



Effect of Macroeconomic Determinants on Private Sector Investments in Nigeria, 1986-2020

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ABSTRACT

The main objective of the study is to appraise the effect of macroeconomic determinants on Private Sector Investments in Nigeria from. Specifically, the study sought to investigate the effect of Interest Rate on Private Sector Investments in Nigeria, ascertain the impact of Money supply (MS) on Private sector investments in Nigeria, determine the effect of Exchange Rate on Private sector Investments in Nigeria, and ascertain the relationship between inflation rate and Private Sector Investments in Nigeria. The data was obtained from Central Bank of Nigeria (CBN) Statistical Bulletin and Debt Management Office (DMO) in Nigeria covering the period of 1986 through 2020. The work employed ex-post facto design method. In line with empirical principles, Ordinary Least Square (OLS) econometric technique was adopted to examine the major effects of macroeconomic determinants on Private Sector Investments in Nigeria. The dependent variable is Private Sector Investment while proxies for macroeconomic determinants variables are Interest Rate, Money Supply, Exchange Rate and Inflation rate. The results show among others that Interest Rate has a positive and non-significant effect on private sector investment in Nigeria over the period 1986-2020. The study recommends among others Since Interest Rate has significant influence on private investment in Nigeria, commercial banks should be advised by the regulatory body to inculcate the habit of boosting private savings and the deposit rate so as to increase the level of lending to the private sector. For sufficient economic growth and sustainability of Nigeria's economy, monetary authorities and government should lower the lending rate, so that local investors especially small and scale entrepreneurs can have easy access to loan facilities from banks.

Keywords: Money Supply; Debt Management Office; Macroeconomic Determinants; Private sector Investment

1. Introduction

Private sector investment is an indisputably powerful means for sustainable economic growth and development especially in emerging economies such as Nigeria. Private investment in Nigeria has been significantly low for the past three decades and yet the private investment is the backbone of every economy, of which Nigeria is not an exception. It is clear from successive governments that Nigeria has unequivocally embraced the policy of a private sector-led growth strategy just like other developing economies. There is no gain saying the fact that the private sector contributes more meaningfully to economic growth than the public sector. The reason for this statement is not far-fetched as had been noted by Aydin, (2007) that corruption seems to be less in private sector investment compared to the public sector investment. Therefore, measures are taken by the government of Nigeria to encourage private sector investment in order to boost high productivity, products innovation, employment level, and high standard of living, reduce poverty, reduce inflation rate and ultimately accelerate economic growth.

However, recent studies tend to suggest that reviving private sector investment may prove difficult unless efforts are made towards restoring consistency and stability in macroeconomic policy environment of business (Furfine, 2001). Obviously, fluctuations in private sector investment in Nigeria have been a serious concern because in spite of the measures adopted by the Nigeria government, private sector investment trends remained low which tend to impede economic growth in the country. It has however been found that a major problem is that the government is so much concerned about policies to boost private sector without much knowledge or investigations into the main determinants of private investment in Nigeria.

As a matter of fact, Nigeria being a country in dire need of economic growth and development cannot overlook the important role interest rate and other macroeconomic variables could play in the direction of investment. Interest rate can be defined as the return or yield on equity or opportunity cost of deferring current consumption into the future (Uchendu, 1993). This definition clearly shows that interest rate is a concept which can mean different things depending from the perspective it is viewed. Interest rate can be seen as an unclear concept, a position affirmed by the availability of different types of rate such as; savings rate, discount rate, lending rate and Treasury bill rate. The focus of this study therefore was to appraise the effect of macroeconomic variables on foreign direct investment from 1986 to 2020.

Statement of the Problem

It is widely known in the literature that, empirical studies on the macroeconomic determinants on private sector investment such as interest rate, exchange rate, inflation rate, and other macroeconomic variables such as M2 seem not to lay credence on the McKinnon-Shaw financial liberalization theory. However, the linkage between investment and interest rate was the central issue under the McKinnon-Shaw financial liberalization proposition (Correa and Tripathi, 2004). Okereke (2015) assert that the central point of the McKinnon-Shaw (1973) hypothesis is that, the rates of interest before the liberalization period were regulated by government through the Central Bank of Nigeria (CBN) so as to guide the economy towards encouraging private sector investment necessary for economic growth. Unfortunately, the private sector in Nigeria is still in the process of developing despite the adoption of policy measures that are private sector friendly over the past fifteen years, (Andrew 2018). This issue therefore deserves the attention of policy makers given that an understanding of the relevance of domestic interest rates policy and other macroeconomic variables would have important implications on the private sector investment

However, as impressive as the number of policies and measures were designed to encourage private investment, of serious concerns were the poor returns recorded on most of the investments which from all practical purpose could not justify the enormous funds that had been committed. Out of recognition of these failures arises the need to root out possible causes of the failure and foster solution. Therefore, an examination of the factors that determine or affecting private investment in Nigeria is required. In other words, the factors that determine or affect private sector investment in Nigeria need to be examined and this is the motivation behind this study.

Again the controversy relating to the main determinants of private sector investment in the literature is essentially not producing clear-cut results and therefore, remains inconclusive. So many findings of some empirical studies agreed that the major determinants of private sector investment are social and politics-driven. According to them, such factors include bad governance, poor provision of infrastructures, political risk, corruption perception index; political instability, insecurity and other social vices. These, they are apparently viewed as major determinants of private sector investment which cause macroeconomic instability. But some studies of authors like Adyorough, Itodo and Obute (2012) on determinants of private sector investment abound, yet few ever investigate such using real

interest rate as variable, most of them used just interest rate. Consequently this study looks into the long-run determinants, (using real interest rate as one of the macroeconomic variables) and short-run dynamics of domestic private sector investment during the period 1986 – 2020 in Nigeria. This study therefore seeks to appraise the effect of macroeconomic determinants on private sector investment in Nigeria. .

Objectives of the Study

The broad objective of this study is to appraise the effect of macroeconomic determinants on Private Sector Investment in Nigeria. Specific objectives are to:

- i. Investigate the effect of Interest Rate on Private sector Investment in Nigeria.
- ii. Ascertain the impact of Money Supply (MS) on Private Sector investment in Nigeria.
- iii. Determine the effect of Exchange rate on Private Sector investment in Nigeria.
- iv. Ascertain the causality relationship between inflation rate and Private Sector Investment in Nigeria.

Research Questions

The study will be guided by the following research questions:

- i. To what extent did Interest rate affected Private Sector Investment in Nigeria?
- ii. How far did Money Supply (MS) impact on Private Sector Investment in Nigeria?
- iii. What are the effects of Exchange Rate on private sector investment in Nigeria?
- iv. What was the causality relationship between inflation and private sector investment in Nigeria?

Statement of Hypotheses

The following hypotheses formulated in null forms will guide this study thus:

- i. Interest rate did not have a positive and significant effect on Private Sector Investment in Nigeria.
- ii. Money Supply (MS) did not have a positive and significant impact on Private Sector Investment in Nigeria.
- iii. Exchange rate did not have positive and significant effect on private sector investment in Nigeria.
- iv. There is no causal relationship between inflation and Private Sector Investment in Nigeria.

2. Review of Related Literature

2.1 Conceptual Review

Private Sector Investments

The term private sector is the part of the economy that is run by individuals and companies for profit and is not state owned. Therefore, it encompasses all for-profit businesses that are not owned or operated by the government. It worthy to note that companies and corporations that are government run are not part of public sector rather they are known as the public sector, while charities and other non-profit organizations are part of the voluntary sector. The private sector tends to make up a larger share of the economy in free market, capitalist-based societies like Nigeria. Private sector businesses can also collaborate with government run-agencies in arrangements called public-private partnership.

Private investment from macroeconomic standpoint is the purchase of a capital asset that is expected to produce income, appreciate in value or both generate income and appreciate in value, <https://study.com> (2016). The term private sector investment is defined by Andrew (2018) as the investments made by private individuals, group or companies who contribute to the growth of the economy. Eregha, (2010) defines private sector's gross domestic investment as all additions to the stocks of assets (purchases and own-account capital formation), less any sales of second-hand and scrapped assets.

Exchange Rate

Exchange rate can be described as the price of the domestic currency in terms of other currencies. Obamuyi (2009) noted that the exchange rate in any given economy often plays a prominent role than the interest rate in the transmission mechanism of monetary policy especially for developing countries. An exchange rate has a base currency and a counter currency. In a direct quotation, the foreign currency is the base currency and the domestic currency is the counter currency. In an indirect quotation, the domestic currency is the base currency and the foreign currency is the counter currency. Most exchange rates use the US dollar as the base currency and other currencies as the counter currency. In his own explanation, Peterson (2017) describes exchange rate as a number that is used to calculate the difference in value between money from one country and money from another country or the ratio at which the principal unit of two currencies may be traded.

Oleka (2012) noted that there are two basic types of exchange rate regime namely; fixed exchange rate and floating exchange rate. A fixed exchange rate is a type of exchange rate regime where a currency value is fixed against either the value of another single currency, or to a basket of other currencies, or to another measure of value, such as gold. It is worthy to reemphasize that a fixed exchange rate is usually used in order to stabilize the value in a predetermined ratio to a different, more stable or more internationally prevalent, currency (currencies). A country's central bank typically uses an open market mechanism and is committed at all times to buy and sell its currency at a fixed price in order to maintain its pegging ratio and, hence, the reference to which it is pegged. Whereas a floating regime is one where currencies are allowed to move freely up and down according to changes in its demand and supply, floating exchange rates change freely and are determined by trading on the free market, (Oleka, 2012).

Inflation Rate

Akpokodje (1998) describes inflation rate as a measure of how fast a currency loses its value in a given economy. That is, the inflation rate measures how fast prices for goods and services rise over time, or how much less one unit of currency buys now compared to one unit of currency at a given time in the past. The inflation rate may increase due to massive printing of money, which increases supply in the economy and thus reduces demand. Equally, it may occur because certain important commodities become rarer and thus more expensive. Central banks attempt to control the inflation rate by increasing and decreasing the money supply. The inflation rate is important to fixed-income securities, as the returns on these securities may not keep up with inflation, and thus result in a net loss for the investor.

Money Supply (MS)

According to Peterson (2018) Broad money is the definition of the Money Supply which includes a wide scope for the definition of money – including both notes and coins, but also more illiquid forms of money – such as bank deposits, treasury bills, and gilts. These are considered 'near money' because it can easily be changed to cash. Broad money includes notes and coins but also saving accounts and deposits in a savings account. Broad money can also include Treasury Bills and gilts. These financial securities are seen as 'near money' because they are more illiquid than cash and instant saving accounts. Broad money does not include assets, such as long-term dated securities and shares. Although these can be sold, they are not included in terms of broad money because they fall in the category of assets rather than money.

Broad money includes $M1+DD+SD$. Broad money tends to be less stable than narrow definition of money (Tomola, Adebisi and Olawale 2010).

Interest Rate

Interest rate is a macroeconomic concept that is defined as the amount that a bank charges on the amount it lends. It is the rate at which commercial banks make funds available to people. Interest rate is an important economic price; which can either be seen as a cost of capital or as an opportunity cost of funds. Also, interest rate can be viewed as the price paid for the use of money. It is the opportunity cost of borrowing money from a lender. It can also be seen as the return being paid to the provider of financial resources. It is an important economic price. This is because whether seen from the point of view of cost of capital or from the perspective of opportunity cost of funds, interest rate has fundamental implications for the economy either impacting on the cost of capital or influencing the availability of credit, by increasing savings. Lending rates vary depending upon the nature of loans and advances. The rates also vary according to the purpose in view. For example if the loan is sanctioned for the

purpose of activities for the development of backward areas, the rate of interest is relatively lower as against loans and advances for commercial/business purposes. Similarly for smaller amounts of loan the rate of interest is higher as compared to larger amounts. Again lending rates for consumer durables, e.g. loans for purchase of two-wheelers, cars, refrigerators, etc. are relatively higher than for commercial borrowings (Bosco and Emerence, 2016)

2.2 Theoretical Framework

This study is adopted the Financial Liberalization Theory which was propounded by McKinnon-Shaw, whose framework advocated for the implementation of financial liberalization policies as a way of increasing financial savings mobilization, improving efficiency with which resources are allocated among alternative investment projects and thereby enhancing economic growth. The Financial Liberalization Theory put forth by McKinnon and Shaw (1973) postulate that interest rate regulations usually lead to low and negative real interest rates, which stunts economic growth of developing countries. The financial repression which causes low interest rate discourages savings and thus, shrinks investment. The quality of investment will also be low because the projects that would be undertaken under a regime of repression would have a low rate of yield. They advocated that interest rate deregulation would increase interest rate rise which will encourage both savings and investment thereby boosting economic growth.

2.3 Empirical Review

Ajayi and Kolapo (2018) examined the sensitivity of domestic private investment to macroeconomic indicators in Nigeria from 1986 to 2015 using domestic private investment as the dependent variable and gross domestic product, money supply, exchange rate, interest rate and inflation rate as independent variables. The Ordinary Least Square technique, ARDL Modelling technique and the Engle Granger causality technique for analysis revealed that domestic private investment is most sensitive to money supply, gross domestic product as a proxy for economic growth and exchange rate in Nigeria while it is less sensitive to inflation and interest rate in the short run. Gross domestic product as a proxy for economic growth and exchange rate affect domestic private investment positively while money supply has a negative effect in the short run. Domestic private investment is most sensitive to money supply and gross domestic product as a proxy for economic growth in the long run and both exert a negative and positive effect on domestic private investment respectively in the long run while inflation and interest rates also exert significant effect on the same. Meanwhile, the causality test revealed that domestic private investment drives money supply in Nigeria. Hence, it is recommended that monetary policies which relate mostly to the control of the cost, supply/availability and direction of money should be reviewed periodically and ensure that such policies are implemented with little or no lag.

Diabate (2020) investigated the determinants of domestic private investment between 1970 and 2012 in Cote de Ivoire with the use of the Auto Regressive Distributed Lag Modeling (ARDL) technique, and found that public investment, foreign direct investment and trade are major determinants of domestic private investment in the short and long runs while gross domestic product and interest rate are insignificant.

Ekpo (2016) examined the determinants of private investment in Nigeria and observed that inflation rate, fiscal deficit, public investment rate, poor infrastructure, institutional factors, political and economic instability has significant influence on domestic private investment.

Combey (2020) examined the determinants of private investment in the West African Monetary Zone (WAMZ) between 1995 and 2014 considering private investment as the dependent variable and also using GDP, output gap, interest rate, inflation rate, credit to private sector, government consumption, term of trade, trade openness and political stability as independent variables using the panel data regression technique. It was observed that economic growth and political stability have significant effect on private investment in the long run.

Bosco and Emerence (2016) examined the effect of GDP, Interest rate and inflation on private investment in Rwanda between 1995 and 2009 employing the Error Correction Modelling technique. It was revealed that economic growth significantly affects private investment.

Kalu and Onyinye (2015) investigated the empirical link between domestic private investment and economic growth in Nigeria between 1970 and 2012 using Cobb-Douglas model and observed a significant relationship between real gross domestic product and domestic private investment. Esbalew (2014) examined the determinants of domestic private investment between 2000 and 2012 in six East African nations adopting the pooled OLS regression technique

also used domestic private investment as the dependent variable and public investment, inflation, GDP, credit to private sector, financial deepening, interest rate and exchange rate as independent variables. Economic growth and credit to private sector were found to have positive effect on domestic private investment.

3. Methodology

Research Design

Ex-post facto design was adopted for this dissertation work. Its application here was on the premise that the study depends on phenomena that had already occurred, which are beyond the manipulation of researchers. This means that the relevant dependent and independent variables that were used for analysis cannot be subjected to any control whatsoever by the researchers (Onwumere, 2009). Undoubtedly, the researcher actually made use of the relevant data as collated by the institutionalized agencies charged with such statutory task. Therefore, ex-post facto design suits the objectives of this study

Model Specification

This study attempts to ascertain the determinants of private sector investment in Nigeria, covering the period between 1986 and 2018, using Nigerian data. For this purpose, the model adopted by Onwe (2014) that carried out similar study in Nigeria for the period from 1970 to 2013 was employed as our models with little modifications which includes MS, INTR, EXCHR, and INFR, and therefore the mathematical specification of the model for this study is as shown thus;

$$Y_t = f(X_{t1}, X_{t2}, X_{t3}, X_{t4}, X_{t5}) + \mu_t \text{-----Equ.3.2.1}$$

Where,

Y_t = Private Sector Investment (PSINV) (Dependent Variable)

X_{t1} = Bank Credit to Private Sector (BCPS) (explanatory variable)

X_{t2} = Public Sector Investment Rate (PSINR) (explanatory variable)

X_{t3} = Exchange Rate (EXCHR) (explanatory variable)

X_{t4} = Inflation Rate (INFR) (explanatory variable)

X_{t5} = Real Interest Rate (RINTR) (explanatory variable)

t = Time Series

μ_t = Error or Disturbance Term

Rewriting the above econometric models to regression models, we have.

$$Y = f(X_1, X_2, X_3, X_4)$$

$$PSINV_t = \beta_0 + \beta_1 INTR_t + \beta_2 MS + \beta_3 EXCHR_t + \beta_4 INFR_t + \mu_t \text{----- (equ 3.2.2)}$$

Where

PSINVT = Private Sector Investment

RINTR = Real Interest Rate

MS = Money supply

EXCR = Exchange Rate

INFR = Inflation Rate

t = Time Series

μ_t = Error or Disturbance Term

The variables in the model were log-transformed so as to keep them at the same level of measurement and make provision for easy interpretation. Hence, log-transforming the variables in equation 2 to log form their real terms is given:

$$(PSINV)_t = \beta_0 \text{Log} + \beta_1 \text{Log}(INTR)_t + \beta_2 \text{Log}(MS)_t + \beta_3 \text{Log}(EXCHR)_t + \beta_4 \text{Log}(INFR)_t + \mu \text{ - (equ.3.2.3)}$$

Equation 2 implies that private sector investment in Nigeria depends on bank credit to private sector, public investment rates, exchange rate, interest rate, inflation rate and real interest rate. Since the study among other things is interested in investigating relationship between the variables and private sector investment in Nigeria, the variables in the model needs to follow the same trends, implying that they must co-integrate. If the variables are

not co-integrated, then the independent variables might drift above or below the dependent variable in the long-run.

However, above models will be modified and used to properly estimate the models for the hypotheses one to three of this study.

$$\log\text{PSINVt} = \beta_0\text{Log} + \beta_1\text{Log(INTR)t} + \beta_2\text{Log(MS)t} + \beta_3\text{Log(EXCR)t} + \beta_4\text{Log(INFR)t} + \mu \quad (3.2.4)$$

However, above models are hereby modified and used to properly estimate the models for hypotheses one and two as follows:

4. Data Presentation and Analysis

These raw data in Table 4.1 were analyzed and interpreted vis-a-vis our study objectives as shown thus:

Table 4.1 Data Presentation, 1986 – 2020

<i>Year</i>	<i>LogPSINVT</i> <i>N'm</i>	<i>LogINTR</i> <i>%</i>	<i>LogMS</i> <i>N'm</i>	<i>LogEXCR</i> <i>%</i>	<i>LogINFR</i> <i>%</i>
1986	20,243.62	2.02	41452.4	28.44	9.96
1987	24,943.91	4.02	100789.1	36.79	13.96
1988	32,032.85	4.54	133956.3	47.03	16.62
1989	41,919.64	7.39	240394.7	47.05	20.44
1990	49,967.69	8.04	298614.4	84.09	25.30
1991	59,604.47	9.91	328454.8	116.2	20.04
1992	90,980.33	17.30	544264.1	117.96	24.76
1993	2,024.21	22.05	633144.4	273.84	31.65
1994	17,628.13	21.89	648,813.0	407.58	20.48
1995	28,952.01	21.89	716866.6	477.73	20.23
1996	37,791.33	21.89	617320.0	419.98	19.84
1997	41,116.41	21.89	595932.9	501.75	17.80
1998	45,889.90	21.89	633017.0	560.83	18.18
1999	53,073.62	92.69	2577374	794.81	20.29
2000	68,974.82	102.11	3097384	898.25	21.27
2001	81,341.42	111.94	3176291	1016.97	23.44
2002	11,332.25	120.97	3932885	1166.00	24.77
2003	13,301.56	129.36	4478329	1329.68	20.71
2004	17,321.30	133.50	4890270	1370.33	19.18
2005	22,269.98	132.15	2695072	1525.91	17.95
2006	28,662.47	128.65	451461.7	1753.26	16.89
2007	32,995.38	125.83	431079.9	2169.63	16.94
2008	39,157.88	118.57	493180.2	2320.31	15.14
2009	44,285.56	148.88	590441.1	3228.03	18.99
2010	54,612.26	150.30	689845.3	4551.82	17.59
2011	62,980.40	153.86	896849.6	5622.84	16.02
2012	71,713.94	157.50	1016722	6537.54	16.79
2013	80,092.56	157.31	1373570	7118.97	16.72
2014	89,043.62	158.55	1631524	7904.02	16.55
2015	94,144.96	195.52	2111531	8837.00	16.85
2016	101,489.5	305.00	3478915	11058.2	16.87
2017	113,711.6	305.79	5351001	5920.70	17.55
2018	28,720.25	306.08	5510631	8605.30	16.90
2019	34,578.80	306.10	5766018	7065.90	17.00

2020	34,923.90	306.34	583429	7590.50	17.05
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Source: Debt Management Office (DMO) 2021.

PSINVT = Private Sector Investment, INTR = Interest Rate, MS= EXCR =Exchange Rate, INFR = Inflation Rate.

4.2 Analyses of Results

Unit Root Test

Table 4.2.1 ADF Unit Root Test for the Series in Differences

Variable	ADF-stat.	5% critical Value	Order of integr.
PSINVT	-4.1128	-2.9571	Stationary at I(1)
INTR	-8.9709	-2.9571	Stationary at I(1)
EXCHR	-5.3326	-2.9571	Stationary at I(1)
MS	-4.8605	-2.9571	Stationary at I(1)
INFR	-5.5161	-2.9571	Stationary at I(1)

Source: Author's computation aided by E-views, 2020

Results of the stationarity test in Table 4.2.1 reveals that our variables are stationary at same orders of integration. Each of the variables has no unit root and attained stationarity after first differencing I (1). It is evident that the calculated values (ADF Statistic) are less than the critical values for each of the variables tested, which is a proof of their stationarity.

Table 4.2.2 Descriptive Statistics Test Results

	PSINVT	RINTR	MS	EXCHR	INFR
Mean	24542.24	14.52210	2288.846	112.2221	18.46112
Median	11332.28	16.84222	1166.000	118.5700	17.95000
Maximum	122432.42	23.82441	11058.20	306.0800	31.65000
Minimum	2024344	12.63246	28.44000	2.020000	9.960000
Std. Dev.	34842.99	11.65442	3180.436	89.33120	3.894925
Observations	33	33	33	33	33

Source: Author's computation aided by E-views, 2020

Table 4.2.2 describes individual characteristics of the proxied variables. Private sector investment (PSINV) averaged 24, 542.24 between 1986 and 2019. The highest private sector investment was in 2017 at 122, 432.42, while it recorded lowest in 1993 at 2, 024.21. Interest Rate (INTR) averaged 16.8422, Money Supply (MS), Exchange rate (EXCR) averaged, 2288.846, 112.22, 18.46112 percent and 14.522 percent respectively over the 33 years study period.

4.3 Test of Hypotheses

This section tested the hypotheses stated in chapter one and modeled in chapter three. Three steps were utilized in interpreting the Ordinary Least Square (OLS) regression results. The steps involved are:

1. Restating the hypotheses in null and alternate forms
2. Interpreting the regression results
3. Using the decision criteria to accept or reject the null/ alternate hypotheses.

4.3.1 Test of Hypothesis One

Restating Hypothesis One in Null and Alternate Forms

H₀₁: Interest Rate did not have a positive and significant influence on private sector investment in Nigeria for the period between 1986 and 2020.

H_{a1}: Interest Rate has a positive and significant influence on private sector investment in Nigeria for the period between 1986 and 2020.

Table 4.3.1 Ordinary Least Square Regression Results

Dependent Variable: PSINVT

Method: Least Squares

Date: 11/12/20 Time: 12:52

Sample: 1986 2020

Included observations: 33

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG INTR	0.022020	0.085819	1.203120	0.0252
LOGEXCHR	0.033456	0.081234	0.302100	0.0123
C	0.107821	0.116951	0.921937	0.0374
R-squared	<u>0.056202</u>	Mean dependent var		0.211071
Adjusted R-squared	<u>0.064364</u>	S.D. dependent var		0.302358
S.E. of regression	0.297284	Akaike info criterion		0.543307
Sum squared resid	1.060534	Schwarz criterion		0.634601
Log likelihood	-1.803147	Hannan-Quinn criter.		0.534856
F-statistic	1.043625	Durbin-Watson stat		1.542622
Prob(F-statistic)	0.025213			

Source: Author's computation aided by E-views, 2021

Results

Hypothesis one was used to evaluate the influence of Interest Rate (INTR) on the private sector investment in Nigeria. The result of the OLS coefficient for interest rate to private sector is positive and significant (coeff.= 0.022020, p>0.05). At prob>F-statistics of 0.025213 less than 5 percent as shown in table 4.3.1, the OLS model is very significant and fitted the data reasonably well.

4.3.2 Test of Hypothesis Two

H₀₂: Money Supply (MS) did not have a positive and significant effect on Private Sector Investment (PSINVT) in Nigeria over the period 1986 – 2020.

H_{a2}: Money Supply (MS) had a positive and significant effect on Private Sector Investment (PSINVT) in Nigeria over the period 1986 – 2020.

Table 4.3.2: Regression Results of Hypothesis Two

Dependent Variable: LOG(PSINVT)
 Method: Least Squares
 Date: 08/12/20 Time: 17:32
 Sample: 1986 2020
 Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGMS	0.210244	0.079584	3.897743	0.0006
LOGINTR	0.331211	0.084569	3.994562	0.0345
C	-4.636829	0.728300	-6.366651	0.0000
R-squared	0.923233	Mean dependent var		4.022774
Adjusted R-squared	0.950352	S.D. dependent var		1.426683
S.E. of regression	0.314891	Akaike info criterion		0.662250
Sum squared resid	2.829526	Schwarz criterion		0.845467
Log likelihood	-6.596007	Hannan-Quinn criter.		0.722982
F-statistic	188.4452	Durbin-Watson stat		2.014253
Prob(F-statistic)	0.000002			

Source: Author's computation aided by E-views, 2021

Table 4.3.2 revealed that MS has a positive and significant effect on PSINVT in Nigeria over the period 1986-2020. This is explained by the positive coefficient value (0.210244) of our explanatory variable MS and the corresponding probability value $0.0006 < 0.05$. The coefficient of the independent variable is 0.31, which means that when M2 increased by 1 percent, PSINVT increased by 31 units during the sample period, 1986-2020.

4.3.3 Test of Hypothesis Three

H_{03} : Exchange rate did not have a positive and significant effect on private sector investment in Nigeria for the period between 1986 and 2020.

H_{a3} : Exchange rate had a positive and significant effect on private sector investment in Nigeria for the period between 1986 and 2020.

Table 4.3.3: Regression Results of Hypothesis Three

Dependent Variable: LOG(PSINVT)
 Method: Least Squares
 Date: 08/12/20 Time: 15:34
 Sample: 1986 2020
 Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(EXCHR)	0.032024	0.079584	3.897743	0.0002
LOG INFR	0.032225	0.056789	3.991238	0.0001
C	-3.425424	0.615211	-5.234322	0.0000
R-squared	0.082221	Mean dependent var		3.023552
Adjusted R-squared	0.075124	S.D. dependent var		1.314466
S.E. of regression	0.286452	Akaike info criterion		0.561142
Sum squared resid	2.644612	Schwarz criterion		0.723154
Log likelihood	-5.542116	Hannan-Quinn criter.		0.631674
F-statistic	0.063542	Durbin-Watson stat		1.486464
Prob(F-statistic)	0.036220			

Source: Author's computation aided by E-views, 2021

At prob<F value of 0.036220 less than 0.05 percent as shown in Table 4.6, hence, the OLS model is very significant and fitted the data reasonably well.

Results

The hypothesis three was used to test the effect of exchange rate on private sector investment in Nigeria for the period between 1986 and 2020. The coefficient of exchange rate as shown in table 4.3.3 was positive and significant (coeff.= 0.032024, $p < 0.05$).

4.3.4 Test of Hypothesis Four

H_{04} : There is no relationship between inflation rate and private sector investment in Nigeria over the period 1986-2020.

H_{a4} : There is relationship between inflation rate and private sector investment in Nigeria over the period 1986-2020.

Table 4.3.4. Granger Causality Test Result for the test of Hypothesis Four

Pairwise Granger Causality Tests

Date: 08/12/20 Time: 18:18

Sample: 1986 2020

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
Log PSINVT does not Granger Cause Log INFR	33	1.67663	0.0343
Log INFR does not Granger Cause Log PSINVT		1.64356	0.0041

Pairwise Granger Causality Tests

Date: 08/12/19 Time: 18:18

Sample: 1986 2018

Lags: 2

Alternate Hypothesis:	Obs	F-Statistic	Prob.
LNPSINVT does not Granger Cause LN INFLR	33	0.45224	0.0420
LNINFLR does not Granger Cause LNPSINVT		4.56453	0.0038

Source: Author's computation aided by E-views 9, 2021.

Results

From the estimated table 4.3.4, it was revealed that all the independent variables – INTR (0.01204), MS (0.0622), EXCHR (-524.4241) and INFR (-2912.822) all came out with their a priori expectation except INFR that did not obey the theoretical expectation. In other words, the result revealed that each selected macroeconomic variable individually pulls a significant effect on Private sector investment in Nigeria except Inflation rate. However, with an F-statistic of 4.1632 they collectively show joint significance. Further, the coefficient of inflation has a positive sign but statistically insignificant with a value of 102. The results could be explained by the fact that high inflation in most cases creates an incentive for an individual to make abnormal profit as compared to when there is low inflation, thereby increasing investments in such sectors. The positive coefficient is in conformity with the results of the studies of Acosta and Frimpong and Marbuah (2010).

5. Summary of Findings, Conclusion and Recommendations

5.1 Summary of Findings

Findings arising from this work can be summarized as follows:

1. Interest Rate has a positive and significant effect on private sector investment in Nigeria over the period 1986-2020.
2. Money Supply (MS) has a positive and significant impact on private sector investment in Nigeria over the study period.
3. Exchange Rate has positive and significant impact on the private sector investment in Nigeria over the period 1986-2020.
4. Inflation Rate has a positive and significant effect on private sector investment in Nigeria for the period 1986-2020.

5.2 Conclusion

Determinants of private sector investment have been broadly examined theoretically and empirically. This practice of intentionally allowing government involvement in supporting private investment with a view to attempting to improve economic activity is affirmed worldwide. In line with empirical principles, Ordinary Least Square (OLS) econometric technique was employed to examine major determinants of private sector investment in Nigeria over the period 1986-2020. Preliminary tests of presence of unit root and normality were conducted using Augmented Dickey-Fuller (ADF) and descriptive statistics respectively.

The outcome of the investigation clearly revealed that all the selected macroeconomic variables - INTR, MS, EXCHR and INFR individually pulls a significant effect on private sector investment in Nigeria except Inflation rate. This implies that macroeconomic variables - bank credit to private sector, public sector investment, exchange rate and real interest rate have positive and significant effects on private sector investment in Nigeria at the period 1986-2020. Hence, are taken to be the major determinants of private sector investment in Nigeria over the studied period. It can be inferred from this study that jointly, exchange rate, public investment, bank credit and interest rate majorly determine private investments in Nigeria for the period of this study.

5.3 Recommendation

From the analysis of the effects of interest rate on private investment in Nigeria, the study recommends the following policy implications;

1. Since Interest Rate has significant influence on private investment in Nigeria, commercial banks should be advised by the regulatory body to inculcate the habit of boosting private savings and the deposit rate so as to increase the level of lending to the private sector.
2. For sufficient economic growth and sustainability of Nigeria's economy, monetary authorities and government should lower the lending rate, so that local investors especially small and medium scale entrepreneurs can have easy access to loan facilities from banks.
3. Since public sector investment is found to be significant in the study, for Nigerian government to reduce the instability in the macroeconomic environment vis-à-vis fiscal spending channel, the government should increase its capital fiscal spending at the expense of the recurrent fiscal spending. This move will go a long way in boosting private sector investment through enough financial inclusion.
4. Since exchange rate has significant effect on private sector investment in Nigeria, exchange rate depreciation should be discouraged in our economy as it precipitates negative effects on private sector investment vis-à-vis economic growth. In that regard, the Federal Governments should take concerted measures to control or possibly eradicate this life-threatening malady from our economy.

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