

DETERMINANTS OF INTEREST RATE AND ITS EFFECT ON THE NIGERIAN ECONOMY

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ABSTRACT

This research examines data from 1998 through 2022 on interest rates and the Nigerian economy. Among the secondary sources taken into consideration is the Central Bank of Nigeria bulletin 2022. GDP serves as a proxy for the Nigerian economy in this research; variables that provide insight into GDP include inflation, private domestic investment, and the prime lending rate (interest rate). Using econometric techniques such as ordinary least squares, develop and test hypotheses. Investment from outside is essential to Nigeria's economy. Nigeria's inflation rate is positive, although it doesn't significantly impact GDP. Interest rate fluctuations hardly affect Nigeria's GDP. According to the coefficient of determination, changes in the variables related to commercial bank lending in Nigeria are responsible for more than 60% of the country's economic variations. The data showed that interest rate setting had a marginally encouraging influence on Nigeria's economic expansion. Governments and policymakers may be able to address the inflation problem by keeping inflation rates low and steady (in the single digits) if they take the study's recommendations to heart. The CBN needs to regulate the commercial banking sector more strictly to stop banks from raising lending rates arbitrarily. It is the job of legislators and the government to foster an atmosphere that motivates banks to provide effective financial services to the economy.

Keywords: Determinants, Interest Rate, Effect, Nigerian. Economy

INTRODUCTION

In the context of any contemporary economic system, it is imperative to underscore the paramount significance of an efficacious interest rate policy as a tool for implementing monetary policy. However, Adeopko and Amusun's (2018) academic investigation has revealed the idea that Nigeria's interest rate initiative is a contentious financial policies in existence due to its inherent contentiousness. Therefore, it is not unreasonable to surmise that the underlying rationale stems from the fact that the policy pertaining to interest rates exerts a discernible impact on various macroeconomic indicators, including but not limited to investment, capacity utilisation, balance of payments, and inflation.

The interest rate, in its essence, assumes a pivotal role in the realm of economic dynamics as it endeavours to foster the optimal distribution of resources, thereby fostering the advancement and maturation of an economy. The scholarly research conducted by Utile, Okwori, and Ikpambese (2018) further substantiates the notion that Nigeria's interest rate policy suffers from a dearth of coherence. This observation holds true both in the pre- and post-implementation phases of the Structural Adjustment Programme, during which regulatory bodies imposed various credit control measures within the nation. Henceforth, the prevailing conditions within the business milieu have engendered a heightened level of peril and unpredictability, thereby impeding enterprises in their arduous endeavour to fulfil their financial obligations.

Furthermore, Andabai and Gbalam (2018) contend that the justice system is noticeably ineffective, which hinders financial institutions from swiftly enforcing contractual agreements.

Nevertheless, it is evident that the exorbitant interest rate prevalent within the Nigerian financial system is indicative of the substandard economic policies and ineffective institutional framework that give rise to the substantial risks entailed in funding investments within the Nigerian economy.

Henceforth, it is anticipated that the interest rate will assume a pivotal function as an instrument employed by Nigeria's apex bank in the astute administration of monetary policy within the Nigerian economy. Consequently, it is noteworthy to acknowledge that the regulations pertaining to interest rates have consistently been encompassed within the annual budget document of the federal government or the monetary policy issued by the esteemed CBN on a periodic basis (Aliyu & Mammud, 2017). Regrettably, in Nigeria, the efficacy of diverse interest rate regimes appears to be lacking. This can be attributed to the prevailing challenges of underdevelopment, which have ensnared the nation's economy due to persistent political and economic instability, insufficient infrastructure, and inconsistent governmental policies. Consequently, the implementation of interest rate policies encounters considerable difficulty in attaining optimal functionality within the Nigerian economic landscape.

Numerous investigations have been undertaken in Nigeria pertaining to the intricate interplay between interest rates and the trajectory of economic growth. Utula, Okowu, and Ikpambese (2018), as well as Imoughele and Ijaiyea (2017), have significantly contributed to this body of research. These studies elucidate a noteworthy and affirmative correlation among interest rate and the augmentation of economic expansion. Several additional studies conducted by Adeopko and Amusun (2018) and Osundina and Osundina (2017) have revealed a noteworthy adverse impact on economic growth, exhibiting comparable time series data characteristics. The scholarly contributions of Oluitanide (2016) and Nwaru and Okorontah (2017) reveal a lack of consensus regarding the consequence of interest rates on the trajectory of growth of economy in Nigeria. Consequently, the investigation conducted by Andabai and Chukwunulu (2018) has further substantiated the notion that the interest in question has failed to maintain proficient intermediation, particularly in terms of credit allocation and a substantial degree of monetization within the Nigerian context. Henceforth, within the context of any contemporary economic system, the significance of the interest rate as a tool for implementing monetary policy cannot be overstated.

The scholarly research conducted by Aliyu and Mammud (2017) has shed light on the pivotal role of interest rates as a crucial tool employed by the CBN to effectively administer monetary policy within the nation's economy. Regrettably, it appears that the diverse interest rate systems in Nigeria have proven to be ineffective. This can be attributed to the persistent challenges faced by the economy, namely the enduring grip of underdevelopment stemming from economic and political imbalances, insufficient infrastructure, and the changing of government initiatives. Consequently, the efficacy of interest rate policies in fostering growth and stability within the Nigerian economy is significantly impeded. Henceforth, the presence of contradictory outcomes and predicaments has engendered a visible gap in the field of understanding pertaining to this inquiry. Thus, the current work attempts to address these issues in this setting by undertaking research into the influence of interest rates on the expansion of the Nigerian economy.

Theoretical Review

The investigation is founded on the monetary theory posited by Keynes. The theory postulates that the prevailing interest rate is contingent upon the intricate interplay between the dynamics of money's demand and supply. This, in turn, exerts an influence on the overall

aggregate demand, thereby establishing a mechanism by which alterations in the money supply reverberate throughout the market's goods, ultimately determining the extent of output and employment. The elucidation of this theory becomes apparent upon a thorough examination of its intricate transmission mechanism. This concept can be articulated in the following manner:

$$M_2 \longrightarrow R \longleftarrow I \longrightarrow AD \longrightarrow Y$$

Still, using the above mechanism, we can figure out that an initial rise in the money supply (M_2) will cause the interest rate (R) to fall, which will then cause investment expenditure (I) to rise, depending on the marginal efficiency of capital. The underlying premise posits that investment is contingent upon the rate of interest, exhibiting an inverse correlation. Consequently, a decline in the rate of interest serves as a catalyst for increased investment. The augmentation of investment yields a corresponding augmentation in the real national income (Y) through the mechanism of effective demand, which encompasses consumption spending (C), investment (I), government spending (G), and net exports (X_n).

According to Keynesian theory, the injection of additional funds into the money supply can result in an increase in output, provided that the economy is functioning in a state of equilibrium with full employment and without any impact on price levels. Therefore, once the economy reaches a state of full employment output, any additional increases to the money supply will inevitably exert inflationary pressure on prices, resulting in a proportional rise in effective demand. Hence, a decline in the prevailing interest rate shall engender a surge in investment activity, thereby augmenting the level of effective demand via the multiplier effect, consequently leading to an expansion in overall economic output.

Empirical Review

Henshaw (2018) conducted a study spanning the years 1990 to 2017 that explored the complex connection among inflation and economic expansion in the Azerbaijani economy. According to the estimated threshold model, it has been discerned that the Azerbaijani economy is subject to a non-linear association among interest rates and both economic expansion and inflation. The minimum level of inflation required to stimulate GDP growth is quantified at 13 percent. The empirical evidence suggests that there exists a noteworthy and statistically significant correlation between the level of inflation and the growth of GDP. However, it is important to note that this positive correlation undergoes a transformation and becomes negative once the inflation rate surpasses the threshold of 13 percent.

In their scholarly work, Kamalu (2017) employed time series econometric models to explore the intricate interplay among interest rate deregulation and the trajectory of expansion of economy in Pakistan during the period spanning from 1990 to 2016. The empirical analysis has yielded the conclusion that the process of interest rate liberalisation in Pakistan has failed to yield favourable outcomes in terms of economic development. This is primarily because various signs of financial liberalisation do not exhibit any noteworthy influence on saving, investment, or overall economic expansion. The empirical analysis pertaining to the liberalisation of interest rates in Pakistan has shed light on the intricate relationship between this policy measure and the overall economic landscape of the nation. It has been discerned that the sustained and enduring economic growth experienced by Pakistan is predominantly attributable to the augmentation of physical capital and the fluctuations in the real interest rate. The empirical analysis has yielded the conclusion that financial liberalisation has engendered noteworthy adverse effects on the trajectory of economic growth. This implies that the intended objective of financial reforms, namely the attraction of fresh investments, has not been successfully realised.

The study conducted by Osundina and Osundina (2017) utilised the Ordinary Least Squares econometrics technique to examine the outcome of interest rates on the expansion of the private sector in Nigeria during the period of 1990–2016. The impacts of interest rate on the money supply were evaluated, and the variable was subjected to an autoregressive analysis. Among various findings, it is evident that the minimum rediscount rate and savings rate have exerted a noteworthy and favourable influence on the money supply.

Chinwe (2018) conducted a study to evaluate the association among Nigeria's real interest rate on advancement the economy in 1986 to 2017. The findings indicate the presence of a distinctive and enduring correlation among the interest rate and the trajectory of economic expansion. The empirical analysis has yielded the conclusion that the interest rate variable holds significant influence as a determinant of economic growth within the Nigerian context. Nevertheless, it is imperative to acknowledge that the attainment of the desired outcome through the deregulation of interest rates in Nigeria may be hindered if the various adverse elements that impede investment are not effectively addressed.

METHODOLOGY

The research used ex-post facto design, which allowed for the collection of necessary information. The data utilised in this study has been procured from CBN bulletin. The data collected pertaining to the variables serves as the fundamental foundation for the comprehensive study, spanning a duration of 25 years from 1998 to 2022, as explicitly indicated in Appendix 1.

The utilisation of multivariate regression serves as a means to examine and evaluate the various null hypotheses posited within the context of this particular study. Based upon the postulated hypotheses, it can be inferred that the determination of interest rates does not exert a discernible impact on the Nigerian economy. Henceforth, a conceptual framework is derived from the scholarly contributions of Utula, Okowu, and Ikpambese (2018). The underlying framework posits the model in the following manner: Gross domestic product (GDP) is a function of various factors, namely the exchange rate (EXR), interest rates (INT), and inflation (INFL). Inquiring about the variables in question, we seek to elucidate the relationship between GDP, denoting the gross domestic product as a representative measure of the Nigerian economy, and its counterparts, namely EXR, symbolising the exchange rate, INT, signifying the prime lending rate, and INFL, representing the inflation rate. Therefore, the revised model is expressed as:

$$GDP = a_0 + a_1PDI + a_2LnINFL + Ln a_3INT + \mu.$$

Where:

GDP proxy for the Nigerian economy;

PDI represents private domestic investment;

INFL represents the inflation rate.

INT represents the interest rate.

a_0 = constant parameter,

a_1 - a_3 = elasticity coefficient of each variable.

μ = error term,

Ln is the natural log of the variables.

Results**Descriptive statistics****Table 1: Descriptive statistics**

	GDP	PDI	INTR	INFL
Mean	5777.39	5466.94	15.76861	42.24364
Median	3476.63	4387.58	18.06778	23.14652
Maximum	3399.87	7365.84	48.10077	28.1000
Minimum	2366.46	3365.83	37.99968	22.1000
Std. Dev.	6.12803	1.487.05	4.7689.87	9.61713
Skewness	0.28553	3.11849	1.0671.68	0.18559
Kurtosis	3.07533	14.19451	5.2563.21	2.604257
Jarque-Bera	0.46077	203.1537	12.83671	0.25374
Probability	0.801893	0.000000	0.001613	0.82179
Sum	162.3200	3173.311	596.4000	1486.92
Sum Sq. Dev.	1159.355	685375.4	907.1700	2867.17
Observations	25	25	25	25

The tabulated data in Table 1 reveals the descriptive statistics pertaining to various economic indicators. Specifically, the Gross Domestic Product (GDP) during the observed period exhibited an average value of ₦5,776.39. Private domestic investment, on the other hand, demonstrated a value of ₦5,465.7. Additionally, the prevailing interest rate stood at 15.76%, while the inflation rate reached 42.24%. The Jarque-Bera statistic reveals that two of the variables, specifically GDP and Private Domestic Investment, exhibit a normal distribution, whereas Private Domestic Investment and Interest Rate display significant skewness. Moreover, GDP exhibits a median value of ₦5,775.6. This observation suggests that during the analysed period, the GDP attained a remarkably elevated level.

Unit Root Test**Table 2: Unit Root Tests Analysis**

Variables	ADF test Statistics	Mackinnon critical vale @ 5%	No of the time difference	Remark
GDP	2.16347	-4.03626	I(1)	Stationary
INTR	-1.46388	-6.27565	I(1)	Stationary
INFL	-3.37695	-4.19943	I(1)	Stationary
PDI	3.27437	2.32379	I(1)	Stationary

Test for Co-Integration

After establishing the stationarity of all variables through first differencing, the subsequent course of action entails undertaking the Johansen co-integration procedure to determine the potential co-integration of GDP, INTRD, INFL, and PDI in a unified order. Therefore, the outcome of the examination is displayed in the form of a tabulated representation, specifically denoted as Table 3.

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

Null hypothesis	Alternative hypothesis	Eigen value	Likelihood ratio	Critical values 5%	Critical value 1%	Hypothesized No. of CE(s)
r=0	r=1	0.8454	86.2537	64.31	47.43	None
rd \leq 1	r=2	0.8036	78.4363	53.42	32.62	At most 1
rd \leq 2	r=3	0.7836	70.7139	33.36	27.31	At most 2
rd \leq 3	r=4	0.5474	24.5464	11.62	14.43	At most 3

**Table 4: Ordinary Least Square
Dependent Variable: GDP**

Method: Least Squares, Time:3:43				
Sample: 1998-2022				
Included observations: 25				
Date: 07/04/2023	Coefficient	Std. Error	t-Statistic	Prob.
C	1234.985	0.037845	1.503086	0.000001
Ln(INTR)	253.9666	0.002709	1.347699	0.260880
LN(INFL)	324.6663	0.243568	2.488678	0.199054
PDI	254.6836	0.003752	3.354769	0.000045
R-squared	0.602013	Mean dependent var		2536.480
Adjusted R-squared	0.559543	S.D. dependent var		354.3676
S.E. of regression	1223.865	Akaike info criterion		112.3251
Sum squared resid	378.3220	Schwarz criterion		124.6039
Log likelihood	123.1673	F-statistic		7.896857
Durbin-Watson stat	1.879687	Prob(F-statistic)		0.174575

The findings presented in Table 4 elucidate that the coefficient of determination, denoted as R² and quantified as 0.602013, signifies that approximately 60% of the fluctuations observed in the Nigerian economy can be comprehended through alterations in interest rate variables, namely INTR, INFL, and PDI, within the confines of Nigeria. This assertion suggests that a considerable proportion of the economy can be elucidated by variables pertaining to the determination of interest rates. Therefore, it can be deduced that the analysis demonstrates an F-statistic of 7.896857, indicating the influence of interest rate determination on the economy within Nigeria.

Furthermore, the accompanying probability value of 0.184675 surpasses the predetermined level of significance of 0.05. Consequently, it can be concluded that the observed effect lacks statistical significance. Consequently, the null hypothesis is duly acknowledged and embraced. It can be postulated that the determination of interest rates exerts a discernible adverse impact on the Nigerian economy within the confines of Nigeria. This assertion is further substantiated by the F-probability, which exhibits a statistically non-negligible value.

CONCLUSION AND RECOMMENDATIONS

The empirical findings of the study suggest that the impact of interest rates on the Nigerian economy is deemed to be inconsequential. The manifestation of this fact becomes apparent through the utilisation of the Ordinary Least Square, as denoted in Table 4. This observation suggests that the variables used to determine interest rates exhibit a lack of statistical significance when it comes to elucidating the factors influencing economic expansion in Nigeria. This finding aligns with the research conducted by Audula (2017), which demonstrates a lack of significant influence of interest rate policy on the expansion of Nigerian economy spanning from 1998 to 2016.

The study therefore proposes that it is imperative for the government and policymakers to prioritise the maintenance of inflation at a modest level, preferably in single digits, while simultaneously ensuring its stability. By doing so, they will effectively address the issue of inflation in the country. The formulation of interest rate policy ought to be structured in a manner that fosters the stimulation of savings, thereby augmenting the allocation of additional funds to financial institutions, which can then effectively facilitate the intermediation process for prospective investors in need of capital. The lending rate ought to be set at a level that is commensurate with the objective of not dissuading potential investors from procuring funds for the purpose of undertaking economically sound ventures within the broader framework of the economy.

The imperative for the government lies in the establishment of a propitious milieu for commercial activities, one that fosters the active engagement of both domestic and international entities in the realm of investment, thereby engendering a trajectory of economic expansion and advancement. The imperative lies with the Nigeria's apex bank to enact policies that foster the augmentation of investment funds and enhance the banks' ability to proffer funding to the economy. Monetary authorities ought to actively foster a climate of robust competition within the financial sector, thereby enhancing the efficacy of financial service provision within the broader economy.

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Appendix 1:

Interest Rate Variables and Gross Domestic Product in Nigeria (1998-2022)

Years	GDP at Current Market Price (₦-Billion)	Inflation Rate (%)	Interest Rate (%)	Private Domestic Investment (₦ Billion)
1998	3,989.45	10	18.29	488.15
1999	4,679.21	6.6	21.32	628.95
2000	6,713.57	6.9	17.98	878.46
2001	6,895.20	18.9	18.29	1,269.32

2002	7,795.76	12.9	24.85	1,505.96
2003	9,913.52	14	20.71	1,952.92
2004	11,411.07	10.1	19.18	2,131.82
2005	14,610.88	11.5	17.95	2,637.91
2006	18,564.59	8.6	17.26	3,797.91
2007	20,657.32	6.6	16.94	5,127.40
2008	24,296.33	15.1	15.14	8,008.20
2009	24,794.24	12.1	18.99	9,419.92
2000	54,204.80	11.8	17.59	11,034.94
2011	63,258.58	10.3	16.02	12,172.49
2012	71,186.53	12.2	16.79	13,895.39
2013	80,222.13	8.5	16.72	15,158.62
2014	83,193.463	8.1	16.55	17,680.52
2015	87,576.474	9.1	16.85	19,772.87
2016	94,144.960	18.6	16.87	19,988.30
2017	101,489.49	32.4	16.2	110,465.43
2018	120,365.53	17.3	16.2	132,364.39
2019	227,576.474	9.1	16.85	239,772.87
2020	244,144.960	18.6	16.87	256,988.30
2021	245,489.349	32.4	16.2	310,465.43
2022	253,320.253	17.3	16.2	432,364.39

Source: Central Bank Nigeria Statistical Bulletin, 2022.