

Impact of Interest Rate on Investment: A Case Study of Doing Business in Nigeria: 1991- 2021

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Abstract

This study explored how interest rates affect investments: A focus on ease of doing business in Nigeria: 1991-2021. It employs a time series of annual data on the following variables: Gross Fixed Capital Formation (GFCF) as a percentage of GDP, Ease of Doing Business (EDB), Interest rates (INTR), Monetary policy rate (MPR), and Savings Rate (SAVR) were extracted from diverse sources. The Phillips-Perron unit root technique was used to assess stationarity, while the Autoregressive Distributed Lag (ARDL) model was employed to examine the dynamic relationship between the variables' short-term and long-term effects in response to an external shock. The bound test provides evidence of a persistent correlation between the variables. In addition, the VAR Granger Causality test was conducted, and the findings suggest that there is a one-way causal relationship between ease of doing business with GFCF and INTR. The ARDL findings indicate that a change in interest rates leads to a 3.11 percent decrease in gross fixed capital formation over a period. Nevertheless, it holds statistical significance at a 5% level in elucidating the investment in Nigeria. Nevertheless, it was discovered that the monetary policy rate had a negligible effect on gross fixed capital formation. Nevertheless, there exists a direct correlation between Nigeria's rates of saving and the production of gross capital. Meanwhile, the Error Correction Term (ECT) value established a correction to disequilibrium among the variables. It shows a 31. percent speed of adjustment towards the equilibrium point. Thus, it is recommended that the government through the monetary authority implement effective and appropriate interest rate policies in the short run which can encourage more investment and capital assets to accelerate the growth of the economy. Also, there is a need for the government through the Nigerian Investment Promotion Commission (NIPC) to improve investment channels and environment through sensitivity and effective education on savings that improve the rate of investment to rate capital assets.

Keywords: Interest Rate, Investment, Doing Business, Nigeria, Ardl

Introduction

Several economists in recent years have pursued to explain the determinants of capital flows in the financial system. Accordingly, there are many components of the concept that provide explanations of the mechanism governing capital mobility within and across national boundaries. One of the key general frameworks for deregulation in Nigeria is the emancipation of the rate of interest (Obinna, 2020; El-Yaqub, Ibrahim & Sule, 2024). Globally, the interest rate is the major determinant of investment decisions in any economy. Interest rate is the price paid or the cost of borrowing and use of money (Mushtaq & Siddiqui, 2016, Umar, Mohammed & El-Yaqub, 2023). Similarly, it is the return paid to the supplier of financial funds and it plays an important role in the re-allocation of scarce financial resources to deficit units from surplus economic units to accelerate economic growth and development. Olaniyan (2020) stated that interest rate has underlying effects on the economy of any nation, either by increasing savings, impelling credit availability, or affecting the cost of capital.

In Nigeria, the policy of interest rates over the years has been inconsistent because of changes in government administration, issues of inflation, federal government policies, domestic and international financial markets crises, and changes in the prospects for medium and long-term growth decisions (Apere & Akarara, 2018). Macroeconomic instability and interest rate volatility in Nigeria have become an area of discussion among economists and policymakers. Structural reforms and interest rate policies remove restrictions on capital movement and liberalise Nigeria's financial market. Investment has been majorly in the Oil and Gas industry of the economy where approximately 5.8% of the country's gross domestic product (GDP) and more than 90% of foreign revenue, as well as 80% of Nigeria's budget income, is derived in 2019 (Nwuke, 2021).

The Central Bank of Nigeria, which serves as the monetary authority in the country, has increased the benchmark interest rate by 1.5 percentage points to 15.50 percent. The study indicates that this is the highest level observed since 2006 when the rate was created (CBN, 2022). An analysis of the interest rate framework spanning from 1999 to 2020 demonstrated that from 1999 to 2007, the lowest rediscount rate ranged from 6% to 9%. In 2012, the percentage decreased to 6%, then in 2013, it was subsequently increased to 11%. During the period from 2015 to 2018, the percentage fluctuated between 13% and 6%. The percentage decreased to 4% in 2019 but subsequently increased to 5% in 2020. In contrast, the rate of lending by commercial banks and the average amount of deposits between 1999 and 2007 were 7% and 10% respectively. In 2007, the interest rate for deposits was increased to 10%, but the interest rate for loans was decreased from 7% to 6%. The period from 2007 to 2010 witnessed an increase in lending and deposit rates, reaching 11% and 8% respectively. From 2011 to 2016, deposit rates had fluctuations ranging from 5.6% to 9%, while commercial bank loan rates exhibited variations between 10% and 9.4%. According to the National Bureau of Statistics (2021), the deposit rate in 2018 increased to 10%, while the prime and maximum lending rates were 11.5% and 12.75%, respectively.

From the provided historical data, it is evident that recurring revenues remained consistently low between 2000 and 2018, resulting in negligible money market rates. The implementation of a low-interest-rate policy led to a scenario where the demand for loans exceeded the available supply. This resulted in a high level of irrationality in the way resources were used and allocated (Obinna, 2020).

The World Bank's report (2021) states that the high interest rates in Nigeria's financial system reflect the inefficiency of its institutional framework and the lack of adequate infrastructure needed to reduce the risks associated with financing investments in a volatile economy. As Oladipo (2020) explains, the long-term impact of interest rates is to facilitate the flow of credit into the economy, benefiting financial institutions such as banks, insurance companies, corporate firms, and mutual funds. To promote economic growth and development, it is crucial to enhance business and investment conditions throughout Nigeria.

The optimal approach to facilitate business operations is to advocate for regulations that are efficient, transparent, and straightforward to execute, hence enabling investment and fostering the growth of enterprises (IMF, 2017). A high ranking in ease of doing business indicates that a country's legislative and regulatory environment is more advantageous for creating, operating, and expanding local businesses compared to other countries and previous years. Nigeria was placed 131st out of 190 countries in terms of ease of conducting business, as stated in a 2019 study by the World Bank. Consequently, it evaluates the advancement of laws and official procedures that uphold the operations of businesses in the formal sector (Ndukwe & Allison, 2021). Generally, the ease of doing business refers to the measurable indicators of institutional and government regulations related to various aspects such as starting a business, obtaining credit, dealing with construction permits, enforcing contracts, paying taxes, registering property, protecting minority investors, trading across borders, and resolving insolvency. Nigeria's heavy dependence on oil has resulted in inherent barriers that impede the achievement of consistent economic growth, job creation, and poverty eradication (Tristan, 2018).

Interest rates serve a crucial role worldwide, including in Nigeria, by facilitating savings and encouraging investment in the country. The utilisation of interest rates as stimulants for the mobilisation of savings and investment has proven to be ineffective in Nigeria (Adeleke, Uboh, & Shobande, 2015). The reason given for this is that the financial sector of the economy is now feeble. Before the implementation of the Structural Adjustment Programme (SAP) in 1986, the interest rate policy in Nigeria was typically determined by the monetary authority, with occasional modifications based on the authority's sectoral priorities. The monetary authority has implemented a special interest rate on loans or credit provided to key sectors of the economy (such as Service, Manufacturing, Agricultural, etc.) to stimulate investment and enhance productivity. This measure aims to facilitate feasible progress in economic growth (Ojima & Emeremini, 2015, El-Yaqub, 2021). The government, via the Central Bank of Nigeria (CBN), implemented regulations to control the prevailing interest rates to steer the economy towards economic growth in these crucial areas. According to Moyo & Le Roux (2018), this period is characterised as a time of financial domination, where government laws and regulations play a significant role.

It is evident that research work that empirically examines the link between interest rates and the level of investment is necessary. The purpose of this study is to analyse the impact of interest rates on investment in the ease of doing business in Nigeria, while also investigating any discrepancies in the long-term relationship between the two variables over 31 years. The study is structured into five sections; the first being an introduction, and the second being a literature review. Section three is dedicated to the examination of materials and techniques, while Section Four is dedicated to the exploration of data analysis and discoveries. Section 5 provides the final analysis and suggestions.

2.0 Literature Review

Interest rate is the rate at which the monetary authority lends to financial institutions. Alexandre (2014) defines interest rates as the reward a borrower charges a lender for funds or capital for a period. The term interest rate can be quite unclear to strangers to financial markets. Interest rates have several types, viz, bank rates, discount rates, government bond rates, based rates, deposit rates, nominal rates, coupon rates, etc. Despite how unclear the term interest rates can be, its importance to investment and savings cannot be overemphasized.

The interest rate is the price or rate paid by a borrower to the lender for the use of capital over time, divided by the cost borrowed. To the lender, the fee or rate paid compensates for the delay in consumption during the lending period. From the borrower's standpoint, expanding consumption and paying for this privilege (Alexander, 2014). The rate of interest facilitates the flow of funds from one entity to another; it represents the cost of borrowing and shows what a lender receives from the borrower in exchange for the usage of capital or money. It aids the movement of loans in an economy and helps financial institutions such as banks, insurance firms, corporate organizations, and mutual funds carry out their intermediation function. Similarly, economic activity in any country, considerably, is affected by the rate of interest. Consequently, interest rates affect the allocation and demand of loanable funds. Hence, the pattern and level of investment and consumption to an extent are affected (Borio & Gambocarta, 2017).

Low rates of interest encourage borrowing and economic activities in that the lower the rates of interest, the higher the profit expected (*ceteris paribus*) as borrowers are expected to pay a small part of the revenue as the cost of funds borrowed. High interest, conversely, discourages borrowing and thus, slows down economic activities. Therefore, the higher the rates of interest, the lower the profit margins (Odusanya, Yinusa, & Ilo, 2016; EL-Yaqub, 2021).

Theoretically, the basic principle of the neoclassical theory of the rate of interest as preached by Robertson (1953), on loanable funds is that savings and investment are the key determinants of long-term interest rates. According to Jhinghan (2017), demand and supply for marketable funds are equivalent to the price or cost of interest rates. The demand for loans for investments such as the purchase of capital equipment, plants, machinery, etc., depends on the projected profit rate compared to the interest rate. Ahuja (2013), concluded that demand is gratified by previous savings or savings and interest rates elasticity. Loanable funds see the rate of interest as a function of these variables: money supply, hoarding, investment, and savings.

In this study, we consider the application of the Keynesian theory of liquidity where he preached on the interest rate as a monetary phenomenon, especially in terms of speculative motive for investment and savings. The theoretical explanation of the nexus between the interest rate and investment level especially in doing business in Nigeria is further expanded using the demand for money and economic growth hypothesis developed by Tobin in 1965. His argument posits that monetary variables are the determining determinants of an economy's level of capital intensity. Keynes (1936) posited that higher interest rates diminish the desire for speculative investment in money, whereas lower interest rates amplify the desire for speculative investment. The concept of speculative demand for money can be mathematically represented as follows:

$$M_2 = L_2(i) \dots \dots \dots (1)$$

Where:

i = interest rate

L_2 = speculative demand for money

If the Central Bank of Nigeria (CBN) increases the money supply while keeping the liquidity preference constant, the interest rate will decrease. However, if the preference for holding liquid assets increases and the demand for money rises, assuming a constant money supply, the interest rate will increase.

Several empirical studies have been carried out, both within and outside of Nigeria, to examine the correlation between business operations and investment levels, along with other economic factors including interest rates and inflation rates. Acknowledging this objective is not inherent.

Gini (2021) examines the nexus between interest rates and portfolio investment in Nigeria using the ARDL technique after testing for stationarity and discovering a mixed level of stationarity. The result reveals that interest rates impacted portfolio investment in the short run positively and significantly. However, in the long run, there was a positive but no significant impact of interest rates on portfolio investment in Nigeria. Conclusively, the study found that factors influencing portfolio investment apart from interest rates in Nigeria are multi-dimensional.

Oladipo (2020) examines the rate of interest and economic growth as determinants of a firm's investment decisions in Nigeria, with a cointegration technique. The scope of the study covers a period of 31 years (1989-2019) and employed Autoregressive Distributed Lag (ARDL). Accordingly, the ECM result reveals a non-strong relationship between investment and interest rates in Nigeria.

Karimo (2020) analyses the influence of fluctuations in interest rates and exchange rates on the inflow of private capital from foreign sources in Nigeria during the period from 2010Q1 to 2019Q4. The study utilised a Markov Switching Time-Varying Transition Probability Model and the theory of interest rate parity. The results indicate that interest rates have a significant role in determining the flow of foreign portfolio investment (FPI). However, they do not have a significant impact on the overall movement of capital and foreign direct investment (FDI). The outcome illustrates the possibility of exploiting interest rate and currency differences in Nigeria as a result of the deviation from interest rate parity. Obinna (2020) provides a rationale for the impact of interest rate deregulation on the growth of investments in Nigeria from 1961 to 2017. The application utilised the Error Correction Model (ECM) and variance decomposition for the Vector Error Correction Model (VECM). The results indicated that the process of interest rate liberalisation did not have a significant effect on the levels of investment in Nigeria. Furthermore, there exists a weak and inconsequential correlation between prime lending rates and investment levels, both before and after liberalisation. In conclusion, the impact of private-sector credit and exchange rates on investment was not significant. However, government spending had a negative influence on investment, while GDP had a favourable influence.

Apere & Akarara (2018) examine the impact of interest rates on investment in doing business in Nigeria (35 years). The study adopted Johansen's Multivariate Cointegration and Error. The findings show the existence of a long-run relationship between investment and interest rates.

A 40% moderate adjustment by the ECM indicates correctness from the previous to the current year. Ojima (2015) examines the impact of interest rates on investment. The study employed an error correction mechanism (ECM). The findings show that there exists a negative relationship between high interest rates and investment. The conclusion suggested effective and relevant policies to reduce lending rates and encourage savings for both domestic and foreign investors. As well as an increment in household income and a conducive business environment to mobilize and boost investment.

Udude (2015) explores the effect of interest rates on savings in Nigeria's economy, between the period of 1981 to 2013. The ex post facto method adopted for the research was Vector Autoregressive (VAR). Savings (SAV), Interest rates (INT), and Gross Domestic Product (GDP) were the variables used in the study. The P-value of the logINT was less than a 5% level of significance indicating an insignificant impact of interest rates on savings. However, the findings uncovered that a 1 percent increase in interest rates will yield a 0.1 percent increase in savings. Likewise, the GDP shows a positive relationship with savings within the scope of study in Nigeria.

In their study, Wuhan, Li, and Adnad (2015) examine the impact of interest rates on investment in China. The research covers a period of ten years (2003-2012) and employs a Vector Error Correction Model (VECM) to identify a temporary correlation between the variables. The results indicate a positive connection in the short term, but a negative association in the long term, between interest rates and investment in Jiangsu Province, China.

3.0 Material and Methods

This study adopted the Quasi-experimental design because the study deals with time-series data. The secondary data collected on Gross fixed capital formation (GFCF), Interest rate (INTR) and Ease of doing business were sourced from the World Development Indicator (WDI), 2021 while the Monetary Policy rate (MPR) and Savings rate (SAVR) collected from Central Bank of Nigeria (CBN), 2021. The autoregressive distributed lag model (ARDL) technique was used after testing for stationarity and discovered a mixed level of stationarity (Asenahabi, 2019). Phillips-Perron (PP) unit root test and ARDL bound test were used to determine the stationarity status of the variables and cointegration among variables, respectively. Also, normality test, heteroscedasticity and stability were carried out. The secondary data used for the study were processed using E-view, version 10.

Model Specification

The study adapted the work of Apere & Akarara (2018) who examined the nexus between interest rates and investment decisions in Nigeria. The model applied in the study is of the form:

$$GFCF = f(INTR, MPR, SAVR) \dots \dots \dots (3.1)$$

The econometrics model is specified as follows:

$$GFCF = \alpha_0 + \alpha_1 INTR + \alpha_2 MPR + \alpha_3 SAVR + \mu \dots \dots \dots (3.2)$$

Where:

GFCF: Gross Fixed Capital Formation (Proxy for Investment)

INTR: Interest Rates

MPR: Monetary Policy Rates

SAVR: Savings Rates

α_0 : Intercept

α_1 - α_3 : Slope parameter

μ : Stochastic term

Moreover, to justify our third objective which evaluates the relationship between ease of doing business, interest rates, and investment in Nigeria, the Granger causality technique is employed. The specification is thus:

$$EDB_t = \alpha_0 + \alpha_{1,i} \sum_{i=1}^n EDB_{t-1} + \alpha_{2,i} \sum_{i=1}^n INTR_{t-1} + \alpha_{3,i} \sum_{i=1}^n GFCF_{t-1} + \mu_t \dots (3.4)$$

Where:

EDB: Ease of Doing Business

i = is the lag length

Variable Measurement and Discussion

Gross fixed capital formation (GFCF) is a metric that quantifies the amount of investment taking place inside an economy. According to the Organisation for Economic Cooperation and Development (OECD, 2022), it is defined as the net increase in assets after subtracting disposals. INTR: The interest rate is a measure of the percentage gain that a lender obtains for deferring the usage of resources to a future date. Similarly, it evaluates the expense that a borrower incurs to obtain resources in the present. Monetary policy refers to the deliberate control of the money supply by the monetary and fiscal authorities to achieve specific economic objectives (Nuhu, 2015).

As of May 2021, the monetary authority publication reveals that the monetary policy rate (MPR) was 11.5%. This shows a constant of equal percentage from the previous month (April), because of the unanimous decision of the monetary authority to put a benchmark of the MPR at 11.50 percent as this action was to tame the rising inflation rate in the country (CBN, 2021).

SAVR: Savings rates depict net savings i.e., the percentage of savings of gross domestic product after depreciation. EDB: Ease of doing business shows how the business environment of an economy is conducive for investors, businesses, and firms. The World Bank Development Indicators (WDI) report on EDB annually either by rank or score.

4.0 Analysis and Discussion of Results

The study employed annual time series data covering a period of 31 years with annual time series data of Gross Fixed Capital Formation (GFCF) as a percentage of GDP, Ease of Doing Business (EDB) Interest rates (INTR), Monetary policy rate (MPR), and Savings Rate in Nigeria between the periods of 1991 to 2021.

Descriptive Statistic

Table 1

	GFCF	EDB	INTR	MPR	SAVR
Mean	27.50581	133.4516	7.644236	13.50000	8.491215
Median	26.16650	131.0000	7.479167	13.50000	6.763411
Maximum	48.40018	170.0000	11.06417	26.00000	14.56663
Minimum	14.16873	120.0000	3.268333	6.000000	3.291754
Std. Dev.	10.62355	14.39407	1.626114	3.797477	3.759123
Skewness	0.302242	1.456903	-0.136548	0.921276	0.195880
Kurtosis	1.834497	4.409239	3.639861	5.665462	1.443091
Jarque-Bera	2.226574	13.53179	0.625172	13.56209	3.329195
Probability	0.328477	0.001152	0.731553	0.001135	0.189267
Sum	852.6800	4137.000	236.9713	418.5000	263.2277
Sum Sq. Dev.	3385.795	6215.677	79.32740	432.6250	423.9301
Observations	31	31	31	31	31

Source: Author's compilation, Eviews 10, 2023.

Table 1 presents descriptive statistics for the variables Gross Fixed Capital Formation (GFCF), Interest Rate (INTR), Monetary Policy Rate (MPR), Saving Rate (SAVR), and Ease of Doing Business (EDB). The statistics include the mean, median, maximum value, minimum value, standard deviation, skewness, kurtosis, Jarque-Bera, sum, and sum square deviation. It has been demonstrated that all of the variables being studied had a total of 31 observations. EDB has the highest level of volatility, as indicated by its standard deviation, whilst INTR demonstrates the lowest level of volatility. The results indicate that all variables exhibit a favourable skewness towards normality, except for the interest rate, which displays a negative skew.

The kurtosis, a measure of distribution shape, indicates that the ease of doing business, interest rate, and monetary policy rate have leptokurtic distributions, meaning they are more peaked compared to a normal distribution. On the other hand, gross fixed capital formation and savings rate have platykurtic distributions, indicating that they are flatter compared to a normal distribution. The Jarque-Bera (prob.) statistics indicate that all variables, except for ease of doing business and monetary policy rate, were normally distributed at a significance level of 5%.

Unit Root Test

Table 2 Phillips-Perron Unit Root Test

Variable	Level Form		First Difference		Order of Integration
	PP-Test	5% critical value	PP-Test	5% critical value	
GFCF	-2.27	-3.56	-4.14	-3.57	I(1)
INTR	-3.94	-3.56	-	-	I(0)
MPR	-3.48	-3.56	-8.14	-3.57	I(1)
SAVR	-2.27	-3.56	-4.94	-3.57	I(1)
EDB	-1.98	-3.56	-5.51	-3.57	I(1)

Source: Author’s compilation, Eviews 10, 2023.

The results of the Phillips-Perron unit root test for Table 2 indicate that, with a significance level of 5%, the data series for Gross Fixed Capital Formation (GFCF), Monetary Policy Rates (MPR), Savings Rate (SAVR), and Ease of Doing Business (EDB) are all stationary at the first difference, meaning they are integrated of order one, I(1). While the interest rate (INTR) remained constant at the level of integration of order zero, I(0). Once the stationarity level of the variables has been determined, we proceed to estimate the parameters of the necessary model to examine their impact on the dependent variable. In this investigation, the ARDL technique will be employed because of its ability to estimate variables with different levels of stationarity.

Autoregressive Distributed Lag (ARDL) Bound Test

Table 3 ARDL Bound Cointegration Result

		Critical Value	Lower Bound	Upper Bound
F-statistic	4.79	10%	2.37	3.2
K	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66

Source: Author’s compilation, Eviews 10, 2023.

The ARDL Bound Cointegration result in Table 3 shows that the calculated F-statistics of 4.79 is greater than the lower and upper bound critical values of the bond test procedure. This means the alternative hypothesis of cointegration between the rate of interest and level of investment in Nigeria is accepted both at 1%, 5%, and 10% significance levels; therefore, there exists a long-run relationship (co-integration) among the variables. Accordingly, the outcome confirms a necessary condition for appropriating the Autoregressive Distributed Lag.

ARDL Long Run Result

Table 4: ARDL (1,1,2,2)

Variable	Coefficient	Std. Error	t-Statistic	Probability**
C	8.53	12.38	0.69	0.51
GFCF(-1)*	0.31	0.12	2.48	0.03
INTR(-1)	-3.11	1.45	-2.14	0.05
MPR(-1)	-0.12	0.32	-0.38	0.71
SAVR(-1)	1.23	0.30	4.03	0.00

Source: Author's compilation, Eviews 10, 2023.

ARDL ECM

**Table 5: ARDL Error Correction Model Result
 Dependent Variable: GFCF**

Variable	Coefficient	Std. Error	t-Statistic	Probability**
D(INTR)	-1.28	0.37	-3.47	0.00
D(MPR)	0.95	0.18	5.22	0.00
D(SAVR)	2.19	0.41	5.36	0.00
CointEq(-1)*	-0.31	0.05	-5.56	0.00
R-squared	0.86			
Adj. R-squared	0.71			
Durbin-Watson	2.82			

Source: Author's compilation, Eviews 10, 2023.

The ARDL Error Correction Model coefficients in Table 5 show that interest rate (INTR) which is the key variable of this study has a significant but negative effect on gross fixed capital investment (GFCF, proxied for Investment). The coefficients display that at zero lag, a 1% change in interest rate (INTR) leads to a 5.58% decrease in GFCF. Moreover, there is a negative impact on interest rates in the long run (See Table 5)

Table 4 presents the long-run relationship between the Monetary policy rate (MPR) and GFCF with a negative coefficient (-0.12). However, MPR has a significant positive effect on fixed capital investment (GFCF) at one lag in the short run. A percentage change in MPR will lead to a 0.96% increase in GFCF. The probability value indicates the acceptance of the alternative hypothesis at a 0.05 level of significance. However, it has a negative and insignificant effect at lag three (See Table 4.). Savings rate (SAVR) has a significant positive effect on PI in the long run and short run.

Table 5 of the ECM model depicts a 1% increase in SAVR leads to a 2.19% increase in GFCF. Moreover, we accept the alternative and reject the null hypothesis at a 0.05 significance level.

The Error correction term shows that 30% of deviations of Gross fixed capital formation (GFCF, Investment) from its equilibrium value due to variations in the independent variables of the estimated model are corrected annually.

The coefficient of determination and its adjusted factor (R-square and Adjusted R-squared) show that approximately 86% and 71% of the changes, respectively in GFCF are explained by all the explanatory variables of the model. The F statistics (Probability) of the evaluated model reveal that although some variables in the model (some lag level) are not significant in clarifying variations in the dependent variable, all the independent variables are jointly significant in explaining changes in the level of investment in Nigeria. The evaluated model of the Durbin-Watson test is 2.82 indicating the presence of negative serial correlation.

Diagnosics Tests

Table 6: Heteroscedasticity and Serial Correlation Test

Normality	Jargue-Bera	Prob.
	0.410561	0.84419
Heteroscedasticity Test	F-Statistics	Prob.
Breusch-Godfrey F(17,9)	0.547956	0.8635

Source: Author's compilation, Eviews 10, 2023.

Table 4.2.3 presents the results of the diagnostic tests conducted on the ARDL regression model to assess the dependability of the predicted parameter coefficients. The estimated model successfully passes the heteroskedasticity test as the p-value of the Chi-squared test is greater than 0.05. Consequently, the model demonstrates a normality test of the residuals. The p-value of the Jarque-Bera test is 0.81, indicating that it is statistically significant at a significance level of 0.05. Therefore, we can deduce that our residual series exhibits a normal distribution.

Granger Causality Test

Table 7: VAR Granger Causality Tests

Dependent variable: EDB			
Excluded	Chi-squared	DF	Probability
GFCF	1.020231	2	0.0504
INTR	0.787736	2	0.6744
All	1.939961	4	0.7468

Source: Author's compilation, Eviews 10, 2023.

Finally, we ascertained the direction of causation between Ease of Doing level of investment, and interest rate. Table 7 employed VAR Granger Causality with a lag of two, which was chosen based on the Schwartz Criterion. The causality test result shows that there is a unidirectional (one-way) causality that runs from EDB to GFCF and INTR. The null hypothesis that EDB does granger cause GFCF is rejected at 5% and 10% levels of significance, but does

not granger cause INTR at 1%, 5%, and 10% levels of significance. Thus, this indicates the absence of causation between ease of doing business and interest rates.

Discussion of Results

The ARDL output of the long run and short run revealed the relationship between interest rates and the level of investment in Nigeria improved the financial turbulence, especially during an inflationary pressured season. The Central Bank of Nigeria (CBN) adjusted the interest rate to boost investment and monetary stability in a measure that will improve and encourage economic growth (Central Bank of Nigeria, 2021). The interest rate output of the ARDL-ECM implies that a high interest rate discourages capital asset investment (GFCF) but encourages savings in the short run. This perspective can be associated with the Keynesian theory of liquidity preference (Ayodeji and Oluwole, 2018), which posits that elevated interest rates encourage savings, leading to increased investment and ultimately enhancing the economy's productivity and output in the long run. The influx of government expenditure into the economy, namely in fixed asset investment such as roads and railroads, as measured by the Gross Fixed Capital Formation (GFCF), would contribute to the overall economic growth of Nigeria.

Furthermore, our expectation in doing business in Nigeria, is that ease of doing business in Nigeria should cause or affect the level of investment. For example, a constant supply of electricity and water will spur business activities in all sectors of the economy. However, our findings expose that ease of doing does not Granger cause interest rates, which means our findings do not follow our A priori expectation, therefore, we submit that the ease of doing business and gross capital investment have a significant relationship but do have a significant relationship with real interest rate in Nigeria.

5.0 Conclusion and Recommendations

The results indicate that interest rates (INTR) influence the level of investment (a measure of gross fixed capital formation) in the Nigerian economy, both in the short and long run. The central bank can optimise interest rates to stimulate higher levels of investment. Nevertheless, it is crucial to implement these policies in alignment with the prevailing economic conditions; otherwise, they may have adverse effects on the economy. The interest rate diminishes the rate of growth of capital investment, aligning with prior findings. Increased investment demand will lead to long-term changes in capital assets, ultimately resulting in a rise in interest rates. This phenomenon arises since an increase in income leads to a higher demand for money. Since the supply of money remains unchanged, the interest rate must increase to restore balance in the money market.

Moreover, the responsiveness of investment to changes in savings rates (SAVR) in Nigeria is advantageous in both the short and long term. An innovative policy can serve as a strategy to promote investment from both the public and private sectors. More specifically, an increase in savings will enhance market opportunities for enterprises and commodities, enabling investors, firms, and government capital formation to become more effective and lucrative in the future.

This study demonstrated a unique connection between the ease of conducting business in Nigeria and economic investments. The analysis found a one-way causation between the variables. Various theories have been put out to elucidate the significant and beneficial influence of the ease of doing business on investment growth in Nigeria, both in the short and long run (Nageri, 2020). The paper recommends more research to explore the impact of

business ease on investment levels and interest rates. After conducting an assessment of the impact of interest rates on investment levels and specifically examining the economic environment in Nigeria, the following suggestions were put forward:

- i. The government through the monetary authority should ensure to make effective interest rate policies in the short run which can encourage more investment and capital assets to accelerate the growth of the economy.
- ii. There is a need for the government through the Nigerian Investment Promotion Commission (NIPC) to improve investment channels and the environment through sensitivity and effective education on savings that improve the rate of investment to rate capital assets.
- iii. The Security and Exchange Commission (SEC) needs to critically investigate investment and business activities to adjust to capital markets to improve the listing of companies and should improve on the basic infrastructure such as electricity supply.

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