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PRICE OF FUNDS AND GROSS PRIVATE DOMESTIC INVESTMENT: EVIDENCE FROM NIGERIA

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ABSTRACT
The paper provided empirical evidence of price of funds in the financial market and domestic investment in Nigeria for the period 1986-2021. Time series data were extracted from the Central Bank of Nigeria (CBN) statistical bulletin and the National Bureau of Statistics annual digest. Ordinary Least Square (OLS) multiple regression model was employed. Empirical results indicated that price of funds negatively affected gross domestic private investments during the period. In addition, national income had a significant positive effect on gross domestic private investment in Nigeria, while inflation rate with a negative coefficient value significantly affected gross domestic private investment. Finally, exchange rate affected gross domestic private investment positively but was non-significant. The paper recommended, among other measures, that the monetary authorities should periodically review the monetary policy rate to stem the tides of inflation volatility with a view to promoting investments in the private sector for economic growth and prosperity of the citizenry.
Keywords: Price of funds, domestic investments, savings, inflation rate
JEL: D25, E31, E44, O16

INTRODUCTION
Price of funds, also known as cost of funds, is a crucial variable in the world of finance, because finance is the life wire of all economic units. Financial institutions acquire funds necessary for their operations through payment of interest on deposits. These funds are used for a variety of purposes, including investments, loans and advances, and statutory obligations. Cost of funds directly affects the profitability of financial institutions and, in turn, their ability to extend credit in the economy. Direct relationship exists between cost of funds and interest paid on deposits; the higher the cost of funds, the higher the interest paid on deposits, thereby decreasing bank's profitability margin.

Domestic investment is the commitment of financial resources into productive assets within an individual's country, boosting the economy. The measure of the amount of money invested by local businesses within their country is known as Gross Private Domestic Investment (GPDI). GPDI constitutes one component of GDP which economist use to weigh the level of economic activity in a country. It is the sum of non-residential investments, expenditures on businesses from capital goods such as factories, machineries, equipment, land and buildings. Mathematically, GPDI = C + P + I, where C is business expenditure on things like machines, tools, land and buildings, P is expenditure by landlords on renovation of existing buildings and construction of new buildings, I represents the charges on inventories held by business. Hence, Gross private domestic investment is achieved by summing up these three factors. The sum is usually expressed in a country's local currency.

The government's influence on the price of funds in domestic investment cannot be overstated. Massive investment is necessary to achieve a strong economy, especially in developing countries such as Nigeria, to tackle issues of poverty and unemployment (Muhammad 2004). Romanu and Ciceal (2000) posited that the volume of investment in an economy leads to economic increase, through increased productivity, with improvement in the standard of living. Bosco & Emerence (2016) argued that the rate of growth in an economy is proportional to the rate of investment. Uremadu (2016) postulated that availability of investible funds to boost economic growth is dependent on price of funds and other factors such as exchange rate, inflation rate amongst others. Since economic growth depends on investment, there is a need to promote interest rate friendly investment to boost economic growth.

Nigeria macroeconomic indicators showed the abysmal performance of domestic investment for the period 1986 to 2016 (CBN, 2016). For instance, domestic investment dropped from 12.3% of GDP in 1991 to 8.3% of GDP in 1992, occasioned partly by reduced public investment, which decreased during the period. Again, domestic investment increased to 12.5% in 1993 and to 16% in 1994. Thereafter, fell continuously to 8.9% in 1996. Between 2001 and 2010, the ratio averaged 13%; it peaked at 16.2% in 2002 but fell again to 1.52% in 2010 (CBN, 2015; Oyedokun & Ajose, 2018). Nevertheless, from 2017 to 2021, domestic investment as a share of GDP experienced a slight increase of 15.5%, 19.8%, 25.4%, 27.5% and 33.8% (CBN, 2022). A mere look at the figure below will reveal domestic investment percentage of GDP in Nigeria is the lowest among the countries examined.

Over time, monetary authorities have used monetary policies to boost investment in Nigeria by adjusting interest rates. Prior to the 1986 financial liberalization, monetary authorities fixed interest rates administratively. In August 1987, as part of the deregulation framework under the Structural Adjustment Programme (SAP), the Central Bank of Nigeria introduced a market-based interest rate policy. In 2016, a new monetary policy was introduced, anchored on the monetary policy rate (MPR), but investment has yet to increase at the pace needed to make a significant impact on gross domestic product and poverty reduction. Despite numerous policies implemented by the country, price of funds remains unstable as well as investment level. In view of the foregoing, it has become imperative to empirically investigate the impact of price of funds on gross private domestic investment for the period 1986 to 2021.

LITERATURE REVIEW

Theoretical framework

The Financial Liberalization Theory, developed by McKinnon (1973) and Shaw (1973) presupposes that financial liberalization in financially repressed countries would induce higher savings, especially financial savings, increase credit supply, stimulate investment and help boost economic growth. They both claimed that interest rate regulations usually lead to low and sometimes negative real interest rate which is the cause of poor growth performance of developing countries. The initial framework of McKinnon and Shaw (1973) focused on financial repression. According to McKinnon and Shaw (1973) financial repression is the existence of interest rate ceilings, high reserve ratios, regulated lending, restriction to entry and exit in the banking activities, restriction of foreign currency transactions and directed ceilings in an economy. In other words, it is the restrictive measures undertaken by the government over the financial sector activities in a country which is likely to affect savings and investment. They claimed that the

importance of financial liberalization on a repressed economy cannot be overemphasized.

Financial markets can be liberalized and appropriation of credits be determined by the market forces. Therefore, real interest rates adjust to its equilibrium while the low yielding investments will be eliminated. This will lead to increase in overall efficiency of investment and total real supply of credit would in turn induce higher investment which will then boost the economy.

Another theory used is the liquidity preference theory of interest rate by John Maynard Keynes in 1936. The theory explains the role of interest rate with regards to two important factors: the supply of money and the public liquidity preference. In other words, the theory was developed to define the relationship between interest rate, liquidity preference and the supply of money. According to Keynes (1936), interest rate is the price for money. This implies that people will rather keep cash with themselves than invest in assets. Hence, people have a preference for liquid cash. Keynes (1936) further posits that, the determination of interest rate will be found in the money market and they are basically the supplies of money which are exogenously determined by central bank or monetary authorities. He further stressed on the role interest rate plays on investment demand schedule and proposed that the government monetary policies be directed at influencing the rate of interest. Keynes argued that interest rate allocates funds not just for investment purpose alone but for consumption purposes as well this is because the availability of low interest rate funds influences consumer propensity to consume.

Empirical review

Atseye, Obim and Aliyu (2021) investigated economic recovery, price of funds and domestic investment evidence of Nigeria for the period of 1986 -2020. Using time series data extracted from the central bank of Nigeria statistical bulletin and World Bank indicator. The study employed multiple regression and pre estimated techniques such as augmented Dickey – Fuller (ADF) Johansen co integration and error correction mechanism (ECM). The result indicated a long run relationship between economic recovery, price of funds and domestic investment in Nigeria.

Themba and Nicholas (2016) analyzed the macroeconomic determinants of economic growth using reviews of international literature. They reported that a qualitative narrator appraisal of the existing empirical literature on the key macroeconomic determinants of economic growth in developing and developed countries. The study finds that the determinants of economic growth are different when this distinction is used.

Egbetunde and Fadeyibi (2015) investigated the impact of investment on economic growth in Nigeria for the period of 1981 – 2012. Using the Vector error correction model (VECM), the study find that it is co integrated with economic growth in the country, that there is a long run relationship between investment and economic growth in Nigeria. The result further shows that investment granger causes economic growth in Nigeria.

Eregha (2020) investigated the relationship between interest rate and investment rate in Nigeria between 1970 and 2002. Its review study revealed that variation in interest rate played a negative and significant role in investment in the economy and demand for credit also has a negative and significant influence on interest rate variations in both the short run and the long run.

Haruna & Inuwa (2013) explored the relationship between savings and investment in Nigeria between 1980-2011 using autoregressive distributed lag (ARDL) and error correction model (ECM) to test if there is a short or long run relationship and it was found that there is a long run relationship between savings and investment. Similarly, Mahmudul and Gazi (2009) in their study in Jordan on stock investment (based on the monthly data from January 1988 to March 2003) found that interest rate exerts significant negative relationship with share price for markets of Australia, Bangladesh, Canada, Chile, Colombia, Germany, Italy, Jamaica, Japan, Malaysia, Mexico, Philippine, South Africa, Spain, and Venezuela. For six countries from this sample, they argued on the availability of significant negative relationship between changes of interest rate and changes of share price.

Olubanjo, Atobatele and Akinwumi (2020) simulated the interrelationship among interest rates, savings and investment in Nigeria, 1993 - 2020 using two stages least square method. Their result suggested that a marked decrease in the real lending rate would not result automatically into increased domestic investment.

Oyedokun and Ajose (2018) investigated the impact of domestic investment and economic growth in Nigeria. The model was subjected to a Co-integration test in order to determine the long run relationship between domestic investment, and economic growth in Nigeria for the period of 1980-2016 using Granger causality test to determine the causality. The results showed long run significant relationship exists between the variable examined and domestic investment. Granger-cause economic growth in Nigeria within the period under study. Thus, domestic investment positively influenced real gross domestic product.

METHODOLOGY AND DATA

The paper employs OLS multiple regression technique with historical data analyzed using E-views 12.0 statistical software and extracted from CBN statistical bulletin and National Bureau of Statistics annual digest for the period 1986 to 2021. The theoretical model for the impact price of funds has on gross private domestic investment is presented in the functional form as:

$$GPDI = F(POF, Y, INF, EXR) \ldots\ldots\ldots (i)$$

Econometric specification of the model is as follows:

$$GPDI = \beta + \beta_1 POF + \beta_2 Y + \beta_3 INF + \beta_4 EXR + et \ldots\ldots\ldots\ldots (ii)$$

Where GDPI = Gross private domestic investment (% of GDP), POF = Price of funds (real interest rate), Y = Income (national income), INF= Inflation (consumer price index), EXR = Exchange rate (effective rate), β_0 = Constant, $\beta_1 - \beta_4$ = Co-efficient of regression variables or regression co-efficient and E_O = Error term.

DATA ANALYSIS AND DISCUSSIONS

Table 1 shows descriptive statistics. Gross domestic private investment stood at an average mean of 31.23038, for the period 1986 to 2020. This positive value of GDPI implies gross domestic private investment was positive in Nigeria. The maximum value of GDPI was observed at 54.95059 while minimum value was observed at 14.90391. The difference between the maximum

and the minimum values, informed the range of data. The standard deviation for GDPI was 12.89265. This demonstrated that the GDPI was stable and did not deviate too much from the mean. The total value of price of funds (POF) shows its minimum value as 10.5000 in 2005 and maximum of 29.8000 in 2018; with a mean value and standard deviation of 18.62324 and 372730 respectively. Descriptive statistics also revealed that the mean value of national income (Y) was 67624.06 for the same period with its standard deviation of 57055.82. The maximum and minimum values for total national income were 175756.8 and 10941.8 respectively. Finally, the average value for inflation rate (INF) and exchange rate (EXR) stood at 20.52000 and 108.0132 with a standard deviation of 18.29306 and 91.70723 having their minimum values as 3.61000 and 2.02000 and its maximum value of 76.76000 and 306.9200.

Table 1: Result of descriptive statistics

	GDPI	POF	Y	INF	EXR
Mean	31.23038	18.62324	146577.9	20.52000	72.04927
Median	28.62619	17.77000	64616.80	12.41000	61.56509
Maximum	54.95059	29.80000	359192.0	76.76000	119.8770
Minimum	14.90391	10.50000	12379.46	3.610000	35.42390
Std. Dev.	12.89265	3.727307	146734.6	18.29306	29.27326
Skewness	0.279734	1.028583	0.532727	1.789631	0.393169
Kurtosis	1.800660	4.754467	1.467331	4.930622	2.743564
Jarque-Bera	2.481180	10.35595	2.322846	23.42942	2.630238
Probability	0.289214	0.005639	0.013040	0.000018	0.268442
Sum	1061.833	633.1900	2345247	687.6800	3672.450
Sum Sq. Dev.	5485.272	458.4629	32349.50	11042.99	277537.1
Observations	35	35	35	35	35

Furthermore, the analysis indicated that the measurement of skewness showed that GDPI and POF were found to be skewed to the left with mean values greater than the median while the skewness of Y, INF and EXR were rightly skewed. The coefficient of the kurtosis for all the variables except inflation rate (INF) was Platykurtic indicating that the variables GDPI, POF, Y and EXR were found to be below 3.0 relative to the normal distribution. The Jarque-Bera (JB) test value of 2.3228 for national income and 1.4536 for exchange rate with its corresponding probability of less than or equals to 0.05 percent confirms the normality of the series and suitability for generalization.

Regression results

Table 2 shows the OLS result of price of funds and domestic investment in Nigeria for the period 1986 to 2021. The constant value (0.04326) revealed that gross domestic private investment (GDPI) will experience a 4.3 percentage increase when all other variables (price of funds, national

income, inflation rate and exchange rate) are held constant. A -1.76 percentage change in price of funds will cause a corresponding percentage decrease in gross domestic private investment with statistic significance at 0.0350. The implication is that, one unit increase in price of funds decreases GDPI by 0.0176. This outcome is consistent with the results of Ogede (2013) and George-Anokwuru (2017) that real interest rate (i.e., price of fund) is negatively related to private domestic investment and statistically significant.

Table 2: OLS multiple regression result

Dependent Variable: GDPI
Included observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.043261	1.705628	1.539675	0.1496
POF	-0.017682	0.063387	-0.278955	0.0350
Y	0.685377	0.209314	3.341284	0.0469
INF	-1.438691	16.73425	-0.085973	0.0320
EXR	1.084196	4.206801	0.257725	0.5681

R-squared	0.956514	Mean dependent var	78775.56
Adjusted R-squared	0.945643	S.D. dependent var	41436.91
S.E. of regression	9660.873	Akaike info criterion	21.40187
Sum squared resid	1.12E+09	Schwarz criterion	21.59502
Log likelihood	-167.2150	Hannan-Quinn criter.	21.41176
F-statistic	124.8394	Durbin-Watson stat	1.673717
Prob(F-statistic)	0.000000		

In addition, the estimated coefficient for national income (Y) {0.6853} shows that a percentage change in the value of her national income will cause a corresponding percent increase in domestic private investment (GDPI) in Nigeria but was found to be statistically significant. This implies that, a unit increase in Y will lead to a corresponding percent increase of about 68 percent in GDPI. This finding is line with Ezeibekwe (2020) who provided evidence that an increase in income leads to an increase in aggregate demand and investment since income finances consumption and production.

Again, the estimated coefficient for inflation rate (INF) shows a negative value of -1.4386 with a significant probability value greater than 0.5 percent level of significance implying that a unit increase in inflation rate will lead to a 1.43 unit decrease in gross domestic private investment, consistent with Ezeibekwe (2020) that rising inflation tends to increase market interest rates, which erode the return of assets, thereby discouraging investments in financial assets. Exchange rate (EXR) affected GDPI positively at 1.0841 indicating that one unit increase in EXR increases GDPI by 1.0841 units. EXR and GDPI are statistical significant at 0.568, in contradiction to Kinyanjui, Muturi & Njeru (2021) which revealed a negative impact of exchange rate on domestic investment. Durbin-Watson test for the existence of autocorrelation indicated an absence of autocorrelation

among the successive variables as the value of 1.6737 lies between 0 and 2. The R-squared value of 96 percent deduced that the regression does have a goodness of fit and is not spurious. Additionally, the F-statistic (124.98394) indicates that there is little or no variation between the variables in the model; as its probability value was less than 0.05.

CONCLUSION AND RECOMMENDATIONS

Empirical results indicated that price of funds negatively affected gross domestic private investments during the period. In addition, national income had a significant positive effect on gross domestic private investment in Nigeria, while inflation rate with a negative coefficient value significantly affected gross domestic private investment. Finally, exchange rate affected gross domestic private investment positively but was non-significant. The paper recommended, amongst other measures, that the monetary authorities should periodically review the monetary policy rate to stem the tides of inflation volatility with a view to promoting investments in the private sector for economic growth and prosperity of the citizenry.

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