

Inflation and Commercial Banks Performance in the Nigerian Economy

ANDABAI, Priye Werigbelegha, Ph.D

Department of Banking and Finance. Niger Delta University,
Bayelsa State, Nigeria.

Sender: priyehc@yahoo.com

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Abstract

The research looks at how Nigerian commercial banks performed from 1993 to 2022 about inflation. To gauge the performance of Nigerian banks, the independent factors are the money supply, inflation rate, and monetary policy rate about the dependent variable, return on assets. The Central Bank of Nigeria's bulletin (2022) provided the study's accessible data. The rate of inflation significantly affects the return on assets in a favourable way. From the analyzed data, it was revealed that the broad money supply significantly affects the return on assets, whereas the monetary policy rate significantly positively affects the return on assets in Nigeria. The research concludes that the two dimensions of inflation—money supply and inflation rate—harm the return on assets held in deposit accounts at banks. According to the study, efficient tracking of the money supply and inflation rate is critical to supporting the banking sector's growth. This is essential since it will benefit businesses and the economy as a whole.

Keywords: *Inflation, Commercial Banks, Performance, Nigeria*

INTRODUCTION

In scholarly papers and policy documents, the argument over inflation and the operational outcome of the banking sector is a significant and intricate topic. It is significant because of investors, shareholders, and management. As a result, it causes inefficiencies in resource distribution and affects how the pricing system works. According to Todd and Henry (2021), businesses distribute earnings for internal fund buildup, dividend payments, and current investments. Furthermore, there is much confusion and disagreement about the mechanism by which inflation impacts the performance of banks. The uncertainty around future inflation rates is one of the most significant costs of inflation as it relates to the performance of organisations.

Idowu and Hassan (2020) define inflation uncertainty as price uncertainty caused by several variables that are difficult to assess because they are not immediately visible. According to Friedman (1977), quoted in Mohammed (2021), inflation uncertainty is also costly because it affects relative pricing and increases the risk of carrying economic activities, both of which hurt production and performance. Mohammed (2018) was added. Generally speaking, inflation throws off a company's business strategy. The situation of fluctuating service pricing and input costs,

which have lowered anticipated investment expenditures, makes budgeting challenging. It deteriorates the firm's policy the most, which has an impact on the company's performance.

The Linter (1975) model, which Todd and Henry (2017) use, forecasts how inflation would affect a firm's performance (the choice of how to allocate profits). Research has shown that inflation lowers investment levels and efficiency, which in turn lowers overall production. Research has shown that countries with the fastest rates of money growth—like Nigeria does right now—also have the highest rates of inflation. If inflation rises by over one per cent, it is a sign of a faltering economy. One might thus infer that inflation is a monetary phenomenon since, in actuality, high rates of inflation only happen when large amount of money supply exist.

However according to Emekekwe (2022), there is a certain amount of inflation that is necessary to maintain sustainable banking expansion, so it's not entirely terrible. When inflation reaches an unfavourable point, it significantly impairs business performance, which in turn makes financial choices more difficult and creates a great deal of uncertainty in the global economy.

Furthermore, there is increasing interest in analysing the implication of the recent global economic challenge on banking operational viability in Nigerian banking sector, given the ongoing unstable development of the country's banking sector by increases in inflation rates.

Statement of the Problem

Many research papers have delved into the interplay among inflation and the operational viability of the banking industry in both established and developing regions. Various studies have shown different findings regarding the correlation between the inflation component and the operational viability of the banking sector. Some studies have highlighted a strong positive association, while others have identified a significant negative relationship. Additionally, some studies have found no meaningful connection between these two variables. For instance, a study conducted by Oleka, Eyisi, and Onyeze (2021) revealed a favourable interplay among inflation, bank operational viability, and the investment choices of Nigerian commercial banks. However, the correlation was not statistically significant.

On the other hand, some researchers have found a significant adverse connection between inflation and banking performance (Oritoni, 2018). Another study (Geetha, Mohidin, Chandran and Chong, 2021) has found that there are varying results and discrepancies in the impact of inflation on performance due to errors in the method used to calculate inflation coefficients. Given the wide range of contradictory empirical research on the impact of inflation rates in developing nations on the banking sector's performance, it is difficult to reach any definitive conclusions with a reasonable level of confidence. Additionally, unpredictable borrowing by both retail and corporate clients has been a challenge for Nigeria's deposit money institutions (Opuodo, 2021). Despite the fact that the Nigerian banking system is not an exception to this pattern, it has not been shown via empirical study whether high lending rates or inflationary causes are to blame for the oscillations. Given this background, the research will closely examine how inflation affects deposit money bank performance in Nigeria over seven years.

REVIEW OF RELATED LITERATURE

Inflation is a lasting rise in the price level on an average or a gradual decrease in money's purchasing power. Some economists often interpret a rise in the amount of money in circulation as inflation. There are many different schools of economic thinking, leading to disagreements over the origins of inflation and inflation uncertainty. In general, Boyd and Champ (2021) define inflation as the steady rise in the price of products over an extended period of time in an economy.

A rising price level results to a decline in purchasing power per unit of money. Consequently, inflation causes the purchasing power of money to decline, as well as the actual value of the currency and unit of account in the economy. The authors additionally note that elevated rates of inflation stem from the overabundance of money supply expansion in the economy relative to the pace of economic expansion. Consequently, they advocate for lower inflation rates as they mitigate the intensity of economic downturns by facilitating quicker labour market adjustments. The inflation rate, which is the annualised percentage change in a general price index over time (usually the consumer price index), is the primary indicator of price inflation. The consumer price index tracks changes in the cost of a predetermined selection of products and services that the average customer would buy. The inflation rate refers to the percentage rate at which a price index changes over time.

Umar (2017) quoted Friedman (1977), who presented a non-formal argument on the true impacts of inflation. There are two components to his argument. According to the first portion of his theory, rising inflation may cause the monetary authority to respond to policy in an unpredictable way, increasing uncertainty about inflation's future rate. According to the second part of Friedman's theory, rising inflation uncertainty skews how well the pricing mechanism allocates resources, which has a negative impact on production. Ball (2012) focused on the first part of Friedman's premise and formalised the Friedman argument. A cash-in-advance model that accommodates risk aversion and precautionary savings demonstrates how higher inflation uncertainty may improve production performance.

Undoubtedly, the money supply is one of the most important factors influencing inflation. More money in circulation allows for the purchase of more items, which raises aggregate demand and drives up prices. Lipsey, (2022). In 2019, Ramady conducted a study on the internal and external determinants of inflation in Saudi Arabia. As a result of the growing inflationary impact of an expanded money supply, the Saudi Arabian Monetary Agency changed the minimum amount of bank reserves for the first time since 1982, according to the results. It is possible to interpret the SAMA's four increases in reserve conditions for commercial banks in 2007 and 2008 as an effort to absorb the liquidity created by lower interest rates. By making banks retain larger statutory deposits at the central bank, an increase in the reserve requirement lowers the total amount available for lending. This forces the banks to raise the base lending rate because getting money is more expensive, which in turn slows down credit growth and eventually drives up inflation.

Gichuki (2022) claims that the Central Bank of Kenya has employed monetary policy over the years to control output and inflation by concurrently utilising reserve money and interest rates.

This implies that there is a close correlation between interest rates and inflation. Gavin et al. (2005) looked at real variables, the information content of monetary data, and the implication of different monetary policy guidelines for the persistence of inflation. The study found that the Central Bank's money supply rule affected both the persistence and variability of inflation. In their study Oduor et al. (2012) discovered that interest rates rose in high-inflation scenarios and fell in low-inflation scenarios. This situation allows for the implementation of inflation stabilisation through the response of interest rates to output and inflation.

An implication of inflation is a rise in production costs as businesses raise the prices of their final goods. Keeley (2021). This occurs when the cost of raw materials rises, forcing businesses to raise prices to either maintain or fulfil their profit margins, or when labour costs rise. International financing and national debts may also lead to inflation; in this scenario, to meet their debt commitments, the countries that have taken out loans must keep their interest rates the same (Stiglitz, 2014).

Types of Inflation in Nigeria

According to Chude and Chude, (2015) inflation is categorised into four types:

Creeping inflation: This occurs when the increase in price is extremely gradual. This category encompasses a gradual yearly increase in prices of less than 3 percent. This rise in prices is seen as necessary and beneficial for economic development.

Walking inflation: This occurs when prices increase moderately and the annual inflation rate remains in the single digits. This occurs when the rate of inflation falls within the moderate range of 3 to less than 10 percent. The rate of inflation serves as a warning sign for the government to take control and prevent it from escalating into a persistent issue.

Running inflation: When prices increase rapidly at a rate of 10 to 20 percent per year, it is referred to as running inflation. This kind of inflation has significant negative impacts on the less privileged and middle-income individuals. To manage it, effective monetary and fiscal measures are necessary.

Hyper inflation: Hyperinflation is a phenomenon characterised by a rapid and significant increase in prices. This could lead to a scenario where the inflation rate becomes immeasurable and prices skyrocket on a daily basis. This scenario leads to a complete breakdown of the monetary system due to the ongoing decrease in the purchasing power of money.

THEORITICAL REVIEW

The Neutralists' Theory

They contend that inflation has no discernible influence on investment in an attempt to balance the neutralist interpretation of investment decisions with inflationary impacts. The theory acknowledges that inflation is a complex phenomenon, and while economists have not definitively proven that it is universally detrimental to an economy, it is generally regarded as a negative force. The claim that investors can rely on a price level that fluctuates frequently, is completely predictable, and elicits responses from all economic actors as a reliable indicator for making

investment decisions has been the subject of intense debate. In their study Clark and Peter (2016) found no conclusive evidence regarding the relationship between inflation, economic development, and investment in any economy. According to this idea, the school cautions against jumping to conclusions about how inflation affects an economy without first conducting econometric calculations. Until then, it remains uncertain whether inflation has a favourable or adverse impact on the performance of a particular entity. Assuming this to be true, the theorists who advocate neutrality settled that a company's investment decisions are unaffected by inflationary effects.

Empirical Review

In scholarly papers and policy documents, the argument over inflation and the operational viability of the banking sector is a significant and intricate topic. It is significant because of investors, shareholders, and management. As a result, it causes inefficiencies in resource distribution and affects how the pricing system works. According to Todd and Henry (2021), businesses distribute earnings for internal fund buildup, dividend payments, and current investments. Furthermore, there is much confusion and disagreement about the mechanism by which inflation influences the performance of banks. The uncertainty around future inflation rates is one of the most significant costs of inflation as it relates to the performance of organisations.

Iidowu and Hassan (2020) define inflation uncertainty as price uncertainty caused by several variables that are difficult to assess because they are not immediately visible. According to Friedman (1977), quoted in Mohammed (2021), inflation risk is also costly because it affects relative pricing and increases the uncertain of carrying out economic activities, both of which hurt production and performance. Mohammed (2018) was added. Generally speaking, inflation throws off a company's business strategy. The situation of fluctuating service pricing and input costs, which have lowered anticipated investment expenditures, makes budgeting challenging. It deteriorates the firm's policy the most, which has an impact on the company's performance.

The Linter (1975) model, which Todd and Henry (2017) use, forecasts how inflation would affect a firm's performance (the choice of how to allocate profits). Research has shown that inflation lowers investment levels and efficiency, which in turn lowers overall production. Research has shown that countries with the fastest rates of money growth—like Nigeria does right now—also have the highest rates of inflation. If inflation rises by over one per cent, it is a sign of a faltering economy. One might thus infer that inflation is a monetary phenomenon since, in actuality, high rates of inflation can only occur when there is a large amount of money supply.

However according to Emekekwe (2022), there is a certain amount of inflation that is necessary to maintain sustainable banking expansion, so it's not entirely terrible. When inflation reaches an unfavourable point, it significantly impairs business performance, which in turn makes financial choices more difficult and creates a great deal of uncertainty in the global economy.

Furthermore, there is increasing interest in analysing the impact of the recent global financial crisis on banking performance within the context of the Nigerian banking sector, given the ongoing unstable development of the country's banking sector brought on by increases in inflation rates.

METHODOLOGY

The researcher used an ex post facto study design. This approach was used because it allowed going back and seeing whether there was a link between the independent and dependent variables.

Method of Data Analysis

The empirical research uses time series data (also known as secondary data). Because the independent and dependent variables in question—inflation (money supply and monetary policy rate) and profitability (return on asset)—are measurable and verifiable, the use of secondary data was required. Nevertheless, additional secondary sources of data and information included excerpts from published papers, textbooks, and journals. This study uses data from the Central Bank of Nigeria bulletin for the years 1998–2022.

Model Specification

Economic theory and any information that is currently accessible on the phenomena under study will serve as the foundation for the specification of an econometric model. Based on that assumption, this research, as previously noted in the chapter, accepts the Friedman theory of inflation, taking into account both its functional link and proximity to the current study.

In order to investigate the impact of inflation (return on asset) and the money supply and monetary policy rate on deposit money bank performance in Nigeria, the researcher used the statistical technique of multiple regression approach.

The model's functional relationship is as follows:

$$ROA = \beta_0 + \text{Log } \beta_1 \text{INFL} + \text{Log } \beta_2 M_2 + \text{Log } \beta_3 \text{MPR} + \mu$$

Where:

ROA = Return on Asset

INFR = Inflation Rate

M₂ = Broad Money Supply

MPR = Monetary Policy Rate

LOG, log for each variables in the model

β₀, β₁, β₂, β₃ = coefficient parameters.

μ = the error term which is the disturbance term or random variable. A random variable are variable which value depend on chances or probabilities.

DATA ANALYSIS AND RESULTS

The data used for this analysis are secondary data from CBN Statistical Bulletin for a period of 1993-2022 as indicated on appendix 1.

Descriptive Statistics

The descriptive statistics are summarised in Table 1 below. It provides a summary of results for all variables, including the mean, median, maximum, minimum, standard deviation, and number of observations, among others.

Table 1 Descriptive Statistic

| | INF | M ₂ | MPR | ROA |
|--------------|----------|----------------|-----------|-----------|
| Mean | 12.01348 | 12836.30 | 12.66826 | 2.138217 |
| Median | 11.90000 | 9687.510 | 13.00000 | 2.529000 |
| Maximum | 23.80000 | 40318.29 | 19.00000 | 4.670000 |
| Minimum | 0.900000 | 488.1500 | 6.000000 | -9.820000 |
| Std. Dev. | 4.540340 | 12172.06 | 3.108555 | 2.827675 |
| Skewness | 0.205016 | 0.740488 | -0.277217 | -3.438219 |
| Kurtosis | 4.345644 | 2.380358 | 3.291906 | 15.28917 |
| Jarque-Bera | 1.896429 | 2.469863 | 0.376249 | 190.0462 |
| Probability | 0.387432 | 0.290855 | 0.828512 | 0.000000 |
| Sum | 276.3100 | 295235.0 | 291.3700 | 49.17900 |
| Sum Sq. Dev. | 453.5231 | 3.26E+09 | 212.5885 | 175.9063 |
| Observations | 30 | 30 | 30 | 30 |

Source: Author Computation from E-vie, 10.1

Table 1 presents a descriptive overview. The descriptive statistics provide the mean, standard deviation, and total number of observations for each variable. It also displayed the lowest and highest values that these variables are capable of producing. It showed that the return on assets was reported as follows: 2.138217% on average, 4.670000% on average, and -9.820000% on minimum. The money supply reports an average, maximum, and minimum of 12836.30, 40318.29, and 488.1500, respectively, while the summary of the monetary policy rate shows a mean, maximum, and minimum value of 12.66826%, 19.00000%, and 6.0000%, respectively. Additionally, the average inflation rate is 12.01348%, with a high of 23.80000% and a low of 0.900000%. As a metric of symmetry, skewness indicates that all variables are positively skewed, indicating that each variable has a relatively incremental value. All of the variables have the least positively skewed data.

Unit Root Test

The examination of the variables' stationarity was conducted employing the Augmented Dicker Fuller (ADF) Unit Root Test. The findings presented in table 2 indicate that all the variables exhibit integration at the first difference, denoted as 1(1), with statistical significance at either the 5% or 1% level.

Table 2: Unit Root Tests Analysis

| Variables | ADF test Statistics | Mackinnon critical @ 5% | No of the time difference | Remark |
|----------------|---------------------|-------------------------|---------------------------|------------|
| ROA | 4.3736452 | -4.635421 | I(1) | Stationary |
| M ₂ | -2.1836433 | -3.243517 | I(1) | Stationary |
| INFL | -4.8241511 | -4.243674 | I(1) | Stationary |
| MPR | 4.6352432 | 2.436528 | I(1) | Stationary |

Test for Co-Integration

The next stage is to use the Johansen co-integration approach to determine if Return on Asset (ROA), Broad Money Supply (M2), Inflation rate (INFL), and Monetary Policy Rate (MPR) are co-integrated similarly after determining that all the variables exhibit stationarity at the initial difference. Table.3 presents the analytical findings in a clear and concise manner.

Table 3: Multivariate Johansen's Co-Integration Test Result.

| Null hypotheses | Alternative hypotheses | Eigen value | Likelihood ratio | Critical vales 5% | Critical value 1% | Hypothesized No. of CE(s) |
|-------------------|------------------------|-------------|------------------|-------------------|-------------------|---------------------------|
| r=0 | r=1 | 0.735467 | 56.33235 | 58.36 | 41.23 | None ** |
| rd _≤ 1 | r=2 | 0.633543 | 43.43625 | 44.29 | 38.53 | At most 1 |
| rd _≤ 2 | r=3 | 0.524365 | 36.45362 | 36.43 | 23.13 | At most 2 |
| rd _≤ 3 | r=4 | 0.534271 | 24.53760 | 24.35 | 21.45 | At most 3 |

Data Analysis

This section presents the correlation matrix and regression (i.e. ordinary least square) results of the independent, dependent and control variables. The results are presented as follows:

Table 4 Ordinary Least Square Method (OLS)

Dependent Variable: ROA

Method: Least Squares

Date: 14/02/24 Time: 08:42

Sample: 1 24

Included observations: 30

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|-----------|
| C | 0.207814 | 0.000857 | 0.354392 | 0.7269 |
| INF | -0.124497 | 0.000403 | 0.886712 | 0.0063 |
| Ln(M2:) | -0.217645 | 0.003524 | -0.432244 | 0.0304 |
| MPR | 0.027217 | 0.004986 | 0.120973 | 0.9050 |
| R-squared | 0.751806 | Mean dependent var | | 2.138217 |
| Adjusted R-squared | 0.747909 | S.D. dependent var | | 2.827675 |
| S.E. of regression | 2.962870 | Akaike info criterion | | -0.166965 |
| Sum squared resid | 166.7934 | Schwarz criterion | | -0.364442 |
| Log likelihood | -55.42010 | Hannan-Quinn criter. | | -0.216630 |
| F-statistic | 0.346029 | Durbin-Watson stat | | 2.670432 |
| Prob(F-statistic) | 0.000089 | | | |

Source: Author Computation from E-view output version, 10.1

Test of Hypothesis

The output indicates that the highlighted result is significant at the 5% level. If p-value is less than 0.05, reject the null hypothesis.

H₀₁:: Inflation rate (INF) does not have a significant impact on return on assets. Thus, based on Table 4.6, the probability value of 0.0063 < threshold of 5%. This implies the rejection of the null hypothesis. Thus, the analysis comes to the conclusion that Nigeria's inflation policy rate meaningfully affects return on assets.

H₀₂:: Money supply does not have a significant impact on return on assets . Thus, based on Table 4, the probability value of 0.0304 is significant at the 5% level. This implies the rejection of the null hypothesis. Thus, the analysis comes to the conclusion that Nigeria's money supply significantly affects return on assets.

H₀₃:: Monetary policy rate (MPR) does not have a significant impact on return on assets. Thus, based on Table 3, the probability value of 0.9050 is more than the significance threshold of 5%. Inferred is the acceptance of the null hypothesis. Thus, the analysis comes to the conclusion that the monetary policy rate in Nigeria significantly affects return on assets.

CONCLUSION AND RECOMMENDATIONS

The research comes to the conclusion that the two dimensions of inflation—money supply and inflation rate—have an adverse implication on the return on assets held in deposit accounts at banks. However, because banks primarily base their decisions on the interest rate and maturity of financial instruments, they can resist the effects of inflation in the early phases. But when inflation picks up speed, the financial sector is unable to withstand the impact. This research examined how Nigerian deposit money banks performed in relation to inflation. The findings indicate that the two dimensions of inflation that were considered—the money supply and the inflation rate—have an adverse implication on deposit money bank returns on assets and a negative knock-on effect on the economy as a whole. The main way that inflation hinders performance is that it forces businesses to reallocate resources away from more productive endeavours to concentrate on profit and loss from inflation. The research thus make the following suggestions in light of the aforementioned results, among other things: For the banking industry to develop more quickly, there is an urgent need for efficient monitoring of the money supply and inflation rate. This is critical for its positive impact on the company and the overall expansion of the economy. The monetary authorities' efficient oversight and regulatory structure of the financial sector improve monetary policies targeted at interest rates. Thus, ongoing monetary measures that would activate the desired macroeconomic stability will support Nigerian business expansion.

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Appendix1:

Inflation and Commercial Banks Performance in Nigeria 1993 to 2022

| Year | Inflation Rate (%) | Money Supply (N'Billion) | Monetary policy rate (%) | Return on Assets |
|------|--------------------|--------------------------|--------------------------|------------------|
| 1993 | 1.90 | 488.15 | 14.31 | 2.88 |
| 1994 | 1.90 | 628.95 | 18.00 | 2.10 |
| 1995 | 11.50 | 878.46 | 13.50 | 2.70 |
| 1996 | 6.50 | 1,269.32 | 14.31 | 1.20 |
| 1997 | 12.20 | 1,505.96 | 19.00 | 3.47 |
| 1998 | 11.90 | 488.15 | 14.31 | 2.88 |
| 1999 | 0.90 | 628.95 | 18.00 | 2.10 |
| 2000 | 14.50 | 878.46 | 13.50 | 2.70 |
| 2001 | 16.50 | 1,269.32 | 14.31 | 1.20 |
| 2002 | 12.20 | 1,505.96 | 19.00 | 3.47 |
| 2003 | 23.8 | 1,952.92 | 15.75 | 2.67 |
| 2004 | 10 | 2,131.82 | 15.00 | 3.12 |
| 2005 | 11.60 | 2,637.91 | 13.00 | 1.85 |
| 2006 | 8.50 | 3,797.91 | 10.00 | 1.61 |
| 2007 | 6.60 | 5,127.39 | 9.50 | 3.89 |
| 2008 | 15.10 | 8,643.43 | 9.75 | 3.95 |
| 2009 | 12.00 | 9,687.51 | 6.00 | 1.85 |
| 2010 | 11.80 | 11,101.46 | 6.25 | 1.61 |
| 2011 | 10.30 | 12,628.32 | 12.00 | 3.7 |
| 2012 | 12.00 | 15,503.41 | 12.00 | 3.95 |
| 2013 | 8.00 | 18,743.07 | 12.00 | -9.82 |
| 2014 | 8.00 | 20,415.61 | 13.00 | 4.09 |
| 2015 | 9.60 | 20,885.52 | 11.00 | -0.04 |
| 2016 | 18.60 | 24,259.00 | 14.00 | 2.4 |
| 2017 | 15.40 | 28,604.47 | 14.00 | 2.3 |
| 2018 | 11.40 | 29,774.43 | 14.00 | 2.5 |
| 2019 | 11.980 | 34,251.70 | 13.50 | 2.529 |
| 2020 | 15.80 | 36,,038.01 | 11.50 | 3.27 |
| 2021 | 15.63 | 40,318.29 | 11.50 | 4.67 |
| 2022 | 15.80 | 36,,038.01 | 11.50 | 3.27 |

Source: Central Bank of Nigeria Statistical Bulletin, 2022