have any impact on banking sector development in Nigeria for the period under study. In term of the sign, economic growth and trade openness were positively signed while inflation rate was negatively signed. The result further shows that monetary policy rate (MPR) exerts a negative and significant effect on banking sector development. This means that if all the explanatory variables are zero, there is a significant increase in banking sector development by 15.87521 units as shown by the intercept (constant).

Discussion of Results

The study finds that economic growth has no significant positive impact on banking sector development. This result is in agreement with Majeed and Iftikhar (2020) who reported a non-significant impact of economic growth on banking sector development. However, the result from this study is not in consonance with that of Gezae (2014) and Tsaurai (2018) who concluded a significant positive relationship between economic growth and banking sector development in their respective studies. Trade openness has a no significant positive impact on banking sector development in Nigeria. This result is not in agreement with the studies of Tsaurai (2018) and Gezae (2014) that a significant positive relationship between trade openness and banking sector development in their respective studies. It however disagreed with that of Polat (2018) who concluded that trade openness has no significant effect on banking sector development. Inflation rate has no significant negative impact on banking sector development in Nigeria. The result of this study agree with Imran and Nishat (2013) that there is no significant relationship between inflation rate and banking sector development, but contradict those of Polat (2018) that a significant negative relationship between inflation rate and banking sector development; Monetary policy rate exerts a significant negative effect on banking sector development in Nigeria. The findings is in tandem with the findings of Imran and Aluko and Ajayi, (2018) that a significant relationship between monetary policy rate and banking sector development in Nigeria.

Conclusion

The study examined the determinants of banking sector development in Nigeria. The study was embarked upon given the critical role played by the banking sector in the growth and development process of developing countries, like Nigeria were the banking sector is the key pillar of financial system. Time series data on banking sector development, economic growth, inflation rate, foreign remittances and exchanger rate volatility from 1990 - 2021 were extracted from the CBN statistical bulletin and analyzed using descriptive statistics, correlation analysis and OLS regression techniques. The unit root results revealed that all the variables were stationery at level leading credence to the usage of ordinary least square regression technique. The findings revealed that monetary policy rate is a critical factor that influences the development of banking sector in Nigeria while economic growth, trade openness and inflation rate were found not to play a critical role in the development of banking sector in Nigeria.

Recommendations

(i) Regulatory authorities should ensure that there is effective usage of the monetary policy to stabilize inflation rate at low levels in order to stimulate the development of the banking sector in Nigeria.

(ii) Policymakers should strive to pursue growth and development of the banking sector in Nigeria by efficient usage of the monetary policy rate.

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