Effect of Government Fiscal Policy on Private Investment in Nigeria

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Abstract: This study examines the effect of government fiscal policy on private investment in Nigeria using Auto-regression Distributed Lag Models (ARDL) model on a secondary time series data sourced from Central Bank of Nigeria (CBN) Statistical Bulletin. From the regression analysis, it is observed that inflation, government tax revenue, government recurrent expenditure, government capital expenditure, leading interest rate and exchange rate conform to the a priori expectation of the study and that all the variables of the study are statistically significant in explaining private investment in Nigeria. The F-test conducted in the study shows that the model has a goodness of fit and is statistically different from zero. In other words, there is a significant impact between the dependent and independent variables in the model. Finally, both R^2 and adjusted R^2 show that the explanatory power of the variables is extremely high and very strong in explaining private investment in Nigeria. Based on the findings from the empirical analysis, the following recommendations were made: The government should adopt a contractionary monetary policy by reducing the supply of money within the economy by lowering the prices of bonds and rising interest rates. This will reduce consumption, prices fall and also sows down inflation. The government should encourage private investment by implementing moderate tax revenue. This will encourage saving and investment. The government should increase spending on basic and public infrastructure. This will provide the needed environment for private investment. The government should promote a stable interest rate and strengthens the exchange rate. This will improve the some stock prices as companies pay less for loans and raw materials, causing higher profits. It will make the economy richer, and increases the purchasing power.

Key words: Fiscal Policy, Private Investment, Inflation, Tax Revenue, Leading Interest Rate, Exchange Rate, Recurrent Expenditure, Capital Expenditure.

1. INTRODUCTION

Fiscal policy is an economic policy of government that regulates its public spending and taxation. The government uses its policy on taxation to generate revenue with which it funds her numerous development projects including poverty reduction and sustainable growth and development in all sectors of the economy (Aigheyisi, 2017; Iya. & Aminu, *2015*). . The nature and scope of fiscal policy that addresses government spending and taxation in any economy is generally determined by government legislation. Generally, fiscal policy aims at enhancing and stabilizing a nation's economy such that it operates at optimum performance in the area of employment generation, Gross Domestic Product (GDP) growth performance and sustainable economic performance. However, in a weak and emerging economy, the main purpose of fiscal policy is to accelerate the rate of capital formation and investment. In this situation, the government uses fiscal policy an instrument to regulate and influence aggregate demand (AD) and aggregate supply (AS) through various legislations on public spending, *taxation policies, and the government's budgetary position (*Iya & Aminu, *2015*). *In fact, a robust fiscal policy enhances and addresses asymmetric income and wealth redistribution especially in a stagnated and slow economy like Nigeria. In other words when an economy starts to overheat it calls for a sound and robust fiscal policy to mitigate and absorb the shocks of the overheat orchestrated by the crippling investment and economic activities in the country (*Omojolaibi, Okenesi & Mesagan, 2016*).*

Private investments, particularly the private domestic investments in the areas industrialization, manufacturing subsector, trade and commerce, hospitality, agriculture, tourism etc are imperative because of their numerous contributions in propelling and stabilizing growth in an economy. Most of the advance and developed economies have very high rate of private domestic investments thus making them stand out in the committee of nations in terms of competitive advantage and trade balance. However, the number of private domestic investment a nation parades a function of its capability and capacity for resource mobilization which also depends on the macroeconomic environment. Arguably, with proper fiscal policy measures in terms adequate public infrastructure, good taxation polices, the private domestic investment increases and are in better position to propel growth in all sectors of the economy than the public investment. A spurt in private investment usually signals high return on investment in the domestic economy (Awode, 2019; Chinanuife Eze & Nwodo, 2018).

However, despite these advantages of private investment over other investment types such as public investment and foreign investment, the required fiscal policy measures in Nigeria in terms of inflation control, utilization of government tax revenue, proper government recurrent expenditure, proper government capital expenditure, interest rate and exchange rate regulation seemed not to have been put into place to accelerate the needed growth process. This is evident in the rising level of mortality rates of private domestic investment and even some foreign investments in Nigeria. Extant literature posits that private domestic investment in Nigeria is replete with Available statistics shows that high mortality especially within their first five years of existence (Etim, Akpan, Augustine & Michael, 2022; Ewubare & Worlu, 2020). This high mortality influences economic growth negatively as the small business sub-sector is part of a nation's economy that contributes to economic expansion. This is evidenced in the high rate of unemployment, poverty and low standard of living. Many of these small businesses close down few years after launch, some remain the same without any growth potential as a result of these, they cannot be said to have made significant contribution, to the national economy. The success of business depends on how they implement certain survival strategies (Etim, Akpan, Augustine & Michael, 2022). Giving the high rate of mortality of businesses in Akwa Ibom State, it is imperative to investigate how businesses apply three keys strategies that have impact on survival, namely; managerial skill, succession plan and marketing strategy. However, private investment has been found to contribute more on economic growth than the public investment, in that public investment is seen to be politically motivated most times and lack economic rationality (Kaputo, 2011). For that reason, we cannot compared it to

private investment that involves the making of prudent investment decisions (Oyamendan, 2022; Madubuike, K.O; Metu & Kalu, 2021).

Statement of Problem

Private investment in Nigeria has recording a soaring and alarming mortality rate. Available suggests that most of the businesses collapse between the sixth and tenth year while only about five to ten percent survive, thrive and grow to maturity (Aremu & Adeyemi, 2011; Ude1 & Ekesiobi, 2014; Ditimi, 2022). This alarming situation of private investment is corroborated by a survey conducted by Manufacturer Association of Nigeria in 2004 revealed that only about 10% of industries run by its members are fully operational while about 70% of the small and medium scale enterprises in Nigeria on the verge of folding-up, while the remaining 30 percent operate on low level capacity and are vulnerable to folding up in the nearest future, (Joshua, 2008). As at 2010, about 64.1% of SEs in Nigeria did not have patent right, 57.5% were uninsured, 54 .4% uses personal savings as source of capital and they contributed 46.54 percent to the GDP in nominal terms as at December 2010 (NBS, 2010). The percentage of businesses that fail increased to 31.4% in the second year (2019) and 39.3% in the third year (2020). In their fourth year (2021), 44.5% had shuttered and by the fifth year in 2022, the new business failure rate reached 48.4%. That means that only around half of the businesses that started in 2017, or 378,596 of them, to be exact, were still surviving half a decade on. Looking at it on a year-to-year basis, the average annual rate of business failure from 2018 to 2022 for companies started in 2017 stands at 12.2%. In other words, 12.2% of the businesses that started in 2017 fail each year. A number of studies have illustrated that there exist a correlation between private investment, public investment and fiscal policy (taxation and expenditure) with different outcome of findings (Oyedokun & Ajose, 2018; Akpo, Hassan & Friday, 2015; Awode, 2019; Ewubare & Worlu, 2020; Oyedokun & Ajose, 2018). Fiscal policy particularly policies on inflation, government tax revenue, government recurrent expenditure, government capital expenditure, interest rate and exchange rate impact on private investment decisions in Nigeria (Ijirshar, V. U.; Anjande, G.; Fefa, J. & Mile, B. N. (2019; Hermes & Lensink, 2001). Therefore, it is worthwhile to examine the effect of government fiscal policy on private investment in Nigeria

Objectives of the Study

The main objective of the study is to examine the effect of government fiscal policy on private investment in Nigeria. Specifically, the study sought to:

Research Hypothesis

The following null hypotheses were formulated

Ho1: Inflation on private investment in Nigeria

Ho2: Government tax revenue on private investment in Nigeria

Ho3: government recurrent expenditure on private investment in Nigeria

Ho4: government capital expenditure on private investment in Nigeria

Ho5: interest rate on private investment in Nigeria

Ho6: Exchange rate on private investment in Nigeria

2. METHODOLOGY

Empirical Model Specification

The model equation for this study is specified thus:

The functional form of the model is:

PIN = f(INF, TAX, REX, CAX, INT, EXR) …   …   …   …   …   (1)

The mathematical form of the model is:

$$PIN = \beta_0 + \beta_1 INF + \beta_2 TAX + \beta_3 REX + \beta_4 CAX + \beta_5 INT + \beta_6 EXR \qquad \dots \quad (2)$$

The econometric form of the model is:

$$PIN = \beta_0 + \beta_1 INF + \beta_2 TAX + \beta_3 REX + \beta_4 CAX + \beta_5 INT + \beta_6 EXR + \mu_i \qquad \dots \quad (3)$$

The logarithm form of the model is

$$LNPIN = \beta_0 + \beta_{1L} LNINF + \beta_2 LNTAX + \beta_3 LNREX + \beta_4 LNCAX + \beta_5 LNINT + \beta_6 LNEXR + \mu \qquad \dots \dots (4)$$

Where;
PIN = Private investment
INF = Inflation
TAX = Government tax revenue
REX = Government recurrent expenditure
CAX = Government capital expenditure
INT = Interest rate
EXR = Exchange rate
LN = Logarithm
β_0 = Slope of the model
$\beta_1 - \beta_6$ = Parameters of the regression coefficients
μ_i = Stochastic error term

Estimation Technique

The choice of which technique to be employed by researchers often follows the motivation of the study as well as the likely robustness of the analytical result. Bearing this in mind, the study applied modern econometric analytical techniques namely: Co-integration, unit root test and error correction mechanism for the data analysis for the purpose of arriving at a dependable and unbiased analysis.

Unit root test

The use of time series in econometric analysis poses several challenges to researchers. Stationary nature of time series data is one of the problems, since a time series that is non stationary is bound to yield spurious regression. A time series is said to be stationary if the mean and variance are constant over time, and the value of co-variance between two time periods depends only on the distance or long between the two time periods, and not the actual time at which one covariance is computed. Considering that most time series are non-stationary, and therefore produce spurious results, unit root tests should be conducted, before testing for co-integration.

The study uses Augmented Dickey Fuller (ADF) test to determine the optimal length in the dependent variable. The ADF test is pertinent to ensure that the modeled variable series posses constant mean and variance. The motivation for such verification is to hedge against spurious regression that may result from applying ARDL Model to variables at their level form when such variables are non stationary. Also, the ADF test addresses a shortcoming of the Dickey Fuller test of not considering the possibility of autocorrelation in the error term.

Co-integration test

Co-integration occurs when two or more time series variables which themselves may be non stationary, drift together at roughly the same time. This implies that a linear combination of the variable is stationary. The null hypothesis is that the variables are not co-integrated.

Co-integration analysis allows the verification of a long run relationship amongst the modeled variables. The verification of this long run relationship is crucial because most economic relationships are said to hold true in the long run. Therefore modeling variables without verifying the existence of such long run relationship is indeed a hub on the supporting theory.

Auto-regression Distributed Lag Models (ARDL)

Auto-regression Distributed Lag Models (ARDL) model plays a vital role when comes a need to analyze an economic scenario. In an economy, change in any economic variables may bring change in another economic variable beyond the time. This change in a variable is not reflects immediately, but it distributes over future periods. Not only macroeconomic variables, other variables such as loss or profit earned by a firm in a year can affect the brand image of an organisation over the period.

Assumptions for ARDL Model

A. Absence of auto correlation is the very first requirement of ARDL. The model requires that the error terms should have no autocorrelation with each other

B. There should not occur any heteroscedasticity in the data. In simple terms, the variance and mean should remain constant throughout the model

C. The data should follow normal distribution

D. Data should have stationary either on I(0) or I(1) or on both. In addition to this, if any of the variable in the data has stationary at l(2), ARDL Model cannot run.

Method of Evaluation of Estimates

The estimates obtained from the model shall be evaluated using three (3) criteria. The three (3) criteria include:

1. The economic a priori criteria.

2. The statistical criteria: First Order Test

3. The econometric criteria: Second Order Test

Nature and Sources of Data

The study made use of secondary data that spanned 1999 to 2022 sourced from the reports and Bulletin of the National Bureau of Statistics (NBS), Central Bank of Nigeria (CBN) Statistical bulletin, World Bank development indicators.

3. PRESENTATION OF EMPIRICAL RESULTS

Result Presentation and Analysis

The data were analyzed by ARDL using E-view 10.0. The summary of this and other preliminary tests discussed in chapter three are presented in the tables below.

Presentation of Result

Summary of Stationary Unit Root Test

Establishing stationarity is essential because if there is no stationarity, the processing of the data may produce biased result. The consequences are unreliable interpretation and conclusions. The study test for stationarity using Augmented Dickey-Fuller (ADF) tests on the data. The ADF tests are done on level series, first and second order differenced series. The decision rule is to reject null hypothesis if the ADF statistic value exceeds the critical value at a chosen level of significance (in absolute terms). The result of regression is presented in Table 1 below.

Table 1: Summary of ADF Unit Root Test Results

Variables	Level		1st Difference	
	No Trend	With Trend	No Trend	With Trend
LNPIN	-0.217959	-2.042141	-5.839504	-6.457712
LNINF	-1.266849	-3.191128	-4.378727	-5.220626
LNTAX	-1.035247	-2.402735	-5.647076	-5.629135
LNREX	1.232575	-0.262519	-3.868077	-5.535219
LNCAX	0.637067	-2.857931	-5.803187	-6.060994
LNINT	-0.949210	-2.838037	-5.897457	-5.821443
LNEXR	0.861184	-2.319671	-3.177209	-3.870319
@1%	-2.650145	-4.323979	-2.656915	-4.356068
@5%	-1.953381	-3.580623	-1.954414	-3.595026
@10%	-1.609798	-3.225334	-1.609329	-3.233456

Source: Researcher computation using E-view 10.0

Evidence from unit root table above shows that all the study or model variables are not stationary at level difference but stationary at first difference. Since the decision rule is to reject null hypothesis if the ADF statistic value exceeds the critical value at a chosen level of significance (in absolute terms), and accept stationarity when ADF statistics is greater than criteria value, the ADF absolute value of each of these variables is greater than the 1%, 5% and 10% critical value at their first difference but less than 5% critical value in their level form. Therefore, the study concludes that private investment (PIN), inflation (INF), tax revenue (TAX), recurrent expenditure (REX), capital expenditure (CAX), interest rate (INT) and exchange rate (EXR) are all stationary at their first difference integration $I(1)$.

Summary of Cointegration Test

Cointegration means that there is a correlationship among the variables. Cointegration test is done on the residual of the model. Since the unit root test shows that none of the variable is stationary at level, $I(0)$ rather they integrated at their first difference $I(1)$, the study therefore test for cointegration among these variables. The result is presented in the tables 2 and 3 below for ARDL result.

Table 2: Long Run ARDL Bounds Test

F-Statistics	Lower Bound	Upper Bound
7.9258 **	3.6	4.9

Source: Researchers computation using E-view 10.0

** implies a 1% level of significance

Hence, it can be deduced from Table 4.2 that there exists a long run relationship between private investment and macroeconomic variables used in the model. This observation is based on the greater value of the F-statistics attached to the ARDL bound test over the lower- and higher-bound values at 1% of significance level.

Empirical Result of the Effect of Fiscal Policy on Private Investment

Having verified the existence of long run relationship among the study model, the study therefore subjects the model to Auto-regression Distributed Lag Models (ARDL) to generate the coefficients of the parameters of the regression model.

Table 3a: Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.289291	1.944461	1.691621	0.1042
LNPIN(-1)*	-0.469576	0.212673	-2.207973	0.0375
LNINF**	-0.017343	0.013376	-1.296503	0.2077
LNTAX**	-0.066370	0.047615	-4.393886	0.0067
LNREX*	0.020925	0.000710	3.302836	0.0055
LNCAX*	0.011327	0.001345	2.986880	0.0140
LNINT**	0.104704	0.065186	2.606239	0.0219
LNEXR**	-0.075335	0.009804	-3.442196	0.0125

Source: Researcher computation using E-view 10.0

Table 3b: Short Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
D(LNPIN(-1))	0.530424	0.212673	2.494083	0.0203
D(LNPIN(-2))	0.923824	0.874327	6.127639	0.0012
D(LNINF)	-0.115450	0.013946	-4.107821	0.0029
D(LNINF(-1))	-0.075621	0.007475	-2.622194	0.0538
D(LNTAX)	-3.061278	0.049709	-3.232731	0.0046
D(LNTAX(-1))	-5.116089	0.245217	-8.100573	0.0004
D(LNREX)	0.130663	0.000727	5.911626	0.0010
D(LNREX(-1))	0.554621	0.056433	14.85218	0.0000
D(LNCAX)	0.113645	0.001205	4.063088	0.0008
D(LNCAX(-1))	0.643467	0.466512	9.117634	0.0015
D(LNINT)	-2.197112	0.068030	-3.427485	0.0023
D(LNINT(-1))	4.896353	0.864355	-11.64385	0.0002
D(LNEXR)	-0.110332	0.009645	-3.071214	0.0037
ECM(-1)	-4.616845	1.905861	-8.284468	0.0000
R-squared	0.767226			
Adjusted R-squared	0.699333			
F-statistic	21.30059			
Prob(F-statistic)	0.000003			
Durbin-Watson stat	1.751271			

Source: Researcher computation using E-view 10.0

The result of the long run and short run relationship among the variables is presented in Table 3a and 3b above. In the long run, the coefficient of inflation (-0.02) showed that it has positive significant relationship with private investment in Nigeria. This implies that a unit increase in inflation would decrease private investment by 2%. Likewise in the short run the current year value of inflation had a negative and significant effect on private investment with a coefficient value of -0.12. A unit increase in inflation would decrease private investment by .12% in the short run. Also, its last two years value had a negative but insignificant impact on private investment. Therefore, it can be concluded that inflation has a positive and significant relationship with private investment in long and short run in Nigeria.

Similarly, in the long run, government tax revenue has a negative and significant impact on private investment with coefficient value of -0.08. This implies that a unit increase in government tax revenue would decrease private investment by 12%. This also applies in the short run where the current year value of government tax revenue had negative and significant impact on private investment while its last one

year value is negatively related to private investment. From this result a deduction can be made that government tax revenue is negatively related to private investment in Nigeria.

Likewise, the coefficient of government recurrent expenditure is positive (0.02) and statistically significant in the long run. This implies that one percent increase in government recurrent expenditure do has significant impact on private investment in Nigeria. Also, in the short run, the current year value of government recurrent expenditure had positive (0.13) and significant impact on private investment. Meanwhile, its last one year value had a positive and significant impact on private investment. Overall, it can be deduced that an increase in government recurrent expenditure increases in private investment in Nigeria.

Furthermore, the coefficient value of government capital expenditure (0.01) in the long run showed that it had positive and significant impact on private investment. This implies that government expenditure is important in attracting private investment in the long run. However, in the short run the current year value of government expenditure had a positive and significant impact on private investment. Meanwhile, its last one year value had a positive and significant impact with coefficient value of 0.64, implying that an increase in government capital expenditure will increase private investment by 64%. Therefore it can be concluded that government capital expenditure is vital in private investment in Nigeria.

Consequently, Table 3a showed that interest rate had a negative and significant impact on private investment in the long run with coefficient value of −0.1. This implies that a unit increase in interest rate would decrease private investment by 1%. Similarly, in the short run there exists a negative and significant relationship between current year value of interest rate and private investment. The coefficient value of interest rate was -2.2, implying that an increase in interest rate would decrease private investment by 2.2%. Therefore it can be reported that the higher the interest rates of Nigeria, the less attractive the private investment in Nigeria.

In addition, the coefficient values and p-values of exchange rate indicated that it had negative and significant impact on private investment both in the long and short run. This implies that exchange rate is an important determinant of private investment in Nigeria. Thus, a unit increase in exchange rate will decrease private investment by 8% in the long run and 11% in the short run. Thus, the concluded that exchange rate has negative and significant relationship with private investment in the short and long run in Nigeria.

The Error Correction Model (ECM) for this cointegrating relationship was negative as expected (−0.61) and significant which showed that about 4.61% of short run deviations would be corrected for annually. Also from the ARDL regression result, the various tests (R^2, Adjusted R^2, F-statistic, and p-value) of significance on the model showed good result. The R^2 of 0.767 indicated high explanatory power of the independent variables. The adjusted R^2 value of the model also supported this fact. F-statistic which measures the overall significance of the model suggests that all estimated regression model is statistically significant. This is indicated by the F-statistic (21.3006) and p-value (0.00003).

To discuss the regression results as presented in Table 3b, the study employ economic a priori criteria, statistical criteria and econometric criteria.

Economic A Priori Criteria

This subsection is concerned with evaluating the regression results based on a priori (i.e., theoretical) expectations. The sign and magnitude of each variable coefficient is evaluated against theoretical expectations. From table 3b, it is observed that the regression line have a positive intercept as presented by the constant (c) = 4.166845. This means that if all the variables are held constant or fixed (zero), private investment will be valued at 4.17. Thus, the a-priori expectation is that the intercept could be positive or negative, so it conforms to the theoretical expectation.

From table 3b, the study showed that government recurrent expenditure and government capital expenditure have a positive impact on private investment in Nigeria. This means that increase in government recurrent expenditure and government capital expenditure; it will bring about increase in private investment in Nigeria and vice versa. On the other hands, inflation, government tax revenue, leading interest rate and exchange rate has shown to exhibit a negative impact on private investment in Nigeria. Thus, increase in inflation, government tax revenue, leading interest rate and exchange rate will decrease private investment in Nigeria and vice versa.

From the regression analysis, it is observed that all the variables conform to the a priori expectation of the study. Although, leading interest rate and exchange rate was expected to be either positive or negative. Thus, Table 4 summarises the a priori test of this study.

Table 4: Summary of Economic A Priori Test

Parameters	Variables		Expected Relationships	Observed Relationships	Conclusion
	Regressand	Regressor			
β_0	LNPIN	Intercept	+/-	+	Conform
β_1	LNPIN	LNINF	-	-	Conform
β_2	LNPIN	LNTAX	-	-	Conform
β_3	LNPIN	LNREX	+	+	Conform
β_4	LNPIN	LNCAX	+	+	Conform
β_5	LNPIN	LNINT	+/-	-	Conform
β_6	LNPIN	LNEXR	+/-	-	Conform

Source: Researcher computation using E-view 10.0

Statistical Criteria

This subsection applies the R^2, adjusted R^2 and the F–test to determine the statistical reliability of the estimated parameters. These tests are performed as follows: From the study regression result, Table 3b indicated that the coefficient of determination (R^2) is given as 0.767226, which shows that the explanatory power of the variables is high and strong. This implies that 77% of the variations in the private investment is being accounted for or explained by the variations in inflation, government recurrent expenditure, government capital expenditure, government tax revenue, lending interest rate and exchange rate in Nigeria. While other possible determinants of private investment not captured in the model explain about 23% of the variation in private investment in Nigeria.

The adjusted R^2 in Table 3b supports the claim of the R^2 with a value of 0.699333 indicating that 70% of the total variation in the dependent variable (private investment) is explained by the independent variables (the regressors)). Thus, this supports the statement that the explanatory power of the variables is high and strong.

The F-statistic: The F-test is applied to check the overall significance of the model. The F-statistic is instrumental in verifying the overall significance of an estimated model. The hypothesis tested is:

H_0: The model has no goodness of fit

H_1: The model has a goodness of fit

Decision rule: Reject H_0 if $F_{cal} > F_\alpha$ (k-1, n-k) at α = 5%, accept if otherwise.

Where

V_1 / V_2 Degree of freedom (d.f)

V_1 = n-k, V_2 = k-1:

Where; n (number of observation); k (number of parameters)

Where k-1 = 7-1= 6

Thus, n-k = 33-7 = 26

Therefore: $F_{0.05(6,26)} = 2.10$ (From F-table)   …   … F-table

F-statistic = 21.30059   (From Regression Result)   … F-calculated

Therefore, since the F-calculated > F-table as observed in Table 3b, the study reject H_0 and accept H_1 that the model has goodness of fit and is statistically different from zero. In other words, there is significant impact between the dependent and independent variables of the study.

Econometric Criteria

In this subsection, the following econometric tests are used to evaluate the result obtained from the study model; autocorrelation, multicollinearity and heteroscedasticity.

Test for Autocorrelation

Using Durbin-Watson (DW) statistics which the study obtains from the regression result in table 3b, it is observed that DW statistic is 1.751271 or approximately 2. This implies that there is no autocorrelation since d* is approximately equal to two. 1.751271 tends towards two more than it tends towards zero. Therefore, the variables in the models are not autocorrelated and that the models are reliable for predications.

Test for Multicollinearity

This means the existence of a "perfect," or exact, linear relationship among some or all explanatory variable of a regression model. This will be used to check if collinearity exists among the explanatory variables. The basis for this test is the correlation matrix obtained using the series. The result is presented in Table 5 below.

Table 5: Summary of Multicollinearity Test

Variables	Correlation Coefficients	Conclusion
LNINF and LNTAX	0.093694	No multicollinearity
LNINF and LNREX	-0.372257	No multicollinearity
LNINF and LNCAX	-0.481618	No multicollinearity
LNINF and LNINT	0.420346	No multicollinearity
LNINF and LNEXR	-0.427215	No multicollinearity
LNTAX and LNREX	-0.650637	No multicollinearity
LNTAX and LNCAX	-0.499200	No multicollinearity
LNTAX and LNINT	0.389027	No multicollinearity
LNTAX and LNEXR	-0.463152	No multicollinearity
LNREX and LNCAX	0.676324	No multicollinearity
LNREX and LNINT	-0.367633	No multicollinearity
LNREX and LNEXR	0.624215	No multicollinearity
LNCAX and LNINT	-0.366630	No multicollinearity
LNCAX and LNEXR	0.635483	No multicollinearity
LNINT and LNEXR	-0.249895	No multicollinearity

Source: Researcher computation using E-view 10.0

Decision Rule: From the rule of Thumb, if correlation coefficient is greater than 0.8, the study conclude that there is multicollinearity but if the coefficient is less than 0.8 there is no multicollinearity. The study therefore, concluded that the explanatory variables are not perfectly linearly correlated.

Test for Heteroscedasticity

This test is conducted to see whether the error variance of each observation is constant or not. The hypothesis testing is thus:

H_0: There is a homoscedasticity in the residuals

H_1: There is a heteroscedasticity in the residuals

The decision rule if is to Accept the null hypothesis that there is a homoscedasticity (i.e. no heteroscedasticity) in the residuals if the probability of the calculated F-test statistic (F) is greater than the 0.05 level of significance chosen in the study, the null hypothesis will be accepted. Hence, $P(F) = 0.4087$. This means that the probability F statistic is greater than 0.05 level of significance. Therefore, the study accepted the null hypothesis that the model has no heteroscedasticity in the residuals and therefore, the data is reliable for predication.

Evaluation of Research Hypotheses

The t-test is used to know the statistical significance of the individual parameters. Two-tailed tests at 5% significance level are conducted. The result is shown on Table 3b above. Here, the study compare the estimated or calculated t-statistic with the tabulated t-statistic at $t_{\alpha/2} = t_{0.05} = t_{0.025}$ (two-tailed test).

Degree of freedom (df) = n-k = 33-7 = 26

So, the study has:

$T_{0.025(26)} = 2.056$ …   …   …   Tabulated t-statistic

In testing the working hypotheses, which partly satisfies the objectives of this study, the study employs a 0.05 level of significance. In so doing, the study is to reject the null hypothesis if the t-value is significant at the chosen level of significance; otherwise, the null hypothesis will be accepted. This is summarized in table 6 below.

Table 6: Summary of t-statistic

Variable	t-calculated (t_{cal})	t-tabulated ($t_{\alpha/2}$)	Conclusion
Constant	8.284468	±2.056	Statistically Significant
LNINF	-4.107821	±2.056	Statistically Significant
LNTAX	-3.232731	±2.056	Statistically Significant
LNREX	5.911626	±2.056	Statistically Significant
LNCAX	4.063088	±2.056	Statistically Significant
LNINT	-3.427485	±2.056	Statistically Significant
LNEXR	-3.071214	±2.056	Statistically Significant

Source: Researcher computation using E-view 10.0

Decision Rule

1. If calculated t-value > tabulated t-value, we reject the null hypothesis and accept the alternative hypothesis

2. If calculated t-value < tabulated t-value, we accept the null hypothesis and reject the alternative hypothesis

The study begins by bringing the working hypothesis to focus in considering the individual hypothesis.

Hypothesis One

H_{01}: Inflation has no significant impact on private investment in Nigeria.

H_{11}: Inflation has a significant impact on private investment in Nigeria.

Decision:

Applying the above decision rule to the first hypothesis, it showed that the calculated absolute t-value of -4.107821 is greater than tabulated absolute t-value of ± 2.056 which result to rejecting the null hypothesis that inflation has no significant impact on private investment and accepting the alternative hypothesis that inflation has a significant impact on private investment in Nigeria.

Hypothesis Two

H_{02}:   Government tax revenue has no significant impact on private investment in Nigeria.

H_{12}:   Government tax revenue has no significant impact on private investment in Nigeria.

Decision:

Applying the above decision rule to the first hypothesis, it showed that the calculated absolute t-value of -3.232731 is greater than tabulated absolute t-value of ± 2.056 which result to rejecting the null hypothesis that government tax revenue has no significant impact on private investment and accepting the alternative hypothesis that government tax revenue has a significant impact on private investment in Nigeria.

Hypothesis Three

H_{03}:   Government recurrent expenditure has no significant impact on private investment in Nigeria.

H_{13}:   Government recurrent expenditure has a significant impact on private investment in Nigeria.

Decision:

Applying the above decision rule to the first hypothesis, it showed that the calculated absolute t-value of 5.911626 is greater than tabulated absolute t-value of ± 2.056 which result to rejecting the null hypothesis that government recurrent expenditure has no significant impact on private investment and accepting the alternative hypothesis that government recurrent expenditure has a significant impact on private investment in Nigeria.

Hypothesis Four

H_{04}:   Government capital expenditure has no significant impact on private investment in Nigeria.

H_{14}:   Government capital expenditure has a significant impact on private investment in Nigeria.

Decision:

Applying the above decision rule to the first hypothesis, it showed that the calculated absolute t-value of 4.063088 is greater than tabulated absolute t-value of ± 2.056 which result to rejecting the null hypothesis that government capital expenditure has no significant impact on private investment and accepting the alternative hypothesis that government capital expenditure has a significant impact on private investment in Nigeria.

Hypothesis Five

H_{05}:   Lending interest rate has no significant impact on private investment in Nigeria.

H_{15}:   Lending interest rate has a significant impact on private investment in Nigeria.

Decision:

Applying the above decision rule to the first hypothesis, it showed that the calculated absolute t-value of -3.427485 is greater than tabulated absolute t-value of ±2.056 which result to rejecting the null hypothesis that lending interest rate has no significant impact on private investment and accepting the alternative hypothesis that lending interest rate has a significant impact on private investment in Nigeria.

Hypothesis Six

H_{06}:   Exchange rate has no significant impact on private investment in Nigeria.

H_{16}:   Exchange rate has a significant impact on private investment in Nigeria.

Decision:

Applying the above decision rule to the first hypothesis, it showed that the calculated absolute t-value of -3.071214 is greater than tabulated absolute t-value of ±2.056 which result to rejecting the null hypothesis that exchange rate has no significant impact on private investment and accepting the alternative hypothesis that exchange rate has a significant impact on private investment in Nigeria.

4. CONCLUSION AND POLICY RECOMMENDATIONS

The study attempted to examine the effect of government fiscal policy on private investment in Nigeria from 1999-2022 using Auto-regression Distributed Lag Model (ARDL) technique method. From the regression analysis, it is observed that inflation, government tax revenue, government recurrent expenditure, government capital expenditure, leading interest rate and exchange rate conform to the a priori expectation of the study and that all the variables of the study are statistically significant in explaining private investment in Nigeria. The F-test conducted in the study shows that the model has a goodness of fit and is statistically different from zero. In other words, there is a significant impact between the dependent and independent variables in the model. Finally, both R^2 and adjusted R^2 show that the explanatory power of the variables is extremely high and very strong in explaining private investment in Nigeria. Based on the findings from the empirical analysis, the following recommendations were made: The government should adopt a contractionary monetary policy by reducing the supply of money within the economy by lowering the prices of bonds and rising interest rates. This will reduce consumption, prices fall and also sows down inflation. The government should encourage private investment by implementing moderate tax revenue. This will encourage saving and investment. The government should increase spending on basic and public infrastructure. This will provide the needed environment for private investment. The government should promote a stable interest rate and strengthens the exchange rate. This will improve the Some stock prices as companies pay less for loans and raw materials, causing higher profits. It will make the economy richer, and increases the purchasing power.

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