THE IMPACT OF REAL INTEREST RATE ON ECONOMIC GROWTH IN NIGERIA (1995 - 2010)

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ABSTRACT

This paper examines the linear relationship between real interest rate and economic growth in Nigeria between 1995 and 2010. Data for analysis were sourced from the World Bank Data 2012. The resource proves to be more reliable and valid for data on macroeconomic variables. The results of the Ordinary Least Square multiple regression technique indicate a positive relationship between real interest rate and Gross Domestic Product in Nigeria within the study period. Nevertheless, relationship between the variables was insignificant thereby accepting the null hypothesis at 0.5 percent confidence level, and the rejection of the alternative. On the other hand, contrary to a prior expectation of a positive relationship between investment and Gross Domestic Product growth rate, the result for the country is insignificantly negative. GDP increased with increase in money supply though insignificantly, too. Among others, the -study therefore recommends for policy action, that inflation rate which erodes the real interest rate be tracked down in the Nigeria economy, and that the economy be diversified away from oil sector to encourage more performance of the other economic sectors in the Gross Domestic Product.

Keywords: Real Interest Rate, Gross Domestic Product, Money Supply, Investment

INTRODUCTION

Economic growth of any country reflects its capacity to increase production of goods and services. The rate of economic growth measures the percentage increase in real national output during period of time, usually a year over the preceding year's level (Anyanwoncha 1993). Jhingan (2003) defines Economic growth as a process whereby the real per capital income of a country increases over a long period of time. According to him, economic growth is measured by the increase in the amount of goods and services produced in a country. These can be achieved by deregulation of interest rate.

Interest rate is a macroeconomic factor and a major monetary policy variable. Interest rate can be defined as the amount charged, expressed as a percentage of principal, by a lender to a borrower for the use of assets.

Uchendu (1993) defines interest rate as the return or yield on equity or opportunity cost of deferring current consumption into the future. Interest rate plays a vital role in economic growth of a country through regulating volume of money (m2), savings and investment.

In Nigeria, financial sector reforms started in August 1987 (Ikhide and Alawode,-2001). This according to Mckinnon (1973) and Shaw (1973) ignited financial repression which occurs mostly when a country imposes ceiling on deposit and lending nominal interest rate at a low level relative to inflation. The resulting low or negative interest rates discourage savings mobilization and channeling of mobilized saving through the financial system. This has negative effect on the quantity and quality of investment and hence economic growth. Nigeria being a country in dire need of development and growth cannot over look the important role interest rate could play in this direction.

The broad objective of the study is to determine the impact of real interest rate on economic growth and other selected macroeconomic variable such as money supply (m2), investment and Gross Domestic Product (GDP) in Nigeria.

LITERATURE

Methodology

Interest is the reward for not hoarding but for parting with liquidity for a specific period of time. For Keynes (1936), interest rate focuses more on the lending rate. According to Ojo (2001), interest rates are defined as the rental payments for the use of credit by borrower or the return for parting with liquidity by lenders. An interest rate is a price and like other prices, it performs a rationing function by allocating the limited supply of financial resources among the numerous competing demands for such resources.

Mekino-snaw (1973) views administered low interest rate as detrimental to increased saving and hence, investment demand. He argues that high interest rate induce savings which can be utilized investment. Thus, there are two transmission channels through which interest rate affect investment. They relate to investment cost of capital. Also, rate encourages financial savings which can be invested or lent out to borrowers as loans.

Baumol and Blinder (1979) assert that as interest rate rises business executives will find investment less attractive. They went further to contend that higher interest rate lead to lower investment spending. But investment is a component of aggregate demand, therefore when interest rate rises, total spending falls. A higher interest rate leads to a lower aggregate demand schedule. Conversely, lower interest rates lead to higher aggregate demand schedule.

According to Jhinghan (1997), some people save irrespective of the rate of interest were zero. There are others who save because the current rate of interest is just enough to induce them to save. They would reduce their savings if the rate of interest fell below market level. Still there are potential savers who would be induced to save if the rate of interest were raised, the higher the rate of interest, the larger will be the community saving and more will be the supply of funds for investment. Empirically, Albu (2006) used two spate partial models to investigate the impact of investment on GDP growth rate and the relationship between interest rate and economic growth in the Romanian economy. His study revealed that while the investment interest rate relationship is negative, the investment economic growth relationship is positive.

Osterbaan et al., (2000) estimated the relationship between the annual rate of economic growth (YC) and the real of interest (RR) using the basic equation YC = BO +B1 (RR + B2), he showed the effect of a rising real interest rate on growth. He also showed that growth is maximizing when the real rate of interest lies within the normal range of say - 5 to + 15%. Also, Gregorio and Guidoti (1995) suggest that the relationship between real interest rates and economic growth might resemble an inverted U-curve. Very low and negative interest rate tend to cause financial disintermediation and hence to reduce growth. Mwega and Ngola (1991) used Kenyan data to test the relationship between interest rates and financial and non-financial savings. Their results reveal that the real deposit rate has an insignificant influence on both financial and non-financial saving in Kenya. They also found that higher interest rates constrict the demands for credit suggesting that a policy of interest rate liberalization might be stag-inflationary, in its effects. Seek and HI Nil (1991) also tested some causal relationship implied in the Mckinnon-Snow thesis for a sample of African countries. Using pooled cross-section and time series data for 30 countries, the following results were obtained:

i) The real deposit rate has a positive and significant impact on economic growth;
ii) Foreign savings have a strong positive impact on investment,
iii) Interest rate has a negative impact on investment and;
iv) The deposit rate positively influenced financial savings.

Giovanni and Shambaugh (2008) explored the connection between interest rates in major industrial countries and annual real output growth in other countries. The result shows that high foreign interest rates have a contractionary effect on annual real GDP growth in the domestic economy/ but that this effect is centered on countries with fixed exchange rates.

Turtle Boom (1991) has provided reasons for one to be sceptical about the impact of interest rate on saving in Africa. He examined the experience ol lire African countries (Gambia, Ghana, Kenya, Malawi and Nigeria) with interest rate liberalization. It was revealed that despite substantial progress made in reforming their financial system, liberalization only partially affected the level and variability of interest rate in these counties. This behavior of interest development of financial markets and the oligopolistic structure of the banking industry which kept interest rate spreads wide through the collusive behavior of the dominating banks.

Oshikoya (1992) used time series econometrics to investigate the impact of interest rate deregulation on economic growth in Kenya. Using date from 1970 - 1989, he found real interest rate to have a significant and negative impact on economic growth. The sample was then split into sub-periods 1970 - 1979 (regulation era) and 1980 - 1989 (deregulation era). The real interest rate had a negative and significant coefficient for the^ 1970 - 1979 period, but was positive and significant for the 1980 - 1989, thus offering no robust result of the impact of interest rate deregulation on economic growth of that country. In Nigeria, Eregba (2010) investigated the relationship between interest rate and investment between 1970

and 2002. His history revealed that variations in interest rate played a negative and significant role in investment decision in the economy and demand for credit also has negative and significant influence on interest rate variation in both the short-run and long-run.Amassoma et al (2011) investigated the impact or interest rate deregulation on agricultural productivity in Nigeria using Agricultural output (Agric), on Bank lending BKLD, credit to Agricultural sector (CRAG), credit to private sector (CRPR), direct investment (DINVT), Exchange Rate (KXH), interest rate (INI^1) and stochastic error (UI), the explicit form of model was in this form. AGRIC - $o + $IBLD + SCRAG + $4DINVT +-$5 EXH + $6 INTAU. His finding was that interest rate deregulation does not have significant impact on agricultural output in Nigeria. Akintoye and Olowolaju (2008) examine optimizing macroeconomic investment decision in Nigeria. The study employed both the ordinary least square (OLS) and vector Auto Regression (VAR) framework to stimulate and-project interest temporally private investment response to its principal shocks namely public investment domestic and output shocks. The study found low interest rate to have constrained investment growth. The study then resolve that only government policies produce sustainable output, steady public investment and encourage domestic credit to the private sector which would promote private investment.

Lastly, Obamuyi and Olorunfemi (2011), examined the implication of financial reform and interest rate behaviour on the economic growth in Nigeria study result revealed that financial reform and interest rate have significant impact on economic growth in Nigeria, also result implied that the interest rate behavior is important for economic growth,

The study adopted the ordinary least square statistical technique to examine the relationship between Real Interest rate and economic growth (proxy Gross Domestic Product Growth rate) in Nigeria during 1995 - 2010. Time series secondary data from the World

Bank data bank, 2011 are used in the multiple regression analysis. The source proves to be more reliable and valid for data on macroeconomic variables. The estimation technique is feasible in terms of data requirements and less demanding as it focuses on a relatively small set of aggregate variables instead of requiring a full specification of all the explanatory variables. The quasi-experimental research design is used in the data analysis. It is an appropriate form of research design for ascertaining the effect of independent variables on the dependent.

Hypothesis

Tested in this study are the hypotheses:

HO: There is no significant relationship between real interest rate and economic growth in Nigeria.

HA: There is significant relationship between real interest rate and economic growth in Nigeria.

Decision Rule

1. Accept IIO and reject 11A if the S(bi) > bi/2.
2. Reject I IO and accept IIA if the S(bi) < bi/2.

Model Specification

The study will adopt a stochastic model specification of a demand function of the implicit form:

$gdp = f(Rer, Mo_2, Inv)$.....(1)

explicitly, this is written as:

$Gdp - a_0 + a_1Rer + a_2 Mo_2$. -4- $a_3Inv + e$.....(2)

Where:

gdp = gross domestic product growth rate (proxy for economic growth)

a_o = Constant

a_1, a_2, and a_3 = coefficients of the parameter estimates

Rer = real interest rate

Mo_2 = broad money supply growth rate

Inv = Investment rate

e_t -error term.

The linear form of the equation gives the equation:
A priori, the independent variables are expected to be positively signed.
Results and interpretation
The results of the regression analysis are given below.

Regression

Descriptive Statistics

	Mean	Std Deviation	N
GUP	4.9063	2.88778	16
MO2	27.1238	15.71639	16
RER	3.6188	13.12355	16
INV	22.8750	4.51479	16

Pearson correlation	GDP	1.000	.034	.070	.029
	MO2	.034	1.000	.063	.044
	RER	.070	.063	1.000	.476
	INV	.029	.044	.076	1.000
Sig. (1-Tailed)	GDP		.450	.399	.458
	MO2	.450		.408	.436
	RER	.399	.408		.031
	INV	.458	.436	.031	
Pearson correlation	GDP	16	16	16	16
	MO2	16	16	16	16
	RER	16	16	16	16
	INV	16	16	16	16

Variables Entered/Removed

Model	Variable entered	Variables removed	Method
1.	INV, MO2, RER[a]		Enter

a. All requested variables entered.

Model summary

Model	R	R square	Adjusted R square	Std, Error of the Estimate	Change statistics				
					R Square Change	F change	Df 1	Df2	Sig. F Change
1	.080[a]	.006	-242	3.21829	.006	.026	3	12	.994

ANOVA

Model		Sum of square	Df	Mean square	F	Sig.
1.	Regression	.801	3	.267	.026	.994[a]
	Residual	124.289	12	10.357		
	Total	125.089	15			

a. Predictor: INV, MO2, RER

b. Dependent Variable: GDP

Coefficient

Model	Unstandardized coefficients	Standardized coefficie	t	Sig.	95.0% confidence interval for B.

			nts				
	B	Std. error	beta			Lower bound	Upper bound
1.Constant	4.788	4.856		.986	.344	-	15.36
MO2	.007	.053	.039	.136	.894	5.791	7
RER	.017	.072	.077	.233	.820	-.109	.123
INV	-.006	.210	-.009	-.029	.997	-.141	.174
						-.464	.452

a. Dependent Variable: GDP

Source: SPSS version 17.0

The results of the analysis conform with the a priori expectation for real interest rate and money supply, suggesting that increase in the real interest rate, and money supply translates to increase in economic growth of the Nigerian economy. However, contrary to expectation, one of the results shows a negative association between investment and gross domestic product growth. It is of note that the association between the real interest rate and GDP was found to be insignificant thereby accepting the null hypothesis and rejecting the alternative at a 5 percent probability level. That investment was not found to impact positively on economic growth in the country can be explained by the dominance of oil sector production in the country's GDP which depended more on its quota from OPRG than the investment rate in Nigeria.

MAJORFINDINGS

The study is a great advance in knowledge from the point of view of its findings which include:

1. That increase in real interest rate in Nigeria during the period of the study encouraged economic growth in the economy though insignificantly.

2. Investment rate in the country during the study period is inconsequential to improving economic growth in the country.
3. Increase in broad money supply in Nigeria spur the growth rate of its GDP.

CONCLUSION

Real interest rate has been discovered in many empirical, studies to have a positive-, association with economic growth. This study reveals the same link for Nigeria within the time frame. The OLS analysis shows that real interest rate though maintaining a direct' relationship with the dependent variable, is an inconsequential factor explaining economic growth in Nigeria during the period.

RECOMMENDATIONS

Given the findings therefore, the study recommends for policy action:

- Central bank to track down inflation rate which erodes the real interest rate be tracked down in the Nigerian economy as this will engender more increase in economic growth via increase in real interest rate in the country.
- The economy should be diversified from the present concentration in oil sector.

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