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Original Article

Examining the Determinants of Investment in Nigeria

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Abstract: *Investment is a major factor in boosting economic growth, especially in emerging nations. Developed countries have been able to reach their current level of development due to sustainable investments in the critical sectors of their economies. However, there are influencing factors behind sustainable investments. Using data from 1981 through 2022, this study sought to uncover some of the key factors influencing investment in Nigeria. Using the Johansen cointegration approach, the study's findings demonstrated a long-term relationship between investment and lending interest rates, real gross domestic product, gross domestic savings, and foreign direct investment. According to the report, in order to further promote local investment, the monetary authorities should see to it that lending rates are stabilised and lowered. Steady and sustainable growth of the economy is also essential for sustainable investment and therefore the government is recommended to provide the environment for sustainable growth of the economy.*

Keywords: *Investment, Lending Rate, Foreign Direct Investment, Cointegration, Gross Domestic Savings.*

I. INTRODUCTION

Investment is a crucial element required for a country's economic development and prosperity. It is the driving force behind economic expansion and one of the most crucial tools for eradicating poverty. It increases the nation's capacity for production and opens up employment opportunities for a large number of individuals. One of the most important aspects of investment is private investment, in which businesses generate goods and services with the dual objectives of maximising profits and bolstering the national economy. One of the main characteristics that separate industrialised countries from emerging ones is the rate of investment. Investment levels are higher in nations with high economic growth than in those with poor economic growth. Low investment has the effect of preventing the economy's productive potential from growing. As a result, development and job creation are slower, and there are less opportunities for the poor to improve their standard of living (White, 2005). Sackey (2007) argues that countries with excellent living standards are those whose economies have transitioned from being traditional and sparsely diverse to becoming more diverse. The key concern in the structural diversification process is investment commitment.

An economy's ability to function, whether it is developed or undeveloped, depends on investment. The majority of economies experience economic growth as a result of investment. In order to boost high productivity, innovation, employment levels, living standards, reduce poverty rates, and ultimately accelerate economic growth, governments around the world including those in Nigeria are taking action to encourage investment (Ayeni, 2014). Investment in a variety of economic sectors raises demand for goods and services, which improves government revenue for the purchase of vital agricultural and industrial inputs for any economy's growth and development. This enhances overall employment output and income. This implies that the investment multiplier raises national income, which in turn raises aggregate demand and saves for investment. The mainstay of any country's economic development is investment. According to Ajakaiye (2002), Nigeria is classified as having low savings and even lower investment levels. This fact is the basis for one of the key objectives of the Nigerian government, which is to support an environment that fosters sustained economic growth. A balance between investment and other factors that influence investment is necessary for the stimulation of sustainable economic growth. All those worried about the development of the nation are alarmed by the erratic conduct of investment in Nigeria. The economy's main challenge appears to be the low level of investment. The threat continues despite several attempts by the Nigerian government to address it through policies. Johnson (2002) claims that while previous administrations have tried methods and programmes to increase investment, these actions have been inconsistent thus far. However, it has been shown that one of the main issues is that the government is so preoccupied with programmes to encourage investment that it lacks understanding of or research into the factors that influence investment (Ajaikaiye, 2002).

Investment choices affect an economy's growth and development over the long term, whether they are done wisely or incorrectly. The macroeconomic factors that influence investments in the Nigerian economy must be carefully examined.

The study's significance comes in the fact that it sheds light on the primary factors influencing investment in Nigeria. This research seeks to help the government and private enterprises understand the significant elements that impact investment in Nigeria because investment is an essential part of growth. The study serves as a reference for formulating policy, particularly with relation to investment and the factors that influence it in Nigeria.

This study aimed to address the following questions in this regard: What are the main factors affecting investment in Nigeria? Does Nigeria's interest rate have a long-term link with its domestic savings, foreign direct investment, real gross domestic product, and investment? The following goals were proposed as answers to these queries: to investigate the key factors influencing investment in Nigeria. to investigate the long-term relationships among Nigeria's interest rate, domestic savings, foreign direct investment, real gross domestic product, and investment. This analysis uses yearly time series data from 1981 through 2022 to find the key factors influencing investment in Nigeria.

II. LITERATURE REVIEW

The neoclassical idea of the optimal accumulation of capital provides theoretical support for the neoclassical theory of investment. We won't even try to describe the concept because it is lengthy and exceedingly mathematical. Instead, we'll quickly go over the study's main findings and how they affect policy. The optimum capital stock, according to the neoclassical approach, depends on output and the cost of capital services in relation to the cost of production. The cost of capital services is influenced by the cost of capital products, interest rates, and taxes of corporate earnings. Investment is consequently impacted by changes in the necessary capital stock as well as the cost of capital services in relation to the cost of output. Similar to the accelerator concept, output determines the required capital stock. Thus, through impacting aggregate demand and output, changes in personal income tax rates or increases in government expenditure boost investment. The tax treatment of business income is crucial, much like the internal funds idea. The neoclassical perspective, however, argues that corporation taxes are important due to their effect on the price of capital services rather than how they influence the availability of internal money. However, the required capital stock and, subsequently, investment are impacted by legislation meant to alter how firm income is taxed.

Contrary to the accelerator theory and the internal funds theory, the interest rate is a determinant in determining the optimum capital stock. Therefore, monetary policy has the power to change the desirable capital stock and investment through its impact on interest rates. For the accelerator and internal funds assumptions, this was not the case. The rate of investment is determined by how quickly businesses increase or decrease their capital stock to the appropriate level, in accordance with the neoclassical theory of company fixed investment. The company may anticipate producing greater output at a lower rental or user cost of capital if the required capital stock is larger.

Of all the variables that affect investment decisions or corporate investment practises, macroeconomic variables like the real interest rate, inflation rate, and real exchange rate are possibly the most significant (Oshikoya, 1994). This is related to the fact that how firms operate when it comes to investing is greatly influenced by changes in macroeconomic conditions. In this case, instability may make it harder to decide on an investment, which is negative. A very unpredictable inflation rate, on the other hand, fosters uncertainty and acts as an expectation variable that discourages investment, even while it may make waiting more profitable and lead to investment being postponed. On the other hand, fluctuations in the real exchange rate may affect the success of firms that focus on exporting as well as the expense of sending money abroad for domestic businesses (TIPS, 2000).

There are various types of investment-related considerations. The loan rate, domestic savings, economic expansion, foreign direct investment, inflation rate, interest rate, and exchange rate are a few examples of these variables. Although some inflation is necessary for businesses to operate profitably in a nation, high inflation rates signal macroeconomic instability and hurt private investment. According to Oshikoya (1994), excessive lending rates discourage private investment in emerging nations. Depreciation of money's worth reduces its value and discourages saving, which lowers the economy's saving rate and increases the amount of investable funds that are available for investment. Everyone worried about Nigeria's future is alarmed by the investment market's erratic behaviour. The primary issue facing the economy appears to be the low level of investment. The Nigerian government has made various efforts to address the problem via policies, yet it still exists. Although earlier governments attempted various strategies and initiatives to boost investment, according to Johnson (2002), these efforts have so far been uneven. However, research has indicated that a fundamental problem is that the government is unduly focused on encouraging investment without understanding or investigating the reasons for investment (Ajaikaiye, 2002).

The element of total effective demand that is the most variable and has a tendency to vary the most is investment (Anushree, 2019; Hassett, 2020). This could be as a result of the basic variables that affect investment, such as interest rates, capital expenses, and predicted returns. On the other hand, a little change in investment often results in far larger changes in the volume of output, employment, and other macroeconomic indices. The economic policies of the government are usually

significantly impacted by these developments (Ghassemi, 1996). It seems that this knowledge was possibly responsible for the surge in research on the major elements that drive investment levels in nations (Ojong, Ogar, & Arikpo, 2018; Agbarakwe, 2019), even if government policy efforts designed to raise domestic investment often fail. However, there are a number of additional factors that contribute to instability and may have a negative impact on investors' choices in addition to macroeconomic factors. Conflict, the need for infrastructure, financial worries, variances in the availability of fundamental industrial commodities globally, variations in the nature of international trade and rivalry, and technical advancements are a few of them (Bernake, 1983).

It has been shown theoretically that investment is effected by a number of transmission mechanisms. The relationship between investment and the factors impacting it has been the subject of many empirical research. Duruchi and Ojiegbe (2015) revealed that government expenditure and investment have a one-way causal link and that the short-term investment imbalance may be corrected at a rate of 67% annually, according to the error correction model (ECM). They show that expenditure by the government significantly affects investment in Nigeria. Agwu (2015) carried out an econometric study to examine the variables affecting investment in Nigeria. The Autoregressive Distributed lag model (ARDL) was employed in the study to estimate the variable coefficients in both the long and short runs. The long-term findings indicate that previous income level, capital investment, government size, and interest rate are the primary factors influencing domestic investment in Nigeria. Exchange rates and inflation have little impact on private investment in Nigeria, and the researcher contends that in order to increase and improve the level of investment in the nation, interest rates should be lowered and consistent policies should be put in place.

The Granger Causality test and Johansen Co-integration were used by Omoke and Ugwuanyi (2010) to investigate the connection between Nigerian inflation, money supply, and investment. The results suggest that larger levels of investment may be supported by price stability. Real output, inflation, exchange rates, and monetary aggregates all have a big impact on investment, the research finds. The optimum amount of investment was determined by this research without taking into consideration government expenditures. Patience and Osaro (2010) examined Nigeria's trade dynamics and investment-related issues. Using the cointegration technique, it was discovered that the historical performance of domestic investment in Nigeria has a significant impact on the current level of investment, demonstrating that market fundamentals do not favour domestic investment. Olusegun (2010) found from long term estimate that a well-structured and stable socio-economic environment will promote domestic investment over the long run in his examination of the role of government in explaining domestic investment in Nigeria.

Enang (2010) found that lending to the private sector was a key element in promoting private investment in his empirical analysis on macroeconomic changes, the size of the government, and investment behaviour in Nigeria. Mouyiwa (2005) used a panel co-integration method and a variance decomposition to examine the relationship between investment and inflation. The study's findings revealed a conflict between investment and inflation rates. Chete and Akpokodji (1999) discovered that public investment, inflation, the real exchange rate, and domestic loans to the private sector all had an effect on private investment in Nigeria in addition to private inflows of foreign capital.

Iyoha (1998) found that the debt overhang variable, return on investment, foreign currency premium, and state investment all had a substantial impact on private investment in Nigeria. In their study of the factors affecting private investment, Ariyo and Raheem (1991) discovered that interest rates, domestic loans to the private sector, GDP growth rates, and public investment all had a favourable effect.

III. METHODOLOGY

The factors of investment in Nigeria are examined in this study using annual time series data. The World Development Indicator published by the World Bank and the Central Bank of Nigeria (CBN) statistical bulletin were used as secondary sources to get the necessary data. Data were collected on investment (fixed capital formation), gross domestic products at constant price, lending rates, gross domestic savings and foreign direct investment in Nigeria from 1981 to 2022.

The goal of economic modelling is to depict the phenomenon under study in a way that makes it possible for the researcher to give the concept a numerical value. The model below of the factors affecting investment in Nigeria has been established. The following is the functional relationship between the factors affecting investment:

INV = f (RGDP, INR, GDS, FDI)
Where INV is the investment (proxy of fixed capital formation)
RGDP is the real gross domestic products at constant price
INR = interest rate (lending rate)
GDS = gross domestic savings
FDI = foreign direct investment

The following is the log-linear relationship representation of the econometric model of investment determinants:

$$\ln\text{INV}_t = \beta_0 + \beta_1 lnRGDP_t + \beta_2 lnINR_t + \beta_3 lnGDS_t + \beta_4 lnFDI_t + e_t$$

where $\beta_0, \beta_1, \beta_2, \beta_3 \; and \; \beta_4$ are parameters to be estimated and e is the error term.

The determinants of investment in Nigeria are examined in this study using the descriptive, correlational, Augment Dickey Fuller (ADF), and Johansen cointegration techniques. The summary statistics of the variables, including the mean, median, mode, standard deviation, Jarque-Bera statistic, and minimum and maximum values, are provided by the descriptive analysis. While the ADF is used to assess the stationarity of the data, correlation analysis shows the linear relationship between the variables. In order to investigate the evidence of a long-term link between the variables, the Johansen cointegration approach is used.

IV. RESULTS AND DISCUSSION

The summary statistics for the variable utilised in this investigation are shown in Table 1. Based on the summary result the average investment. ₦49.1 billion**,** average lending rate is 17.61%, the average domestic saving is ₦58.2 billion, the average FDI is ₦2.520 billion, the average RGDP is ₦2.53 trillion. The maximum INV is ₦1.4 trillion, the maximum lending rate is 31.65%, the maximum GDS is ₦15.1 trillion, the maximum FDI is ₦88.4 billion and RGDP is ₦50.3 trillion.

Table 1: Summary of Statistics of the Determinant of Investment

	INV	INTR	GDS	FDI	RGDP
Mean	4.91E+10	17.60646	5.82E+10	2.52E+09	2.53E+11
Media	3.70E+10	17.55333	4.58E+10	1.35E+09	1.77E+11
Maximum	1.47E+11	31.65000	1.51E+11	8.84E+09	5.03E+11
Minimum	1.23E+10	8.916667	1.41E+10	1.89E+08	1.13E+11
Std. Dev.	3.20E+10	4.793755	3.76E+10	2.60E+09	1.36E+11
Skewness	1.131692	0.245573	0.868783	1.149932	0.702564
Kurtosis	3.954050	3.752934	2.730491	3.070365	1.930168
Jarque-Bera	9.803814	1.313218	5.024129	8.603279	5.068256
Probability	0.007432	0.518607	0.081101	0.013546	0.079331
Sum	1.91E+12	690.1618	2.27E+12	9.81E+10	9.88E+12
Sum Sq. Dev.	3.90E+22	873.2433	5.38E+22	2.57E+20	7.00E+23
Observations	41	41	41	41	41

Source: *author's computation using Eviews 10*

The minimum INV is ₦12.3 billion, the minimum lending rate is 8.91%, the minimum GDS is ₦14.1 billion, the minimum FDI is ₦18.9 million and the minimum RGDP is ₦11.3 trillion.

Based on the skewness, kurtosis and Jarque-Bera statistics, variable such as INTR, GDS, and RGDP are normally distributed**.**

The results of correlation between investment and the determinants table 2 below.

Table 2: Results of Correlation between Investment and the Determinants

Correlation	INV	INTR	GDS	FDI	RGDP
INV	1.000000				
INTR	-0.670445	1.000000			
GDS	0.957287	-0.600607	1.000000		
FDI	0.403239	0.083401	0.521053	1.000000	
RGDP	0.455668	0.066802	0.471862	0.771862	1.000000

Source: *author's computation using Eviews 10*

Interest rate has negative relationship with investment if interest rate increase, investment decrease GDS has positive relationship with investment, FDI has positive relationship with investment, RGDP has positive relationship with investment. GDS has negative correlation with interest rate because if interest rate is high GDS will be low. GDS has no correlation with FDI.

Table 3: ADF UNIT ROOT TEST RESULTS

Variable	ADF Statistics		5 %critical value		P-value		Order of integration
	Level	1st Difference	Level	1st difference	Level	1st difference	
INV	0.213291	-4.141543	-2.9458	-2.945842	0.9697	0.0026	I (1)
INTR	-2.44198	-5.351568	-2.9389	-2.943427	0.1373	0.0001	I (1)
GDS	-1.50900	-7.151772	-2.9571	-2.941145	0.5163	0.0000	I(1)

FDI	-1.52271	-7.140008	-2.9411	-2.943427	0.5115	0.0000	I(1)
RGDP	-1.97089	-1.980795	-2.9807	-1.949856	0.2977	0.0467	I(1)

Source: *author's computation using Eviews 10*

The results of the ADF unit root test are shown in Table 3, where all the variables were initially nonstationary before becoming stationary. The long-term relationship between the variables was therefore determined using the Johansen cointegration method in accordance with the criterion of Johansen cointegration that all variables should be integrated of order one (1) and be integrated of the same order. Table 4 displays the Johansen cointegration's outcome.

Table 4: Result of Johansen Cointegration Test for Long Run Relationship

Variables: LINV LRGDP LGDS LFDI INTR					
Unrestricted Cointegration Rank Test					
Trace Test			**Maximum Eigenvalue Test**		
Trace Statistic	0.05 critical value	P- value	Max- Eigen Statistics	0.05 critical value	P-value
121.6678	69.81889	0.0000	52.82123	33.87687	0.0001
68.84652	47.85613	0.0002	33.91744	27.58434	0.0067
34.92908	29.79707	0.0117	20.77783	21,13162	0.0560
14.15125	15.49471	0.0789	12.21204	14.26460	0.1029
1.939203	3.841466	0.1638	1,939203	3.841466	0.1638

Source: *author's computation using Eviews 10. Note: Trace test indicates 3 cointegrating equations while maximum Eigenvalue indicates 2 cointegrating equations.*

To ascertain the long-term relationship between the variables in this study, a cointegration test has been carried out using the Johansen cointegration approach. The cointegration test result is shown in table 4 above.

The trace test shows evidence of three (3) cointegration equations based on the results in Table 4. This suggests that interest rates, investment, real GDP, gross domestic savings, and foreign direct investment are all related over the long term. The first three rows' trace statistics exceed the 5% crucial values and their probability values are less than 0.05, demonstrating the existence of this link.

Maximum Eigenvalue denotes two cointegrating equations in a similar manner. This is so because the probability values for the first two rows' Max-Eigen statistics are less than 0.05 and they are bigger than 5% crucial levels. This demonstrates that investment, real GDP, gross domestic savings, foreign direct investment, and interest rates are all related over the long term.

V. CONCLUSION AND POLICY RECOMMENDATIONS

This study analyses annual time series data from 1981 to 2019 to assess the factors influencing investment in Nigeria. The study's basic goal was to evaluate the factors that influence investment in Nigeria, and its specific goals were to ascertain the correlation and long-term relationship between investment and its factors.

The study looks at the factors that influence investment in Nigeria using descriptive analysis, correlation analysis, and cointegration analysis. All of the variables have been discovered to be integrated of order 1 based on the stationarity test. According to the study's findings, investments have a long-term association with RGDP, FDI, interest rates, and gross domestic savings. The correlation analysis's findings that the interest rate (also known as the loan rate) has a negative relationship with investment are consistent with the idea. On the other hand, it has been discovered that investment has a positive linear relationship with foreign direct investment, gross domestic savings, and RGDP. Following a review of the factors influencing investment in Nigeria between 1981 and 2019, it was discovered that RGDP, gross domestic product, FDI, and interest rates are reliable indicators of investment. While the rest of the variables have a direct link with investment, the lending rate has a negative association with it, which is consistent with theory. According to the cointegration analysis, investment in Nigeria has a long-term link with FDI, RGDP, gross domestic savings, and interest.

According to this study, monetary authorities should make sure that prices and the naira are stable. Also, reducing lending rate will help in boosting investment in Nigeria and therefore authority should ensure that lending rates are reviewed to favour investors so that more investments can be undertaken to boost national output. Measures and efforts should also be intensified to ensure sustainable growth of the entire economy because growth of the economy is associated with increase in investment.

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