IMPACT OF INTEREST RATE ON SAVINGS ON THE NIGERIA’S ECONOMY (1981-2013)

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Abstract
This study sought to examine the impact of interest rate on savings on the Nigeria’s economy (1981-2013). It also investigated the joint influence of savings and income on the total savings in the economy. Ex post facto method was adopted in order to test the hypothesis, the researcher adopted VAR test. The result showed that 1% increase in a period lag of interest rate on deposit, on the average will cause 0.1% increase in savings. This implies that any attempt made to increase the propensity to save will always cause increase in the savings level ceteris paribus. More so, 1% increase in a year period lag of the income will cause 0.04% increase in savings. This indicated that as income generated by the country increase, all things being equal, the desire to save will be on the increase. The result also showed that level of significance [0.05] was less than its P-value for LINT. Thus, interest rate does not significantly impact on the savings in Nigeria within the period under study (1981-2013). However, considering the factor like income (GDP), it was found that both variables significantly impact on the savings in Nigeria within the period under study. The result indicated that combining interest rate and income, savings can be significantly influenced. This is also supported by the positive relationship between the dependent variable; Savings (LASV) and the explanatory variables (interest rate on deposit [LINT and LGDP]. In the light of the findings, it was recommended that the CBN should adopt interest rate policy that will always boost the savings culture of the real sector. This can be achieved by increasing the interest paid to deposit made by individuals, local and foreign investors. More so, income generation by the sectors of the economy can be enhanced by providing enabling environment for business to thrive. This will certainly cause increase in the income (GDP) thereby contributing to the increase in the total savings of the country.

Keywords: Interest Rate, Savings, Income (GDP), VAR, Nigeria’s Economy
1. Introduction
Interest rate and savings are inextricably linked. They are among the economic variables that are of great importance to a broad spectrum of people, the government, business firms, entrepreneurs, foreign investors, the financial sector and the household. They are so important that they determine to a large extent the level of investment and the economic growth in an economy.

According to Fuller (1990), interest rate is the factor reward or earning of capital. Interest rate is also seen as the payment for the use of money. Speaking in second sense, fuller opined that “this source of finance will only be available if other people are willing to forgo current consumption and provide a pool of financial resources from which loans can be advanced. This supply of fund will only be forthcoming if those supplying it receive some reward for sacrificing their current consumption…” to sacrifice current consumption implies a form of savings. Saving in its simplest connotation is the portion of disposable income not spent. It comprises of time deposits in bank and the various forms of equities.

The relationship between interest rate and saving is well established in economic theory. Keynes (1936) highlighted this relationship in his liquidity preference theory “…. The quantity of money which people desire to hold for speculative purpose is a function (dependent on) of interest rate. At higher rate of interest, people prefer to hold their wealth in one form of interest bearing asset or another. This theory implies that higher interest rate induces people to save. Lower interest rate however produces the opposite effect. Studies carried out on the subject corroborate this theory. A well known study is the Mickinon Shaw financial intermediation hypothesis due to Mchinon (1973) and Shaw (1973). They found a positive relationship between interest rate and saving. Interest rate is an important economic price, this is because it’s diverse role in the economy, whether seen from the point of view of cost of capital or from the perspective of opportunity cost of funds, and it has a fundamental implication for the economy. Interest rate increase savings when cost of capital and availability of credit are influenced if interest rate is administratively determined, it is known as fixed interest rate and floating if determined by market forces. Prior to 1986, interest rates were fixed by the central bank of Nigeria (CBN) on the basis of policy decisions. The major objectives during this period were: to obtain socially optimum resources allocation to promote orderly growth in the financial market and facilitate flow of credit to the preferred sectors-agriculture, manufacturing etc, (Soludo, 2008). During the era of fixed interest rates, real interest rates were generally negative. The negative real interest rate had catastrophic consequences on the economy. It led to financial disintermediation, leading to low level of saving. Also leads to Low level of investment and low level of growth (Nwachukwu and Odigie, 2009).

Banks were allowed to determine deposit and lending rates according to market forces through negotiations with their customers. Since the introduction of SAP in 1986, Nigeria has experimented several monetary management policies, operating what the CBN termed “control deregulation, regulation and complete deregulation” at different periods. Interest rate rose following the deregulation of the financial sector (Soludo, 2008), what is unclear, however, is
whether there is a strong response in saving as a result of the rising interest rates. There appears to be a consensus on the relationship between interest rate and saving. Empirical evidence from developing countries is however at variance with theorized relationship and when they exists any relationship, they are ambiguous and insignificant. Ostry and Reinhart (1995) captured it this “financial liberalization which is said to generate higher real interest rate will result in greater saving by households only if the household decides to defer consumption, in order words if the sensitivity of consumption and savings to higher interest Rate is significant.

2. The Problem
The major function of interest rate in Nigeria and indeed other countries of the world is to ensure a rate of interest capable of inducing savings mobilization in the economy. The use of interest rates as stimulants in savings mobilization has not been very effective in Nigeria. The argument put forwards as the cause is that financial sector is weak. For this reason, people prefer their money outside the banking system, which many believe is shallow and prone to distress. The reason why saving is not responsive to interest rates as highlighted by Acha (2011) are; lack of confidence in the banking system; low income and preference for cash.

In the same vein, Ostry and Reinhart (1995) identified the reason to; lack of sophistication in domestic financial market; proportion of the population living or near subsistence income level and liquidity constraints. The situation in Nigeria mirrors the reasons given above. There are few banks and are mostly located in urban areas and there is little scope for true market determination of interest rate. Available data has it that about 61 percent of Nigeria lives below poverty line, earning less than 1 dollar per day. Interest rate is of no consequences to this category of people as they can barely subsist let alone save. Despite the policy measures put in place- recapitalization of commercial banks, the various poverty eradication programmes and policies, etc. a robust financial system is still not in sight as most people still do not have confidence in the banks. Besides, even those who seem to fully utilize the services of the financial sector are not finding it so easy this is because of the tedious nature of the banking process and inefficiency in the banking system coupled with inept corruption which has continued to mar success that may have been recorded.

Nigeria banks have continued to toll towards distress to extent that some banks had to be rescued even. However the Nigeria economy has at different times witnessed enormous interest rate swings in different sectors of the economy since mid 1980’s under the regulated regime hence, these changes have affected savings. The preferential interest rates were based on the premise that the market if freely applied would exclude some priority sectors. Thus interest rates were adjusted through the invisible hand in order to promote increased level of savings which will in return increase investment in the various preferred sector of the economy. Besides, closely followed by the regulated interest rate regime was the interest rate reform; a policy evolved under the financial sector. However, the question is, to what extent does interest rate affect savings? And to what extent do changes in interest affect Savings? While the broad objective of the study is to empirically investigate the relationship between interest rates and saving in Nigeria specifically it shall be to evaluate the impact of the interest rate on savings in Nigerian
economy over time and also to determine the effect of changes in interest on saving in Nigerian economy.

3. Theoretical Literature

Interest rate is defined as the rate of return or yield on equity or opportunity cost deferring current consumption into the future. (Uchendu, 1993). Onwukwe (2002) defined the rate of interest as ‘the difference between what is lent and what must be repaid after a specific period, expressed as a proportion of the amount lent. The definitions above suggest that interest is not a distinct term as there are two aspects to the term ‘interest rate’. The first aspect, in term defined by Uchendu (1993), is regarded as ‘interest on saving’, commonly referred to as ‘borrowing rate’. In the second sense, interest rate is seen as the cost of borrowing, otherwise known as ‘lending rate’. Hence, many authors regard lending rate and borrowings rate as the two broad classification of interest rate. Within this classification are other types of interest rate. They are: savings rate, discount rate, treasury bill rate, prime lending rate, maximum lending rate, inter-bank rate, minimum rediscount rate (MRR) etc, (Afolabi, 1999)

Afolabi (1999) defined deposit rate as the rate of interest paid on deposit placed with financial institutions, say a bank deposit rates are usually ‘term structured’, graduated according to maturity i.e. according to the length of time the depositor is willing to allow the bank make use of their deposits. Deposits rate ranges from three(3) months deposit rate to over one year deposit rate.

Lending rate is the rate of interest at which financial institutions lend money to their customers (Afolabi, 1999). According to him, the lending rate is expected to take into account the cost of the fund, maturity profile of the credit, estimated or perceived risks, central bank’s regulation, bank margin etc. Interest rate can also be classified as nominal or real. Nominal interest rate is the observed rate of interest incorporating monetary effects while real interest rate is arrived at by considering the implications of inflation on nominal interest rate (Uchendu, 1993). Saving is defined as the part of disposable income which the household decide not to spend (Ugwuanyi, 2004). In other words, savings is simply the portion of disposable income not consumed. Disposable income means the after tax income. Savings are of different types. Viz: personal saving – unspent income of the household from their personal disposable income; corporate savings, which consists mostly of retained profits of firms; public savings- when the government gather more money (revenue) than it spends (Fuller, 1990).

Afolabi (1999) corroborated the views held by fuller when he highlighted the following as the determinant of savings: income, availability of attractive savings facilities, rates of interest on savings, inflation, liquidity of savings, government policy, etc.

Keynes (1936) made a bold attempt in explaining the relationship between interest rate and savings, using his famous liquidity preference theory. According to Keynes, ‘the quantity of money which people desire to hold for speculative purposes is a function of interest rates. At higher interest rate, people are induced to save more. By implication, interest rate is viewed in
this regard as a very important determinant of savings, the McKinnon-Shaw financial intermediation hypothesis postulate that interest rates have a positive response to savings and economic growth (McKinnon, 1973). These view holds that increases in the savings interest rate will lead to increase saving and hence a positive relationships. Acha and Acha (2011) stated that ‘it is this view that must have encouraged the Nigerian authorities to abandon administratively fixed interest rates for market determined one.

4. Empirical literature
There is an abundance of empirical literatures that dealt with the relationship between interest rates and savings, the study has however been inconclusive as findings by different authors differ greatly. While some authors found a weak relationship between interest rates and savings, others found a strong positive relationship. Some researchers also found no relationship whatsoever between interest rates and saving, especially for developing countries. Ostry and Reinhart (1995) utilized the intertemporal Elasticity of Substitution (IES) in consumption to measure the interest rate sensitivity of household saving. The IES measures how easily households can substitute future consumption for current consumption subject to a resources constraint. They used IES for household in different income levels (low-income, middle-income, upper-income, high-income) in developing countries. The result obtained suggests that a 1% point rise in the real interest rate should elicit a rise in saving of only two-tenths of percentage point for the poorest countries in the sample.

In contrast, the rise in the savings rate in response to a similar change in the real interest rate in response to a similar change in the real interest rate is about two-thirds of a percentage point for the wealthiest countries studied. They concluded that the hypothesis that the savings rate and its sensitivity to interest rate changes is a rising function of income finds considerable empirical support. They content that financial liberalization has failed to elicit appreciable rise in private saving in many countries.’…Our result may help explain why the rising real interest rate that typically accompany financial liberalization Policies…and the resulting increase in interest rate may have a number of Positive effects, the result suggests that the direct impact of such policies On household saving behaviors is likely small in low-income countries.

Ndukwe (1991) dissented in his work; he noted that the bank deposits increased substantially during the era of interest rate variability. That characterized the deregulation of banking operation in Nigeria. Using data for the periods 1984 to 1988, he found that savings through bank deposits have been highly responsive to 1988; he found that savings through bank deposits have been highly responsive to interest rate variation. The study confirmed the validity of three hypotheses.

Nwachukwu and Odigie (2009) used the Error Correction Mechanism (ECM) and Co-integration approach in regression analysis and found that growth in income and real interest rate have in regression analysis and found that growth in income and real interest rate have a statistically significant positive influence on saving in the economy.
Acha and Acha (2011) used regression analysis in their study and found out that both savings rate and lending rates respectively have no ability to predict savings and investment. They suggest that factors such as lack of confidence in the banking system, low income and preference for cash may be of greater influence. For them, interest rates play an almost insignificant role in saving determination.

Mwega et al. (1990) found among other things that the Mckinnon-Shaw hypothesis is inoperative in Africa. Instead, they found that the private saving rate and the real demand for money are non-significantly responsive to a representative deposit rate of interest.

Soyibo and Adekanye (1992) used five different models in their study of which three had direct bearing on the study at hand. Equation (1) had private savings as the dependent variable while foreign saving ratio, rate of growth of income, real per capita income, adjusted ex ante interest rate and lagged savings ratio were the explanatory variables. The regression result showed that all the variables except the lagged savings ratio were not significant, including the adjusted ex ante real interest rate. The implication of this finding is that a change in the ex ante real interest rate does not exert any significant impact on private savings. They also tested the applicability or otherwise of both McKinnon’s and Shaw model of financial intermediation in Nigeria. Their result suggests that financial liberalization in Nigeria is supported rather weakly by Nigeria’s data.

Kendall (2000) used two Stage Least Squares (2SLS) and other techniques of econometric analysis in his study. Drawing from the McKinnon-Shaw model, he evaluated the hypothesis “a rise in the expected real deposit interest rate leads to an increased savings-income ratio.” Using the ratio of gross domestic to GDP as the dependent variable and five other variables, he found that the coefficient of the interest variables is of the correct sign and significant, providing support for the McKinnon-Shaw hypothesis.

6. Methodology The research design adopted is the Ex post facto is adopted because it seeks to reveal possible relationships by observing an existing condition or state of affairs and search back in time for plausible contributing factors. In order to examine the impact of interest Rate on Savings in Nigeria economy, the researcher adopted VAR test.

7. Model Specification
In testing the hypothesis that “interest rates have not significantly impacted the level of savings in Nigeria” against its alternative, and also drawing from our knowledge of economic theory pertaining to saving and interest rate especially the liquidity preference theory, we specify the following model:
\[
\text{Log SAV} = \beta_0 + \beta_1 \text{logINT} + \beta_2 \text{logY} + u_t
\]
Where: \( \text{Log SAV} = \) National Savings, \( \text{Log INT} = \) Rate of interest on deposit, \( \text{Log Y} = \) income proxied by GDP, \( \beta_0 = \) the intercept (constant), \( \beta_1 = \) the coefficient \( \text{log INT} \) and \( \beta_2 = \) the coefficient of \( \text{log Y} \). The national total savings is the dependent variable and attempts to capture the relative effects of the independent variables namely Rate of interest on deposit (INT) and income (Y) proxied by GDP.

In order to avoid the problem of spurious regression, the series is subject to stationarity using augmented dickey fuller ADF and Philip Perron PP Unit Root test.

**Table 1: Augmented Dickey Fuller Unit Root Test**

<table>
<thead>
<tr>
<th>Series</th>
<th>ADF Test Statistic</th>
<th>5% critical values</th>
<th>10% critical values</th>
<th>Order</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSAV</td>
<td>-2.296041</td>
<td>-3.557759</td>
<td>-3.212361</td>
<td>1(0)</td>
<td>Not Stationary</td>
</tr>
<tr>
<td>LINT</td>
<td>-2.789071</td>
<td>-3.557759</td>
<td>-3.212361</td>
<td>1(0)</td>
<td>Not Stationary</td>
</tr>
<tr>
<td>LGDP</td>
<td>-2.197044</td>
<td>-3.557759</td>
<td>-3.212361</td>
<td>1(0)</td>
<td>Not Stationary</td>
</tr>
</tbody>
</table>

Source: Researcher’s compilation from E-view (version 7.0)

**Table 2: Augmented Dickey Fuller Unit Root Test**

<table>
<thead>
<tr>
<th>Series</th>
<th>ADF Test Statistic</th>
<th>5% critical values</th>
<th>10% critical values</th>
<th>Order</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSAV</td>
<td>-3.864168</td>
<td>-3.562882</td>
<td>-3.215267</td>
<td>1(1)</td>
<td>Stationary</td>
</tr>
<tr>
<td>LINT</td>
<td>-6.694585</td>
<td>-3.562882</td>
<td>-3.215267</td>
<td>1(1)</td>
<td>Stationary</td>
</tr>
<tr>
<td>LGDP</td>
<td>-5.197994</td>
<td>-3.562882</td>
<td>-3.215267</td>
<td>1(1)</td>
<td>Stationary</td>
</tr>
</tbody>
</table>

Source: Researcher’s compilation from E-view (version 7.0)

Observing the variables, LSAV, LINT and LGDP; the series are not stationary at levels. However, the series are differenced once. The results showed that the time series are integrated of the same order; I(1), with the application of ADF test. The level of their integrations indicates the number of time series have to be differenced before their stationarity is induced.

**Table 3: Cointegration Test**

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.395136</td>
<td>21.06363</td>
<td>29.79707</td>
<td>0.3537</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.152408</td>
<td>5.478338</td>
<td>15.49471</td>
<td>0.7561</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.011300</td>
<td>0.352297</td>
<td>3.841466</td>
<td>0.5528</td>
</tr>
</tbody>
</table>
The trace statistics from the Johansen cointegration indicated that there are no cointegrating equations. As found from the first trace statistics, their values are less than 5% critical values (i.e. [21.06363 > 29.79707], [5.478338 < 15.49471], and [0.352297 < 3.841466]. The eigenvalues [0.3951], [0.1524] and [0.0113] are equal to zero. In other words; the null hypothesis of no cointegration among the variables is accepted. VAR approach is conducted as no long run relationship is found from the result.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>S.E</th>
<th>t-statistics</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.135233</td>
<td>0.215776</td>
<td>-0.626727</td>
<td>0.5359</td>
</tr>
<tr>
<td>LSAV(-1)</td>
<td>0.972122</td>
<td>0.069606</td>
<td>13.96611</td>
<td>0.0000</td>
</tr>
<tr>
<td>LINT(-1)</td>
<td>0.087399</td>
<td>0.079345</td>
<td>1.101507</td>
<td>0.2801</td>
</tr>
<tr>
<td>LGDP(-1)</td>
<td>0.036870</td>
<td>0.073387</td>
<td>0.502406</td>
<td>0.6193</td>
</tr>
</tbody>
</table>

R-Square = 0.997067, F-Statistics = 3173.380, Prob (F-Statistics) = 0.000000

The coefficient of multiple determination (R-squared Value) indicated that that 99.7% of total variations in savings (LSAV) are explained by changes in interest rate and income which is proxied by GDP while 0.3% of the variations in LSAV are attributable to the influence of other factors not included in the regression function. This is an evidence of goodness of fit in the model. Changes in the explanatory variables namely LINT and LGDP, invariably influence the savings level in the economy.

Considering the apriori test, the sign born by the coefficient of interest rate on deposit (LINT) and Income (GDP) met the expectation. The result shows that 1% increase in a period lag of interest rate on deposit, on the average will cause 0.1% increase in savings. This implies that any attempt made to increase the propensity to save will always cause increase in the savings level ceteris paribus. More so, 1% increase in a year period lag of the income will cause 0.04% increase in savings. This indicated that as income generated by the country increase, all things being equal, the desire to save will be on the increase.

The result also showed that the t-statistics of the coefficient of LINT is not statistically significant. This is confirmed by its P-value [0.2801]. The level of significance [0.05] is less than its P-value. Thus, interest rate does not significantly impact on the savings in Nigeria within the period under study (1981-2013). However, considering the important factor like income (GDP), it was found that both variables significantly impact on the savings in Nigeria within the period under study. The result indicated that combining interest rate and income, savings can significantly be influenced. This is also supported by the positive relationship between the dependent variable; Savings (LASV) and the explanatory variables (interest rate on deposit [LINT and LGDP].
Conclusion
Based on the findings of study, it was observed that there is positive relationship between interest rate on deposit and savings which is in conformity with the economic expectation. No doubt, when money deposits in the bank increase due to increase in the interest rate, the propensity to save will rise. This implies that total savings will increase. More so, income will as will boost the savings level if only and if income (GDP) is on the increase as well.

In the light of the findings, it is recommended that the CBN should adopt interest rate policy that will always boost the savings culture of the real sector. This can be achieved by increasing the interest paid to deposit made by individuals, local and foreign investors.

More so, income generation by the sectors of the economy can be enhanced by providing enabling environment for business to thrive. This will certainly cause increase in the income (GDP) thereby contributing to the increase in the total savings of the country.

References


