

An Empirical Analysis of Bank Stability and Nigeria's Economic Growth

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Abstract

This study examines the impact of deposit money bank (DMB) stability on economic growth in Nigeria over the period 2004–2023. Using annual time-series data and Ordinary Least Squares (OLS) regression analysis, the study evaluates how bank profitability, asset quality, and liquidity ratio influence Gross Domestic Product (GDP) growth rate. The results indicate that bank profitability and liquidity have a statistically significant positive impact on economic growth at the 5% significance levels, respectively. However, asset quality, proxied by non-performing loans, exhibits a negative but statistically insignificant relationship with economic growth. The overall model explains approximately 62% of the variation in GDP growth rate. These findings underscore the importance of maintaining adequate liquidity buffers and profitability to support economic growth, while highlighting the need for improved credit risk management to mitigate non-performing loans. The study contributes to the limited empirical literature on bank stability and economic growth in Nigeria, particularly in the post-consolidation era.

Keywords: deposit money banks, bank stability, economic growth, profitability, asset quality, liquidity, Nigeria.

INTRODUCTION

Analysis of the relationship between bank stability and economic growth has attracted considerable scholarly attention in recent decades, emphasizing the crucial role financial institutions play in facilitating credit flow to various sectors of the economy. A stable banking sector enables financial institutions to effectively support businesses, foster investments, and contribute to increased productivity and job creation. Conversely, periods of bank instability can lead to reduced lending, lower economic output, and hindered growth (Blake et al., 2017).

Economic growth and bank stability are two critical components that significantly influence the overall health and development of a country's financial system and its real economy. Economic growth represents the increase in a nation's output, income, and overall standard of living over time and is widely measured using Gross Domestic Product (GDP). According to Callen (2023), an increasing GDP generally indicates that both businesses and workers are performing better than during periods of decline. Bank stability refers to the resilience of financial institutions against financial shocks and their ability to maintain efficient operations and lending activities. According to the World Bank (2022), a stable financial system reduces the likelihood of financial crises and their associated economic costs.

Klaas and Vagizova (2014) explained that bank stability ensures that financial institutions remain profitable and possess sufficient liquidity to balance their structured assets against liabilities. It reduces the negative effects associated with insufficient capital quality, asset-liability mismatches, and aggressive credit policies that increase credit risk and the probability of losses (Ahulue et al., 2021).

Deposit money banks (DMBs) play a crucial role in ensuring adequate flow of money to service deficit sectors of the economy and facilitate the movement of funds amongst economic units—a process commonly referred to as financial intermediation. According to Ogujiuba and Obiechina (2011), DMBs are integral components of the broader financial system that contribute to overall financial and economic stability. Recent events, such as the global financial crisis and the Covid-19 pandemic, have underscored the significance of maintaining DMB stability as they exposed weaknesses in the banking system. Consequently, DMB stability became a top priority for policymakers and financial regulators worldwide, with various financial system reforms implemented (FSB, 2022).

In Nigeria, the Central Bank of Nigeria (CBN) has instituted various reforms aimed at ensuring effective stability of the banking sector. The liberalization of the financial system in 1986, a major component of the Structural Adjustment Programme (SAP), marked a significant effort at ensuring financial system stability. According to Ogujiuba and Obiechina (2011), the major reforms under the SAP initiative included deregulation of interest and exchange rates, implementation of market-based monetary policy, strengthening of regulatory and supervisory institutions, establishment of the Nigeria Deposit Insurance Corporation (NDIC), and granting of licenses to more banks.

The consolidation reform of 2004/2005 was another significant attempt aimed at enhancing the stability of Nigerian banks. This reform resulted in a more diversified financial sector and improved the contribution and role of other non-bank financial institutions. Prior to the reforms, economic growth rates stood at 6.7%, 14.6%, 9.5%, and 10.4% in 2001, 2002, 2003, and 2004 respectively (International Monetary Fund, 2017). However, the post-consolidation years of 2006 to 2008 did not reveal significant improvement in growth compared to the pre-consolidation years, as the average economic growth rate was recorded at 7.0% (Njang et al., 2010). These efforts demonstrate the crucial role of regulatory bodies in maintaining bank stability and contributing to the overall health of the financial system.

The Covid-19 pandemic led to economic uncertainty and increased financial instability. In the first year, the global economy contracted by approximately 3%, and the Nigerian banking system's performance was significantly affected, with the share of non-performing loans rising substantially (Čihák & Schaeck, 2010). The pandemic highlighted the importance of DMB stability to mitigate such shocks, as insufficient credit was being extended to the private sector, hindering investments, production, and overall growth (Ogujiuba & Obiechina, 2011). The aftermath of the Covid-19 crisis has shown that many banks faced poor asset quality, as evidenced by the rise in non-performing loans. According to Costa Navajas and Thegeya (2013), these non-performing loans have negatively affected DMB stability and, in turn, hindered economic growth.

Given this context, it is crucial to examine the effects of DMB stability and instability on the real economy. While bank stability and economic growth are significant topics worldwide, this study specifically focuses on Nigeria. Prior literature presents diverse views regarding the relationship between financial stability and economic growth, making this a matter of ongoing debate. Furthermore, most studies on the effect of financial stability on economic growth have focused on developed countries (Alsamara et al., 2018; Duprey et al., 2017; Aboura & Van-Roye, 2017; Klemkosky, 2013). This study differentiates itself by investigating the relationship between deposit money bank stability and economic growth using time-series data on bank profitability, asset quality, and liquidity ratio from 2004 to 2023.

METHOD

The study employs a quantitative research design using secondary time-series data. The ex-post facto research design is adopted because the study examines existing data on bank stability indicators and economic growth over the period 2004 to 2023.

Model Specification

The theoretical framework adopted for this study is the endogenous growth theory. Following the works of Ahulu, MacCarthy, and Muda (2021), the functional relationship between economic growth and bank stability variables is specified as:

Economic growth = f (Deposit Money Bank stability)i

The functional model is modified and expatiated to include the variables of interest as:

GDPgr = f (BPROF, AQL, LIQ) ii

The functional model in (ii) is written in its mathematical form as:

GDPgr = $\beta_0 + \beta_1\text{BPROF} + \beta_2\text{AQL} + \beta_3\text{LIQ}$ iii

Econometrically, equation (iii) is expressed as:

GDPgrt = $\beta_0 + \beta_1\text{BPROF}_t + \beta_2\text{AQL}_t + \beta_3\text{LIQ}_t + \varepsilon_t$ iv

where: The dependent variable in the model is GDPgr (gross domestic product growth rate proxy for economic growth) while the independent variables are DMBPF (bank profitability measured by DMBs return on assets), Asset quality (asset quality measured by non-performing loan ratio), and LIQ (liquidity measured by liquidity ratio). These predictors were chosen because they are variables of interest. Secondly, empirical literature relating to similar studies indicated how these explanatory variables influence the economic growth in which some results are not significant.

β_1 , β_2 , and β_3 are regression coefficients of the equation to be estimated. β_0 is the parameter of the equation. t = is the time series of the study ε = error term. It is expected that $\beta_1, \beta_3 > 0 < \beta_2$.

RESULT AND DISCUSSION

The statistical behavior of the variables in this study are described via descriptive statistics (presented in Table 1), followed by a graphical display of the variables.

Descriptive Statistics

The descriptive statistics for all variables are presented in Table 1. The results show that economic growth (GDPgr) averaged 1.9430% over the study period, ranging from a minimum of -1.2700% in 2017 to a maximum of 8.7300% in 2014, with a standard deviation of 2.6985%. This indicates considerable volatility in Nigeria's economic growth during the study period. Bank profitability (BPROF) recorded a mean value of 10.5330%, with a minimum of -13.6100% and a maximum of 32.1500%, and a standard deviation of 9.0961%. The wide range suggests significant variation in bank profitability across the study period.

Table 1. Summary of Descriptive Statistics

	GDPgr	BPROF	AQL	LIQ
Mean	1.943000	10.53300	0.397122	31.62500
Median	1.720000	10.77000	0.477167	30.0000
Maximum	8.730000	32.15000	0.586186	45.00000
Minimum	-1.270000	-13.61000	0.000716	20.00000
Std. Dev.	2.698540	9.096139	0.173535	6.084655
Skewness	2.698540	-0.092041	-0.923103	0.060057
Kurtosis	3.073412	5.047250	2.589334	3.268876

Jarque-Bera	2.364296	3.520932	2.980938	0.072268
Probability	0.306619	0.171965	0.225267	0.964511
Observations	20	20	20	20

Source: E-views 12.0 statistical software

Further analysis revealed that the asset quality (AQL), averaged 0.3971 (39.71%), ranging from a minimum of 0.0007 (0.07%) to a maximum of 0.5861 (58.61%), with a standard deviation of 0.1735. Finally, liquidity ratio (LIQ) averaged 31.6250%, with a minimum of 20.0000% (2005) and a maximum of 45.0000% (2014), and a standard deviation of 6.0846%. This suggests that on average, Nigerian banks-maintained liquidity ratios above the regulatory minimum.

Correlation Analysis

Pearson correlation matrix is used to test the degree of correlation among the variables. The correlation analysis is done to detect the correlation among the GDPgr (1.000), BPROF (0.1326), AQL (0.0503), and LIQ (0.0339). Based on the result, all three independent variables show weak positive correlations with economic growth.

Table 2. Correlation Matrix

	GDPgr	BPROF	AQL	LIQ
GDPgr	1.0000	0.1326	0.0503	0.0339
BPROF	0.1326	1.0000	-0.0194	0.3538
AQL	0.0503	-0.0194	1.0000	0.1480
LIQ	0.0339	0.3538	0.1480	1.0000

Source: E-views 12.0 statistical software

Among the independent variables, the highest correlation is between BPROF and LIQ (0.3538), which is well below the 0.80 threshold that would indicate problematic multicollinearity. The correlation between BPROF and AQL is -0.0194, while AQL and LIQ show a correlation of 0.1480. These low correlation coefficients suggest that multicollinearity is not a concern in this study.

Regression Results

The Ordinary Least Squares (OLS) regression results are presented in Table 3. Based on the result, the coefficient of BPROF is 0.0423, indicating a positive relationship with GDP growth. With a p-value of 0.0581, the coefficient is marginally significant at the 10% level but not at the 5% level. Furthermore, the coefficient of AQL is -0.0835, indicating a negative relationship between non-performing loans and GDP growth. However, with a p-value of 0.8237, the coefficient is not statistically significant at any conventional level.

Lastly, the coefficient of LIQ is 0.0111, indicating a positive relationship with GDP growth. With a p-value of 0.0269, the coefficient is statistically significant at the 5% level. Therefore, we conclude that bank liquidity has a significant positive impact on economic growth in Nigeria.

Table 3. OLS Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.496920	3.698376	0.404751	0.0010
BPROF	0.042318	0.078702	0.537697	0.0581
AQL	-0.083462	3.901362	-0.226449	0.8237
LIQ	0.011083	0.118944	0.093178	0.0269
R-squared	0.620940	Mean dependent var		1.943000
Adjusted R-squared	0.562633	S.D. dependent var		2.698540
S.E. of regression	2.909713	Akaike info criterion		5.150843
Sum squared resid	135.4629	Schwarz criterion		5.349989
Log likelihood	-47.50843	Hannan-Quinn criter.		5.189718
F-statistic	0.114071	Durbin-Watson stat		0.705196
Prob(F-statistic)	0.505838			

Source: E-views 12.0 statistical software

Further interpretation of the analysis shows that the R-squared value of 0.6209 indicates that approximately 62% of the variation in GDP growth rate is explained by the independent variables (bank profitability, asset quality, and liquidity). The remaining 38% is attributed to other factors not included in the model. The F-statistic (0.1141) with a p-value of 0.5058 indicates that the overall model is not statistically significant at conventional levels. This suggests that the independent variables, when considered jointly, do not provide a statistically significant explanation of economic growth. This may be due to the small sample size (20 observations) or the omission of important variables.

Discussion of Findings

This study investigated the impact of deposit money bank stability on the economic growth in Nigeria based on annual data for a period of 20 years (2004-2023) using the ordinary least square regression technique and descriptive tests to analyze the data. The overall result of the descriptive analysis showed that the data is free from outliers and passes the normality test.

The regression results provide mixed evidence on the relationship between DMB stability indicators and economic growth in Nigeria. The OLS result showed that economic growth is expected to increase by 1.49 percent when all independent variables are equal to zero. As regard to the first research objective, the study found a positive coefficient for bank profitability ($\beta_1 = 0.0423$). This indicates that a 1% increase in return on assets is associated with a 0.0423% increase in GDP growth rate. This finding aligns with the theoretical expectation that profitable banks are better positioned to extend credit to the real sector, thereby stimulating economic activity. This result is consistent with the findings of Berger and Humphrey (1997), who documented a positive relationship between bank efficiency and economic performance.

Further, the estimated least square revealed that the coefficient of asset quality was -0.08, which indicates that a 1% increase in asset quality leads to a 0.08% decrease in GDP growth rate. This suggests that asset quality has a negative impact on economic growth. This result supports the expectation of the researcher and by implication means that an increase in non-performing loan will significantly decrease economic growth in Nigeria. This finding supports the theoretical expectation that poor asset quality constrains bank lending and

economic activity. However, the lack of statistical significance ($p=0.8237$) indicates that the relationship is not robust in this sample. This contradicts the findings of Nkoro and Uko (2016), who argued that high asset quality leads to increased lending and economic growth.

Lastly, the regression equation of liquidity ratio with estimated coefficient of 0.011, indicates that a 1% increase in liquidity ratio leads to a 0.011% increase in GDP growth rate and was statistically significant. This finding supports the theoretical expectation that banks with adequate liquidity are better able to meet credit demands and withstand economic shocks. This result is consistent with Kashyap and Stein (2000), who found that banks with sufficient liquidity are more capable of enhancing growth and development.

CONCLUSION

The purpose of this project is to investigate the impact of deposit money bank stability on economic growth in Nigeria. The data were collected and analyzed using the ordinary least square regression technique from 2004 to 2024. The findings from the analysis shows that bank stability provides a good response to economic growth and can promote economic growth. However, the individual impact of the variables on economic growth reveals a positive and significant impact of bank profitability and bank liquidity on economic growth in Nigeria. These results support the study expected outcome. However, the relationship between economic growth, and asset quality was negative. The outcome from this study has provided the necessary impetuses needed by deposit money banks to maintain a balance between profitability and liquidity while cushioning against the risk of non-performing loans as it is detriment to economic growth.

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