EFFECTS OF FISCAL AND MONETARY POLICIES ON PRIVATE SECTOR INVESTMENT IN NIGERIA

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Abstract

The study investigated the effects of fiscal and monetary policies on private sector investment in Nigeria from 2000 to 2020. Data were sourced from Central Bank of Nigeria Statistical Bulletin and National Bureau of Statistics. The explanatory variables include monetary policy rate, real exchange rate, broad money supply, outstanding balance of certificates of deposit, taxes, and government expenditure, while, the explained variable is private sector investment in Nigeria. he study employed ordinary least squares multiple regression analysis and error correction mechanism in its data estimation. The findings of the study revealed that monetary policy rate, real exchange rate and outstanding balance of certificates of deposit have negative and significant effect on private sector investment in Nigeria. Taxes had negative but insignificant effect on private sector investment in Nigeria, while, broad money supply and government expenditure had positive and significant effect on private sector investment in Nigeria, The study recommends adopting persuasive monetary policy measures to direct banks to provide funds at controlled or subsidized interest rate for private sector investment. The study further recommends that the federal government of Nigeria should cut down on her recurrent expenditure profile.

Keywords: *Money supply, monetary policy rate, private sector investment, certificates of deposit*

Introduction

Fiscal policy involves the use of parameters such as taxation, budget and quotas that will influence government revenue and expenditure with a view to achieving macroeconomic objectives. Government can use fiscal policy to stimulate the economy through manipulation of taxes and expenditure. Monetary policy on the other hand is a deliberate effort by the monetary authority to control the money supply and the credit conditions for the purpose of achieving certain macroeconomic objectives which might be mutually exclusive. The objectives of monetary policy include price stability, maintenance of balance of payments equilibrium, promotion of employment and output growth, and sustainable development. These monetary policy objectives are necessary for the attainment of internal and external balance, and to increase output (Gertler & Gilchrist, 1994; Thuy, Anhand Diem, 2020; Kenechukwu, Chidi-Okeke, Chris-Ejiogu & Awe, 2021). Discussing the impact of monetary policy on private sector investment Kahn, 2010; Brima, & Brima, (2017) observed that monetary policy objectives are concerned with the management of multiple monetary targets among them price stability, promotion of growth, achieving full employment, smoothening the business cycle, preventing financial crises, stabilizing long-term interest rates and the real

exchange rate. The effectiveness of monetary policy on the real economy is still an issue under

intense debate particularly related to the efficacy of the transmission mechanism. Following years of declining economic growth particularly in Africa, consensus has emerged on the importance of firstly increasing total investment as well as promoting private-sector development and increasing its share of total investment for long-term growth (Oshikoya, 1994; Zaagha, (2020).

Previous researches have dealt separately with the effect of monetary policy and fiscal policy on private sector investment. Kenechukwu, Chidi-Okeke, Chris-Ejiogu & Awe (2021) investigated the causal relationship between fiscal policy and private investment in Nigeria (1986-2019) and found that fiscal policy instruments granger causes private investment in Nigeria within the period of the study. Zaagha (2020) analyzed the effect of money supply on private sector funding in Nigeria. The purpose of the study was to examine the extent to which monetary policy affect private sector funding in Nigeria. The empirical findings revealed that money supply explains 82.1 percent variation on credit to core private sector, 85.2 percent and 23.4 percent of the variation in credit to private sector and credit to small and medium scale enterprises sector. The study conclude that money supply has significant relationship with credit to private sector, credit to core private sector and credit to small and medium scale enterprises sector. Thuy, Anh& Diem (2020) looked at the relationship between monetary policy and private investment using Vietnam's provincial data and a system generalized method of moment (GMM) framework. The study revealed that private investment is positively affected by respective monetary policies through broad money, domestic credit and interest rate channels, while, no credible evidence regarding the exchange rate's effect was observed. They also found a co-movement between real interest rate and private investment in the economy over the two development stages (pre- and post-2012).

In a similar research, Osazee, & Mayowa (2019) examined the effect of fiscal policy on public private investment in Nigeria from 1981 to 2016 using the ARDL technique. The results showed that expenditures tend to exert positive impact on investment in both the short-run and long-run with a weak negative influence. Studies such as Abbas & Christensen (2007), focused on how various monetary and fiscal components crowd out private sector using panel data from several countries. Unlike studies that focus on one aspect of either monetary or fiscal policy effects on private sector investment, this study takes a dynamic approach to study the effect of fiscal and monetary policies on private sector investment in Nigeria. Based on this understanding, there exists a gap in literature with regard to understanding the dynamics of monetary and fiscal policy effects on private sector investment. The issue of appropriate mix of the two policy options is still controversial especially in developing countries like Nigeria. This study therefore fills this gap by determining the appropriate policy mix of monetary and fiscal policy instruments that will stimulate private sector investment and expand output in Nigeria.

However, in a more specific manner the following set objectives were examined:
1. To examine the effect of Monetary policy rate on private sector investment in Nigeria.
2. To assess the effect of Real exchange rate on private sector investment in Nigeria.
3. To evaluate the effect of Money supply on private sector investment in Nigeria.
4. To ascertain the effect of outstanding balance of certificates of deposit on private sector investment.
5. To investigate the effect of taxes on private sector investment in Nigeria.
6. To determine the effect of Government expenditure on private sector investment in Nigeria.

Review of Related Literature

Conceptual Review

Fiscal Policy and Private Sector Investment: Fiscal policy is the use of government expenditure and taxes to influence macroeconomic variables. Increased government expenditure is an incentive and stimulant for profit maximizing investors, which prompts them to expand their establishment (Barro & Martin, 1992; Trotman, 1997). On the other hand, public expenditure can crowd-out investment if it is financed by increasing taxes or through borrowing. Heavy tax burden reduces the disposable income for individuals, which results to a reduction in consumption, lower savings and hence lower investment. Borrowing to finance government expenditure has a crowding-out effect on investment. When the public and private sectors compete for funds in the financial market, cost of borrowing increases, which is a disincentive to the private sector. Public expenditure financed through borrowing implies that more taxes will be levied in the future to repay the debt, which is a disincentive to investors (Ahmed, 1999). Taxes have negative effect on cost of production and on profitability. This is because most of the resources available for private sector investment are diverted and channeled to public use, thereby crowding-out private investment. Import taxes can also be used to protect local infant industries from unhealthy competition posed by cheap imports. This promotes private investment in the industries that produce import substitutes. However, if import taxes are imposed on inputs and capital used by local producers, it will increase cost of production, which discourages private investment (Bhatia, 1998). Taxes can also be used in promoting investment in certain economic zones initially not very popular to investors. This is applicable in Nigeria where the government extends tax holidays, tax exemptions, remissions and other tax benefits to the investors in specified or preferred sectors of the economy.

Monetary Policy and Private Sector Investment: Monetary policy is seen as influencing private sector investment via three routes; namely the interest rate channel, the demand for money and the credit channel. In less developed countries Kahn (2010) posits that underdeveloped financial systems and weak interest rate responsiveness inhibit the use of the interest rate and demand for money channels due to limited applicability, while he argues that monetary policy is effective on the asset side of financial intermediary balance sheet (the credit channel view) where it tends to have greater impact. Bernanke & Gertler (1995) classify three channels of monetary policy as the balance sheet channel, the bank-lending channel and the

credit channel. The balance sheet channel focuses on monetary policy effects on the liability side of the borrowers' balance sheets and income statements, including variables such as borrowers' net worth, cash flow and liquid assets whilst the bank lending channel centers on the possible effect of monetary policy actions on the supply of loans by depository institutions. Through the control of monetary policy targets such as the price of money, the quantity of money and reserve money amongst others; monetary authorities directly and indirectly control the demand for money, money supply, and hence affect output and private sector investment. This view is supported by Kahn (2010) who argues that monetary policy objectives can affect the real sector through the injection and absorption of liquidity, or by affecting the level of reserve money, or through the money multiplier, which is used to manipulate the liquidity position of the economy. Hare & Fofie (2009) posits that countries who only invest 5- 10 percent of their GDP are unlikely to grow very rapidly as the more successful economies have usually achieved investment rates of at least 25 percent of GDP sometimes considerably higher.

Theoretical Underpinning
This study relied on two theoretical constructs or paradigms - Credit Channel Theory and Keynesian Approach.

Credit Channel Theory: Analysis of the relationship between monetary policy and output reveals that credit plays a significant role. Kahn (2010) explains that conventionally changes in short-term interest rates brought about by the central bank, through open-market operations may change the cost of capital, and hence, the rate of fixed investment. According to Bernanke & Gertler (1995); Kahn (2010), the effects of monetary policy on GDP is weak and this led to the development of the credit channel theory, whose basic premise is that market frictions create a spread between a firms' internal and external sources of fund. They argued that changes in "external finance premium" can better explain movements in investment than can interest rates and, hence, overall output. Kahn (2010) also posits that the credit transmission channel affects the supply or relative pricing of loans by banks. As tighter monetary policy causes banks to lose the use of some funds which cannot be replaced with other sources of funds such as certificates of deposit or equity, then the relative cost of funds will increase, decreasing the supply of loans to bank-dependent borrowers who are squeezed out, due to an increase in the external finance premium Tobias & Mambo (2012). In developed financial markets generally, firms have access to other sources of financing, unlike Nigeria where financial markets are not as well developed and only large corporate firms can borrow from external markets while the smaller firms have access only to internally generated funds and bank borrowing if they meet their requirements.

Keynesian Approach: Keynes (1936) first theorized the existence of an independent investment function in the economy. The study observed that, although savings and investment must be equal at equilibrium, savings and investment decisions were made by different people. The implication of this position was that there was no reason why ex-ante savings should equal ex-ante investments. Keynesian approach further proposed that firms ranked various investment projects depending on their internal rate of return. Thus, given a rate of interest or cost of capital, an investor would choose a project whose internal rate of return exceeded the rate of interest. The Keynesian economists also formulated the accelerator theory, which made

investment a linear proportion of changes in output. In the accelerator model, expectations, profitability and capital costs played no role. A more general form of the accelerator model was the flexible accelerator model. The basic notion behind this model was that, the spread between the existing capital stock and the desired capital stock, the greater would be the firm's rate of investment. Within the framework of the flexible accelerator model, output, internal funds, cost of external financing and other variables may be the determinants of desired capital stock. Under the Keynesian approach, fiscal policy could influence investment by either its implication on interest rates or by determining the speed of adjustment between actual and desired investment (Blejer & Khan, 1984).

Empirical Reviews
Several studies have been conducted to explain issues on fiscal and monetary policy theoretically, but none took the construction of statistical model that explains their effects and analyse it with respect to private sector investment in Nigeria.

Kenechukwu, Chidi-Okeke, Chris-Ejiogu & Awe (2021) investigated the causal relationship between fiscal policy and private investment in Nigeria (1986-2019) using secondary data from Statistical bulletin of Central Bank of Nigeria. Granger Causality techniques was employed to test the causal relationship between the independent variables (Tax Revenue, Oil Revenue, Total Expenditure and Public Debts) on the dependent variable (Private Investment) while VAR was used to test the short run relationship. The study revealed that fiscal policy instruments granger causes private investment in Nigeria within the period of the study. The study recommends that Government should liberalize or privatize NNPC and the Power sector as these critical sectors will help the growth of the private sectors and reduce unemployment in the country. The study further recommends provision of tax incentives to private sectors by the government to help the growth of private investment in the country.

Zaagha (2020) analysed the effect of money supply on private sector funding in Nigeria. The purpose of the study was to examine the extent to which monetary policy affect private sector funding in Nigeria. Time series data was sourced from Central Bank of Nigeria Statistical Bulletin from 1985-2018. Credit to private sector, credit to core private sector and credit to small and medium scale enterprises sector was used as dependent variables while narrow money supply, broad money supply, private sector demand deposit was used as independent variables. The empirical findings revealed that money supply explains 82.1 percent variation on credit to core private sector, 85.2 percent and 23.4 percent of the variation in credit to private sector and credit to small and medium scale enterprises sector. The study conclude that money supply has significant relationship with credit to private sector, credit to core private sector and credit to small and medium scale enterprises sector. From the findings, the study recommends that Central Bank of Nigeria should induce the variations of the amount of money changes through the nominal interest rates. That the monetary authorities should ensure adequate quantity of money supply that positively affect private sector funding in Nigeria.

Thuy, Anhand Diem (2020) looked at the relationship between monetary policy and private investment using Vietnam's provincial data and a system generalized method of moment (GMM) framework. To capture monetary policy's effect on private investment, the study used money supply, domestic credit to the private sector, interest rate and exchange rate as proxies. The study found that private investment is positively affected by respective monetary policies

through broad money, domestic credit and interest rate channels, while, no credible evidence regarding the exchange rate's effect was observed. They also found a co-movement between real interest rate and private investment in the economy over the two development stages (pre- and post-2012). Another notable finding is that economic development prospects of localities, which attract great attention and cause an intense competition between domestic and foreign investors, appear to be a major barrier to investment decisions of private firms.

In a similar research, Osazee, & Mayowa (2019) examined the effect of fiscal policy on publicprivate investment in Nigeria from 1981 to 2016 using the ARDL technique. The results showed that expenditures tend to exert positive impact on investment in both the short-run and long-run with a weak negative influence. The policy implication of the findings is that fiscal policy needs to look more inwards in terms of a long-term expansion of investment in the country. Continued focus on external financing for long-run investments can create intertemporal instability in investment in Nigeria.

Brima, & Brima, (2017) examined the rate at which changes in monetary policy in Sierra Leone has affected the behavior of private sector investments for the period 1980-2014. Using recent econometric techniques, the results suggested that money supply and gross domestic saving exert positive and statistically significant effect on private sector investments whereas treasury bills rate, inflation and gross domestic debt exert a negative effect on private sector investment in Sierra Leone.

Employing time series econometric techniques such as, co-integration and error correction techniques within an ARDL framework, Hailu, & Debele, (2015) examined the effect of monetary policy on private sector investment in Ethiopia using annual data for the period 1975-2011. Results suggested that private investment is positively and significantly influenced in the short-run by public investment, money supply, and a real output but negatively and significantly by real exchange rate while, real interest rate is found to have insignificant and negative sign in line with macro-economic theory. Moreover, in the long run, the result shows a positive and significant effect of public investment, real GDP and broad money supply while real exchange rate negatively and significantly influenced private investment. However, real interest rate is found to have a positive but insignificant effect in the long run well. The conclusion is that monetary policy measures are more influential than fiscal policy in promoting private investment in Ethiopia via improving financial resource availability for investment.

Tobias & Mambo (2012) investigated the impacts of monetary policy on private sector investment in Kenya from (1996-2009) by tracing the impacts of monetary policy through the transmission mechanism to explain how investment responded to changes in monetary policy. They found that government domestic debt and Treasury bills rate are inversely related to private sector investment, while broad money supply and domestic savings have positive effect on private sector investment consistent with the IS and LM models.

Baum & Gerrit (2011) looked at the impact of fiscal policy on economic activity over the business cycle–evidencefromathresholdvectorautoregressions(VAR)framework,thestudy

analyzed the quarterly German data from (1976–2009) in a threshold SVAR, they found

that hiking spending yields for a short-term , fiscal multiplier of around 0.70, while the fiscal multiplier resulting from an increase in taxes and social security contribution is-0.66, in addition they found important implications for the optimal fiscal policy mix over different stages of the business cycle.

Methodology

Model Specification

The study adapted a modified version of Tobias and Mambo (2012) model in which they researched on the effects of monetary policy on private sector investment in Kenya. In their study, private sector investment is the dependent variable, while the explanatory variables are: GDD (Government Gross Domestic Debt), GDS (Gross Domestic Savings), MS (Money Supply), T-bills are the 91-day Treasury bills rate. To ensure that appropriate explanatory variables are captured in the model, it was modified and presented as follows:

$$PSI = f(MPR, EXC, M2, OBC, TAX, GEP) \text{-- (3.1)}$$

Where: PSI: The private sector investment in Nigeria; MPR: The monetary policy rate by the Central Bank of Nigeria; EXC: Real exchange rate; M2: Broad money supply; OBC: The outstanding balance of certificates of deposit; TAX: Taxes; GEP: Government expenditure; The model is therefore stated as follows:

$$PSI = a_0 + b_1 MPR + b_2 EXC + b_3 M2 + b_4 OBC + b_5 TAX + b_6 GEP + \mu i \text{ ....(3.2)}$$

Where: a_0=Intercept of the regression line; b_1 - b_6=Coefficients to be estimated; μi =error term

Equation 3.2 stated in logarithm form as follows:

$$LogPSI = a_0 + b_1 logMPR + b_2 logEXC + b_3 logM2 + b_4 OBC + b_5 logTAX + b_6 logGEP + \mu_i \text{-------------- (3.3)}$$
a prior expectation for the study is as follows:

$B_1, b_2, b_4,$ and $b_5 < 0$ while $b_3,$ and $b_6 > 0$

All annual data in equation (3.3) were gathered mainly from Statistical Bulletin of the Central Bank of Nigeria and National Bureau of Statistics (NBS) from 2000 to 2020 and are measured in natural logarithmic form.

Data Analysis Techniques

The study made use of ordinary least squares multiple regression analysis in its data estimation. In order to avoid spurious results, unit root tests were first carried out on each series in equation (3.3) using both the Augmented Dickey-Fuller (ADF) and Philip-Perron (PP) tests. Cointegration tests were examined through Johansen co-integration techniques and these were followed by the estimation of equation (3.3) using error correction modelling ECM) techniques. The results of the unit root tests; co-integration and ECM are reported and discussed in section four.

Results and Discussion

Unit Root Tests
Table 1: ADF Unit Root Test Result

Variable	ADF Values		Critical Values @ 5%		Order of Integration
	Level	1st Diff.	Level	1st Diff.	
D(LNPSI)	-0.026471	-5.089294	-2.954021	-2.957110	1(1)
D(LNMPR)	-2.848183	-6.607050	-2.954021	-2.957110	1(1)
D(LNEXC)	-1.411715	-6.115307	-2.954021	-2.957110	1(1)
D(LNM2)	-2.574928	-6.053073	-2.954021	-2.957110	1(1)
D(LNOBC)	-1.168033	-4.756366	-2.954021	-2.957110	1(1)
D(LNTAX)	-2.038659	-4.841456	-2.954021	-2.957110	1(1)
D(LNGEP)	-2.336534	-5.162384	-2.954021	-2.957110	1(1)

Source: E-view statistical package, version 8.0

A careful review of the result in table 4.1 shows that when the unit root test was conducted at level, all the variables are non-stationary because they have their Augmented Dickey Fuller (ADF) statistic less than Mackinnon critical value. This led to the testing for stationarity at first difference. All the variables are stationary at first difference because they have their respective ADF statistics greater than Mackinnon critical value at 5% and are integrated of order 1 (i.e. I (1)).

The unit root test was also conducted using Phillips–Perron test. From the output table 4.2 below, the study recorded a mixed bag scenario. While some variables turned stationary at 'first difference', others did at 'second difference', meaning that the data sets are not spuriously related.

Table 2- Summary of Unit Root Test

	T-Statistics.	CriticalValue@5%	Order of Integration	Sig.
PSI	-6.12	-2.97	2nd Diff	**
MPR	-5.41	-2.97	1st Diff	**
EXC	-3.98	-2.97	1st Diff	**
M2	-9.35	-2.97	2nd Diff	**
OBC	-8.75	-2.97	2nd Diff	**
TAX	-7.02	-2.97	2nd Diff	**
GEP	-7.29	-2.97	1st Diff	*

Source: E-view statistical package, version 8.0

Co-integration
　　　The essence of co-integration test is to ascertain if a long-run equilibrium relationship exist among variables of the model. Tables 4.3 and 4.4 show the summary of result from analysis conducted on the specified model.

Table 3: Johansen Co-integration Test Result (trace statistic)

Hypothesized No. of CE(s)	Trace Statistic	0.05 Critical value	Prob.
None *	178.2886	125.6154	0.0000
At Most 1*	97.23572	91.73366	0.0363
At Most 2	65.55673	69.81889	0.1224
At Most 3	41.10830	47.85613	0.2187
At Most 4	22.05030	29.79707	0.3545
At Most 5	9.813748	15.49471	0.2953
At Most 6	2.205028	3.841466	0.1376

Source: E-view statistical package, version 8.0

Trace statistic test indicates 2 co-integrating equations at 5% level. *Indicates significance

Table 4: Johansen Co-integration test result (Max – Eigen value)

Hypothesized No. of CE(s)	Max-Eigen Statistic	5% Critical value	Prob.
None *	81.05302	46.23142	0.0000
At Most 1*	41.67897	40.07757	0.0409
At Most 2	24.44843	33.87687	0.4233
At Most 3	19.05800	27.58434	0.4101
At Most 4	11.23656	21.13162	0.6237
At Most 5	7.608721	14.26460	0.4199
At Most 6	2.205028	3.841466	0.1376

Source: E-view statistical package, version 8.0

Max-Eigen statistic indicates 2 co-integrating equation at 5% level
*indicates significance
Based on the co-integration test results in tables 4.3 and 4.4, the trace statistic indicates that there exist two co-integrating equations at five percent level of significance. The cointegration test based on the Max-Eigen value also indicated the existence of two cointegrating equation at five percent level of significance. This implies that there exists a long run equilibrium relationship amongst the variables adopted in the study.

Error Correction Model (ECM)
Given that co-integration exists, the study estimated an ECM of the form in Equation 4.1. The attractiveness of the ECM is that it provides a framework for establishing links between the short-run and long-run approaches to econometric modelling.

$$\Delta\log(PSI)_t = \alpha_o + \sum_{i=0}^{n} \theta 1\Delta\log(PSI)t-1 + \sum_{i=0}^{n} a1\Delta\log(MPR)t-1 +$$

$$\sum_{i=0}^{n} a2\Delta\log(EXC)t-1 + \sum_{i=0}^{n} a3\Delta\log(M2)t-1 \sum_{i=0}^{n} a4\Delta\log(OBC)t-1 +$$

$$\sum_{i=0}^{n} a5\Delta\log(TAX)t-1 + \sum_{i=0}^{n} a6\Delta\log(GEP)t-1 + \lambda ECM + et\_\_\_(4.1)$$

The error correction mechanism involves developing two models: the over-parameterized model which involves leading and lagging of the variables and the parsimonious model that introduces short-run dynamism into the long-run equilibrium.

Table 5: Over – Parameterized error correction mechanism
Dependent Variable: D(PSI)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNMPR)	0.344912	0.233806	1.094349	0.3882
D(LNMPR(-1))	-0.035101	0.009228	-2.720047	0.0450
D(LNEXC)	-0.087782	0.037695	-2.050230	0.0481
D(LEXC(-1))	-0.182565	0.096150	-1.898741	0.0637
D(LNM2)	-0.097608	0.005471	-2.194864	0.0483
D(LNM2(-1))	0.174941	0.168154	1.099828	0.2759
D(LNOBC)	0.276643	0.148273	1.865768	0.0785
D(LNOBC(-1))	-0.466237	0.129980	-3.333592	0.0037
D(LNTAX)	0.047018	0.024242	1.939359	0.0980
D(LNTAX(-1))	0.286778	0.145565	1.283123	0.2357
D(LNGEP)	-0.681389	0.180847	-3.570336	0.0022
D(LNGEP(-1))	-0.390829	0.212257	-1.841300	0.0921
ECM(-1)	-0.239782	0.124358	-2.152090	0.0486
C	0.261870	0.043862	5.742384	0.0000

R-squared	0.786257	Mean dependent var	0.259319	
Adjusted R-squared	0.642442	S.D. dependent var	0.242199	
S.E. of regression	0.185916	Akaike info criterion	-0.455039	
Sum squared resid	0.496505	Schwarz criterion	0.186221	
Log likelihood	24.28062	Hannan-Quinn criter.	-0.342479	
F-statistic	3.892277	Durbin-Watson stat	1.657444	
Prob(F-statistic)	0.009264			

Source: E-view statistical package, version 8.0

Table 6: Parsimonious Result for the Model Dependent Variable: LNPSI

Variable	Coefficient	Std error	t-statistic	Prob.
D(LNMPR (-1))	-0.201995	0.049031	-4.1198	0.0305
D(LNEXC)	-0.189088	0.068234	-2.7712	0.0415
D(LNM2)	0.267168	0.049235	5.4264	0.0046
D(LNOBC(-1))	-0.244571	0.067373	-3.6301	0.0343
D(LNTAX)	-0.092174	0.109023	-0.8455	0.3575
D(LNGEP)	0.186351	0.036158	5.1538	0.0079
ECM (-1)	- 0.864662	0.201069	-4.3004	0.0243
C	0.382641	0.052653	7.2673	0.0000

R – Squared = 0.952634
F – Statistic = 23.509837 DW
– Statistic = 2.00324

Source: E-view statistical package, version 8.0

Critical values: (a) t – statistic, $t_{0.05}$ = 2.042; (b) F – statistic, $f_{0.05}$ (6,27) = 2.42

The parsimonious result shown in table 4.6 is summarized in model equation 4.2.

D(LNPSI) = 0.383 – 0.20LNMPR (-1) – 0.19 LNEXC + 0.27LNM2 – 0.24LNOBC(-1) - 0.09LNTAX +

   (0.0490)   (0.0682)   (0.0492)   (0.0673)   (0.1090)

0.19LNGEP ………………………………………………………….(4.2)

(0.03616)

The standard error statistics are in parenthesis. The parsimonious result for the model adopted in this study is appraised based on the statistical and econometric criteria. The study reveals that the constant term (intercept) term has a positive sign which is consistent with economic *a priori* expectation. This implies that if all the explanatory variables are held constant, PSI will increase by 38%. The computed t-statistic for constant term (7.26) exceeds the tabulated (critical) t-statistic (2.04) at five percent level of significance. Thus, we conclude that the constant term is statistically significant at five percent level. The coefficient of the error correction term appeared with the expected negative sign and it is significant. The coefficient of the error correction mechanism (ECM) is -0.864662. The implication is that, private sector investment in Nigeria has an automatic mechanism and responds to deviations from equilibrium in a balancing manner in the long run. This result indicates that private sector investment in Nigeria responds to deviations from equilibrium arising from fiscal and monetary policy at the speed of 87 percent. Thus, in each year, it takes a speed of 87 percent for the fiscal and monetary policy to restore distortions in private sector investment in Nigeria back to its equilibrium position. The coefficient of determination (R – squared) showed that 95 percent of the variations in private sector investment are caused by changes in monetary policy rate, real exchange rate, broad money supply, outstanding balance of certificates of deposit, taxes and government expenditure in Nigeria. Therefore, the remaining 5 percent variations in private sector investment are due to other factors not included in the model. The computed F- statistics (23.51) exceeds the tabulated (critical) F – statistics (2.42) and this indicates that the entire model adopted in the study is significant and reliable for policy making. The Durbin – Watson statistics (2.00324) showed that there is no evidence of serial autocorrelation.

Discussion of Results

The result shows that there is a negative and significant relationship between lagged one year monetary policy rate and private sector investment in Nigeria. From the result, one percent rise in monetary policy rate leads to 10 percent reduction in private sector investment in Nigeria in the short run. The computed t-statistic for lagged one year monetary policy rate (4.1198) in absolute terms is greater than the critical value (2.04) at five percent level of significance. The probability value of MPR (0.0305) shows that it is less than the test significant level (0.05) (i.e $P<0.05$). This result is in line with the empirical result provided by Greene (2000) in which interest rate seems to work against private sector investment. However, it is insignificant in influencing the sector.

The result on real exchange rate showed that it has a negative and significant effect on private sector investment in Nigeria. From the result, one percent increase in real exchange rate leads to 18.9% decrease in private sector investment in Nigeria. The computed t-statistic (2.7712) in absolute terms is less than the critical (tabulated) t-statistic (2.04) at five percent level of significance. The probability value of real exchange rate (0.0415) is less than the test significant level (i.e. P>0.05). Devaluation or falling value of the naira might cause the cost of imported capital to increase, thus reducing private sector investment. This contradicts the theoretical argument which states that depreciation and devaluation of domestic currency have positive impact on private investment by boosting sectors investing on export and import substitution industries. For instance, Magnus (2010) found that real exchange rate have a positive impact on private sector investment. However, the result of this research work is supported by empirical findings of Maganga (2012) as devaluation seems to decrease private sector investment. . It also contradicted the empirical investigation of Chichi (2011) showing positive impact of real exchange rate on private investment. But it is in agreement with the empirical analysis of Acosta (2000) in which a devaluation seems to decrease investment substantially. Thus, real exchange rate change seemed to have had an adverse effect on short term investment, affecting mainly the sectors most exposed to foreign competition (non-exportable) and increases cost of production. The result is also in contrast with Tarek (2005) in which the study found that depreciation would have a positive effect on private sector investment.

The result on broad money supply reveals that it has a positive and significant effect on private sector investment in Nigeria. From the result, one percent rise in the M2 leads to 27% increase in private sector investment in Nigeria. The computed t – statistic for M2 (5.4264) in absolute terms is less than the tabulated (critical) t-statistic (2.04) at five percent level of significance. The probability value of M2 (0.0046) is less than the test significant level (i.e. P>0.05). It is evidenced that the result validates the hypothesis of positive impact of money supply on private sector investment. When money supply increases, with extra money circulating within the economy, the purchasing power of all sectors of the economy- households, business and government- is enhanced. Thus, consumption expenditures, investment expenditures, government purchases all increases, resulting in an increase in aggregate demand and hence investment.

The impact of the outstanding balance of certificates of deposit on the private sector investment in Nigeria was negative. From the result, one percent increase in outstanding balance of certificates of deposit leads to 25% decrease in private sector investment in Nigeria. The computed t-statistic for outstanding balance of certificates of deposit (3.6301) in absolute terms is greater than the critical (tabulated) t statistics (2.04) at five percent level of significance. The probability value of outstanding balance of certificates of deposit (0.0343) is less than the test significant level (i.e. P < 0.05). This result is supported by empirical study of Khan (2010) that confirmed direct relationship between private sector investment and monetary policy. The credit views of monetary policy suggest that the tightening of monetary policy will force banks to reduce their loans and securities. A change in the outstanding balance of certificates of deposit impacts on the interest rate at which credit is provided which in turn affects the growth of deposits held with commercial banks.

The impact of taxes on the private sector investment in Nigeria was. Based on T-test, the computed t – statistic for tax (0.8455) is less than the critical (tabulated) t – statistic (2.04) at five percent level of significance. The probability value of tax (0.3575) is greater than the test significant level (i.e. p>0.05). The negative impact of Tax revenue on private sector investment is in line with the findings of past works including Hermes & Lensink (2001); Alesina et al (2002); Vergara (2010). However, it is in contrast with the works of Soli *et al* (2008) who identified that taxes on internal products and services as well as direct taxes on income and wealth have positive effects on domestic private investment.

The analysis of the impact of government expenditure on private sector investment revealed that it has positive and significant effect on private sector investment in Nigeria. Based on T-test, the value (5.1538) in absolute terms is greater than the critical (tabulated) t – statistics (2.04) at five percent level of significance. The probability value of government expenditure (0.0079) is less than the significant p-value (0.05) (i.e. p<0.05). The findings of this study showed that there exists a crowding in effect of government expenditure on private sector investment in Nigeria. This is consistent with the results of Outtara (2004); Vergara (2010); Marattin & Salotti (2010). It is also consistent with the Keynesian argument that government fiscal operations stimulate aggregate demand and this in turn, leads to a boost in private sector investment. This is in contrast with that of Acosta (2000) that confirms the crowding-out effect of public investment and suggests that there is a sort of competition for resources between the public and the private sectors, at least in the short run.

Summary of Findings, Conclusion and Recommendations

Summary of Findings

Based on the results of the analysis, the major findings of the study are summarized below:

1. Monetary policy rate has negative and significant effect on private sector investment in Nigeria.
2. Real exchange rate also had negative and significant impact on private sector investment in Nigeria.
3. Money supply has positive and significant effect on private sector Investment in Nigeria.
4. There is a significant negative relationship between outstanding balance of certificates of deposit and private sector investment.
5. The study found that taxes have negative and insignificant effect on private sector investment in Nigeria.
6. Government expenditure had positive and statistically significant effect on private sector investment in Nigeria.

Conclusion

This study examined the effect of monetary policy rate, real exchange rate, and broad money supply, outstanding balance of certificates of deposit, taxes and government expenditure on private sector investment in Nigeria. Data set from 2000 to 2020 were sourced from Central Bank of Nigeria, Statistical Bulletin and National Bureau of Statistics respectively. The study employed ordinary least squares multiple regression analysis in its data estimation. This study therefore concludes that fiscal and monetary policies have direct effect on private sector investment in Nigeria.

Recommendation

The study recommended adopting persuasive monetary policy measures to direct banks to strengthen their role in providing funds for private sector investment, as well as the need for fiscal policy in Nigeria to make provision for granting tax exemptions on private investments to encourage private sector investment. The federal government of Nigeria should cut down on her recurrent expenditure profile. Obviously, there is need for a policy shift from the present protective-sectors - dominance to productive- sectors policy framework to enhance productivity. Macroeconomic projections should guide the overall level of expenditure and as such, government projections need to be more realistic, internally consistent and based on more accurate and timely information. Fiscal and monetary policies formulators in Nigeria need to enact investor friendly policies that will encourage, promote, and provide a conducive and enabling environment for private sector investment.

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