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Effects of Interest Rate Deregulation on Agricultural Financing in Nigeria from (1970 to 2014)

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Abstract

The study of effects of interest rate deregulation on agricultural financing in Nigeria (1970-2014). The study also specifically examined the trend in the rate of interest, volume of credit to agricultural sector and agricultural GDP contribution under the period (1970-2014). The study employed descriptive/trend statistics, ordinary least square regression and correlation analysis to achieve its results. Secondary data used for the study were computed from CBN Statistical bulletin 2014. The results show that interest rate has a strong influence in the volume of credit to the agricultural sector and it also has weak influence on the agricultural GDP contribution. It was also observed that interest rate has been fluctuating under the period (1970-2014) that have resulted to low productivity, and unemployment in agricultural sector but makes the financial institutions to be willing to disburse credit to the public. The agricultural GDP contribution has a downward and upward trend during the period which is as a result of the neglect of the government based on the discovery of oil and lastly there was an upward trend in the volume of credit to the agricultural sector, which means funds were sent to the sector by government but because of bureaucratic processes most farmers are unable to access it.

Keywords: Deregulation; GDP; Interest rate; Agricultural finance; Credit

Introduction

Interest rates affect the level of consumption on the one hand and of the level and pattern of investment on the other hand. They are crucial in financial intermediation which involves transferring funds from surplus units to deficit units in the economy [1]. In general, interest rates are useful in gauging financial market conditions and they are major tools of monetary policy.

Deregulation in interest rate has really affected the rate or level of agricultural financing. The interest rate is the price of capital, which reflects its productivity in increasing output. The interest rate should be at the competition level. When it is fixed below the market-clearing rate, only a few privileged borrowers gain access to cheap, often rational credit. When this problem is compounded by high inflation, interest rate becomes negative in real terms, which hampers savings, mobilization and investment.

A major objective of the deregulation exercise in the Nigerian Financial system in the second half of the 1980's was to increase savings for investment and economic growth. But despite this effort, economic growth is still in the doldrums. The deregulation exercise has been met with mixed feelings in Nigeria. While some believe it would enhance economic performance in Nigeria, others have contrary opinion. Nwankwo [2] believes that interest rate deregulation will definitely lead to more efficient allocation of financial market resources. It is position in line with the arguments of Oni [3] and Shaw [4].

On the other hand holds that deregulation of interest rate is like a double-edged sword, which either stimulates or mars the economy. He asserted that the deregulation of interest rate will lead to an increase in interest rate which will increase savings. However, he opined that high cost of borrowing might bring about cost-push inflation as borrowers of fund will push the high cost of borrowing to the customer by pushing up prices. Ojo [5] with opinion of the interest rate deregulation would mar the Nigerian economy. In their separate papers, they flawed the deregulation exercise, claiming it would discourage investment and enhance economic growth, by pushing up interest rates. Ojo and Ani's position are supported by Okopi [6] and Sanusi [7] who all pointed out the low positive impact of deposit rate on economic growth after interest rate liberalization in Nigeria. These contrary opinions about the effectiveness of the deregulation exercise in Nigeria raises the issue of the effectiveness of the deregulation exercise. There is therefore the need for a comprehensive evaluation of the role of interest rate deregulation in agricultural financing in Nigeria. It is against this backdrop that this research work sought to evaluate its effect [8]. The need for the study is highly justified taking into notice its importance to farmers, students, researchers, professionals, teachers of economics, accounting, agricultural economics, Nigeria Government, World Bank, IMF and F.A.O. generally.

The study would provide means of empirical testing and validation of theories behind the financial indicators in agricultural credit demand. The study will improve our understanding of core issues and constraints to advice government and other bodies in the financial management to achieve agricultural growth and development [9]. Information obtained from the study will help in providing useful methodological guidelines for increasing the consumption and in predicting future credit demand for agricultural investment. It will provide material for improving the human resources through the better quality of teaching of students in Agricultural economics.

The main objective of the study is to examine the effects of interest rate deregulation on agricultural financing in Nigeria.

The specific objectives of the study are to:

- Describe the trend in volume of credit to the agricultural sector over the period
- Describe the trend in agricultural GDP contribution over the period
- Describe the trend in interest rate over the period
- Analyze the relationship between interest rate and volume of credit to the agricultural sector.

Research hypothesis

- Interest rate deregulation has no effect on volume of credit to the agricultural sector.
- Interest rate deregulation has no effect on agricultural GDP contribution.

Research Methodology

Data collection

Data were collected for the study from secondary sources. Data on the trend of interest rate, aggregate loans to agricultural sector and Gross domestic products were collected from the Central Bank of Nigeria (CBN) statistical bulletin 2014 edition.

Method of analysis

The study made use of descriptive/trend statistics to achieve objectives 1, 2 and 3 and made use of the ordinary test square regression analysis to achieve objectives 4 while correlation analysis was used to achieve objectives 5.

The major findings that would be analyzed in this study is to ascertain the effect of interest rate deregulation on agricultural financing in Nigeria. To analyze these findings interest (lending rate), volume of credit to agricultural sector and gross domestic product would be used.

If the regression coefficient is positive and the calculated t-value is less than the tabulated value, it is an indication that there is a significant relationship between the dependent and independent variables. The coefficient of determination (R2) was used to measure the rate at which the dependent variables are explained by the independent variables.

Model specification

This study used volume of credit to agricultural sector as the dependent variable while interest rate is used as independent variable. The model is therefore specified thus:

Simple linear model

$VCAS=B_o+B_1 IR+\mu$

Where

VCAS=Volume of Credit to to agricultural sector.

B_o=Intercept.

B_1=Parameter estimate of interest rate.

IR=Interest rate.

μ=Error term or Stochastic term.

The study also used correlation matrix to describe the relationship between interest rate and agricultural contribution to GDP (AGDP).

Result and Discussion

Trend interest rate over the period (1970-2014)

The Trend in interest rate is conceptualized by the swings in Interest Rates over time, from 1970 to 2014. Below is the chart, presenting the swings in the level of interest rate in Nigeria (Table 1 and Figure 1).

Year	Interest Rate
1970	8
1971	10
1972	10
1973	10
1974	10
1975	9
1976	10
1977	6
1978	11
1979	11
1980	9.5
1981	10
1982	11.75
1983	11.5
1984	13
1985	11.75
1986	12
1987	19.2
1988	17.6
1989	24.6
1990	27.7
1991	20.8
1992	31.2
1993	36.09
1994	21.36
1995	20.79
1996	20.86

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1997	23.31
1998	21.32
1999	27.19
2000	21.55
2001	21.34
2002	30.19
2003	22.88
2004	20.82
2005	19.49
2006	18.7
2007	18.36
2008	18.7
2009	22.62
2010	22.51
2011	22.39
2012	26.73
2013	27.15
2014	27.57
Source: Central Bank of Nigeria (CBN) Statistical Bulletin 2014.	

Table 1: Trend in the rate of interest from 1970 to 2014.

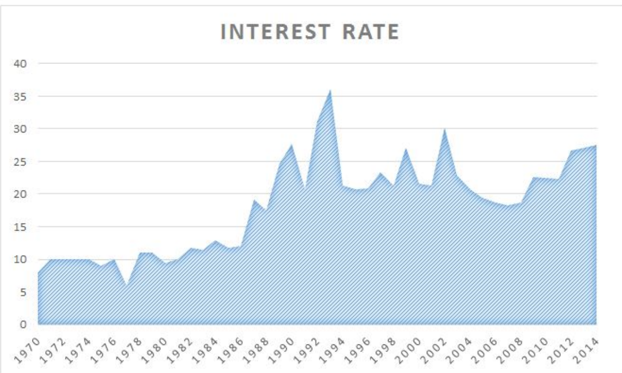

Figure 1: Graph showing the trend in interest rate from 1970 to 2014.

Taking a critical look at Figure 1 above, it was observed that the highest interest rate regime occurs in 1993 which was 36.09% as a result of high demand for loans and inflation which stimulated lenders to seek for compensation for the decrease in purchasing power of the money they will be repaid in future. It reduced in 1994(21.36%) to 2001(21.34) though subject to change as a result of Central Bank of Nigeria (CBN) intervention on monetary policy. The elimination of weekly tender on treasury bills and the Minimum Rediscount Rate (MRR) was used to achieve this. Interest rate was lowest in 1977 as there was need to encourage people to invest for economic development.

Trend in GDP over the period (1970-2014)

Examining the graph above, it is observed that the highest agricultural-GDP contribution was in 1970 which is about 49% of the economies' GDP. The role of agriculture in the economy has been on the downward trend especially in the contribution to Gross Domestic Products (GDP). It shares in GDP fell from 48.8% in 1970 to 23.4% in 1974 due to discovery of oil and export of crude which lead to the neglect of the sector (Table 2 and Figure 2).

Year	Agric. GDP (%)
1970	48.8
1971	45.61
1972	43.03
1973	37.79
1974	23.2
1975	27.34
1976	22.9
1977	23.48
1978	23.2
1979	21.9
1980	20.1
1981	28.5
1982	32.4
1983	35.47
1984	39.9
1985	39.2
1986	40.3
1987	37.2
1988	41.6
1989	32.1
1990	31.5
1991	31.2
1992	27.2
1993	33.9
1994	38.8
1995	32
1996	31.13
1997	34.03
1998	39.04

1999	35.3
2000	26.03
2001	33.7
2002	48.5
2003	42.7
2004	34.21
2005	32.75
2006	31.99
2007	32.71
2008	32.85
2009	37.05
2010	30.33
2011	30.87
2012	34.43
2013	34.46
2014	34.5
Source: Central Bank of Nigeria (CBN) Statistical Bulletin 2014	

Table 2: Trend in GDP over the period (1970-2014).

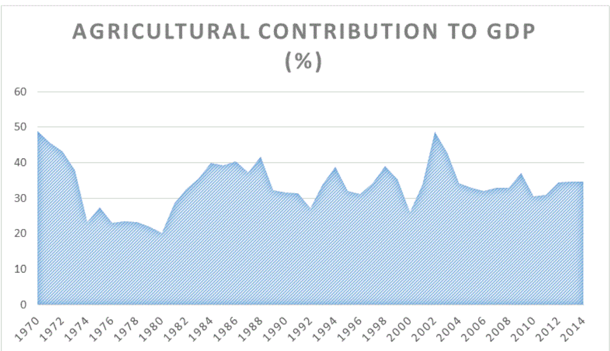

Figure 2: The trend of agricultural contribution to Nigeria GDP.

It is important to note that there was a micro increase in 1975 (27.34%) compare to 23.4% in 1974 and it was as a result of the establishment of National Accelerated Food Production Project (NAFPP) in 1973 which aim was to boost food production of six major crop namely rice, millet sorghum, maize, wheat and cassava. But due to sustainability problem the project was bedevilled by inadequate commitment by some states, inadequate publicity and poor infrastructural facilities which lead to a drastic decline from 1976 to 1980.

In 1980 due to Government policies and programs in the sector, there was an increase that continued up to 2014 although this favourable change has not been steady (Table 3 and Figure 3).

Trend of the volume of credit to agricultural sector over the period (1970-2014)

It is obvious that the volume of credit to the Agricultural sector has been increasing over time, as shown in the graph above as a result of introduction of Agricultural Credit Guarantee Scheme (ACGS) in 1977 by the Central Bank of Nigeria (CBN) to guarantee credit disbursement by commercial banks to the sector.

Also in 1994, the CBN increased its default rate payment on credits to the agricultural sector as guaranteed by Agricultural Credit Guarantee Scheme.

Year	Volume of Credit to Agric. Sector(Log)
1970	0.85
1971	0.97
1972	1.28
1973	1.33
1974	1.43
1975	1.57
1976	1.9
1977	2.14
1978	2.36
1979	2.52
1980	2.66
1981	2.77
1982	2.9
1983	2.97
1984	3.02
1985	3.12
1986	3.26
1987	3.39
1988	3.49
1989	3.54
1990	3.63
1991	3.7
1992	3.84
1993	4.03
1994	4.25
1995	4.4
1996	4.52
1997	4.45
1998	4.43

1999	4.49
2000	4.61
2001	4.75
2002	4.78
2003	4.79
2004	4.83
2005	4.69
2006	4.69
2007	5.17
2008	5.03
2009	5.65
2010	5.77
2011	5.9
2012	5.93
2013	6.04
2014	6.15
Source: Central Bank of Nigeria (CBN) Statistical Bulletin 2014	

Table 3: Trend in volume of credit to agricultural sector over the period (1970-2014).

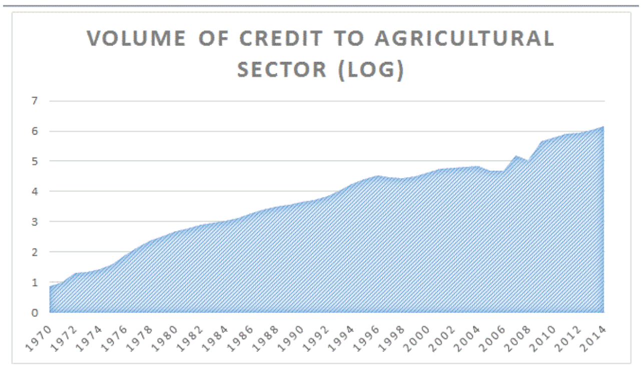

Figure 3: Volume of credit to the agricultural sector.

Relationship between interest rate and volume of credit to agricultural sector

Using a semi-log (Log-ln Model) regression analytical technique and estimating the log-ln model using the Ordinary Least Square (OLS) methodology, the nature of the relationship that exists between the Volume of Credit to the Agricultural sector (VCAS) and interest rate (R) is shown in the Table 4 below.

Variables	Coefficient	SE	t-Stat	P value
Intercept	-0.9294106	0.3855722	2.41	0.000
Interest rate (R)	0.1524634	0.0195016	7.82	0.020
R^2=58.7% , Adusted R^2=57.7% Prob > F=0.000				

Table 4: Ordinary least square result of the log-in-model.

The result above shows the impact of interest rate on the volume of credit from the supply aspect. The relationship is significant. At high interest rate, the financial institutions are willing to disburse loans to the farmers as they aim to make profits from disbursement of such loans. A unit change in the level of interest rate will lead to approximately 0.15-unit change in the level of volume of credit to the agricultural sector. The regression coefficient of determination obtained (R^2=0.59) depicts that 59% of the total variation in volume of credit to agricultural sector is explained by variations in interest rates. The remaining 41 percent unexplained during the period deregulation regime was due to the random variable (u). This however goes to show that the two variables are reasonably related.

The t-value of 7.82 compared with the t-tabulated at 5% level of significance and at a degree of freedom of 44, shows that interest rate is significant in determining the level of credit volume to the Agricultural sector in Nigeria. Therefore, we accept the null hypothesis ho; and reject the alternative (h_A). On the other hand, an increase in interest rate will result in low demand for credit by farmers, while a decrease in interest rate will encourage farmers to access loans. The implication of high interest rate will result to low profitability and productivity of farms and agro-business, discourage investment and decrease farmland values. This will also affect business and the level of investments in the agricultural sector which involves spending on land, buildings, machinery equipment. However, the following are the downsides of a high interest rate on the economy as it trickles down from the agricultural sector. Various economic changes, such as change in the prospects for long term economic growth and inflation, Flexible Changes in federal government policy, and Crisis in the international financial markets.

Conclusion and Recommendation

The study was conducted to determine the effects of interest rate deregulation on agricultural financing in Nigeria (1970-2014). This research was carried out due to the persistent fluctuation in interest rate which makes it difficult for farmers to acquire or apply for agricultural credits and also to know how it has affected the volume of credit to agricultural sector during the periods under review and the agriculture contribution to the gross domestic product in Nigeria. The change in interest rate over the periods under review have a strong influence or effect on the volume of credit to agricultural sector (on the supply side) and a weak effect on agricultural GDP contribution. The findings showed a fluctuation in the rate of interest rate over the years which have resulted in the following;

- Low productivity
- Unemployment in agricultural sector
- Reduction of profitability of farms and agribusiness
- Discourage business investment

Based on the empirical result of the study, the following policy recommendations are made towards ameliorating the identified problems.

1. Interest rate in the agricultural sector should be kept at a benchmark in order to increase productivity, create employment and encourage business investment in the sector.
2. Government programs and policy in agricultural sector should be sustained from one government to another.
3. The authorities also should put in place the thrust policy that will reduce the rate of inflation in Nigeria.
4. Government should use necessary incentives to lure more foreign direct investments to agricultural sector.
5. Government through the financial institution should implement policies that would enhance availability and accessibility to credit in the sector.
6. Agricultural projects meant to boost productivity failed due to poor monitoring and evaluation, efforts should be made to properly supervise these projects.

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