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An Assessment of the Effects of Interest Rate Deregulation in Enhancing Agricultural Productivity in Nigeria

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Abstract: The study shows by means of robust statistical analysis, the changes in Agricultural production since the deregulation of interest rate in 1986. Using ordinary least square method, data from 1986 to 2005 were examined. The empirical analysis carried out showed that interest rate deregulation has significant and positive impact on Agricultural productivity in Nigeria within the period under review. The empirical analysis also suggest that interest rate play a significant role in enhancing economic activities and as such, monetary authorities should ensure appropriate determination of interest rate level that will break the double - edge effect of interest rate on savers and local investors.

Key words: Agricultural productivity, deregulation, financial intermediary, government intervention, interest rate, surplus fund

INTRODUCTION

The Nigerian Agricultural Sector is among the most heavily regulated sector of the Nigerian Economy. The special interest of Government in the Agricultural sector is due to it's relevance in the provision of raw materials for industries and most importantly the provision of food for the teaming Nigeria population and also serving as a source of foreign exchange for the economy. The Nigerian Agricultural section is not alone in government intervention in terms of regulation, according to Akiri and Adofu (2007), opined that the banking industry owing to the nature of activities role, and function it performs in the economy, is also one of the widely and heavily regulated sector in both developing and developed countries of the world. As financial intermediary, banks help in channeling funds from surplus economic regions to the deficit one's in order to facilitate business transaction and economic development in general. The Agricultural sector is not left out in benefits of surplus fund from the surplus spenders in the economy.

Anyanwu (1997) opined that, Commercial banks encourage savings. Since investments are made out of savings, the establishment of commercial banks especially in the rural areas makes savings possible hence economic development is accelerated.

Bearing in mind that funds are owned by other people (the investing public/depositor) the banking ethic demands that such funds should be efficiently and effectively managed in order to build and maintain the confidence of depositors/investors in the banking system and also uphold the competence and continued soundness of the banking system to reduce drastically the risk or possibility of bank failure or distress.

The government most often may think it's necessary to intervene in the operation of the banking system with the intention of correcting the short comings of the price fixing mechanism to ensure that what is commercially rational for an individual bank is approximately rational for all. Socially, interest rate charged by banks could be regulated to encourage savings mobilization, ensure and foster adequate investment for rapid growth and development, bearing in mind the view of Goldsmith (1969) that the financial superstructure of an economy accelerates economic performance to the extent that it facilitates the migration of funds to the best user i.e to the place in the economic system where the funds yield the highest social return.

The opinion of Greenwood and Jovanorie (1990) clearly approximate the view of Goldsmith (1969). They stated that financial intermediation promotes growth because it allows a higher rate of return to be earned on capital and growth in turn provides means to implement costly financial structure.

According to Akiri and Adofu (2007), the existence of externalities and imperfection in the financial markets of most developing economies has often called for intervention by the government through its appropriate agent (the Central Bank of Nigeria in the case of Nigeria) to encourage investment and to re-channel credit to those economic units with high social rate of returns but low commercial rate of returns.

Under the deregulated interest rate system, the market forces of demand and supply plays a very prominent role

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in the determination of interest i.e banks and their customers are free to negotiate to arrive at a suitable interest rate on both deposit and loans. This study attempt to find the probable effect of interest rate3 deregulation on Agricultural productivity in Nigeria.

Conceptual Framework: Ibimodo (2005) defined interest rates, as the rental payment for the use of credit by borrowers and return for parting with liquidity by lenders. Like other prices interest rates perform a rationing function by allocating limited supply of credit among the many competing demands.

Okopi (2008) sees the agricultural sector in the Nigeria contexts to embrace all the sub-sectors of the primary industries. They include farming (which include livestock rearing and growing crops) fishing and forestry. Agricultural production therefore, refers to the final out-put of the agricultural sector of the economy. This is the definition adopted in this study.

Literature Review: Oni (1993) opined that the structure of Nigeria agriculture identified three distinct phases namely, the period of agricultural discrimination (1960-1970), the period of government intervention (1970-1985), and the period of the structural adjustment programme (1986-till date).

The period of agricultural discrimination was characterized by active discrimination against agriculture. This period was also marked by export restrictions and duties on food crops, all of which served as disincentives to domestic agricultural production. During the period of government intervention, agricultural policies attempted to promote rural development and enhancement of food supplies. During the period of the Structural Adjustment Programme (SAP) the policy sought to eliminate price distortion and promote market liberalization among other things, in a bid to promote healthy growth and development.

Agricultural Credit enhances productively and promotes standard of living by breaking Vicious Cycle of poverty. Adegeye and Ditto (1985) described agricultural credit as the process of obtaining control over the use of money, goods and services in the present in exchange for a promise to repay at a future date.

The crucial rate of interest rate and credit in agricultural production and development can also be appraised from the perspective of the quantity of problems emanating from the lack of it. In modern farming business in Nigeria, provision of agricultural credit is not enough but efficient use of such credit has become an important factor in order to increase productivity.

In the 1987 budget announcement of the then president, General Ibrahim Babangida, it was observed that the pegging of interest rate contrary to expectation, has not achieved its desire goal of stimulating new investments nor did it result in an increase capacity utilization of industry and hence the resolve for deregulation.

The resolve for deregulation is informed by the Keynesian investment theory and by Mackinnon (1973) and Shaw (1973), saving and investment hypothesis. The Keynesian theory implies that low interest rate as a component of cost administered is detrimental to increase savings and hence investment demand. The argue that increase in the real interest rate will have strong positive effects on savings which can be utilized in investment, because those with excess liquidity will be encouraged to save because of the high interest rate, thus banks will have excess money to lend to investors for investment purpose thereby raising the volume of productive investment.

The empirical works by Mackinnon (1994) and Fry (1995) have shown evidence to support the hypothesis that interest rate determine investment. Thus, there are two transmission channels through which interest a rate affects investment. They relate to investment as cost of capital. They also opined that interest rates encourages loans (external finance). Many studies have investigated these transmission mechanisms, which tallies with interest rate policy regimes articulated in Nigeria prior to and after the 1986 deregulation.

Khat and Bathia (1993) used non-parametric method in his study of the relationship between interest rates and other macro-economic variables, including savings and investment. In his study he grouped (64) Sixty-Four developing countries including Nigeria into three bases on the level of their real interest rate. He then computed economic rate among which were gross savings, income and investment for countries. Applying the Mann - Whitny test, he found that the impact of real interest was not significant for the three groups. However, his method of study was criticized by Balassa (1989) that a relationship has been established by the use of regression analysis.

Agu (1988) reviewed the determinants and structure of real interest rates in Nigeria between 1970-1985. He demonstrated the negative effect of low real interest rate on savings and investment using the usual Makinnon financial repression diagram. His main conclusion was that the relationship between real interest rates, savings and investment is inconclusive.

Ani (1988) opined that, the central Bank is two eager in its objective to accelerate the attainment of the objectives of the on-going structural adjustment which among other recommended the deregulation of the economy. He believes that the central bank is trying to deregulate the interest rate aim at strangulating a lot of industries particularly the small and medium scale industries because interest rate deregulation will lead to a

very high lending rate which in his own opinion, the medium scale industries could not afford because of their limited capital and production base. The central bank in its policy increase its lending rates from 11 to 15% in situation where Naira is under valued. In view of these increase, the commercial banks increased their own lending rate to between 17 to 22%. Also, the liquidity ration was to be increased from 25% and their credit expansion reduced from 8 to 7.54%. Ani (1988) thus maintained that the central bank of Nigeria measures would reduce the lending capacity of the banks and with a reduction in quantity of money in circulation there would be no money to save. Ani (1988) was also of the view that money which would have been saved are already in the vault of the central bank in the form of drew back of money awaiting remittance to the second tier foreign exchange market, profit and petroleum subsidies. He thus, concluded that, the fixing of interest rates at such a high level does not give Nigerian business any chance of competition with their foreign counterpart, particularly those from countries where interest rates are low compared to our own.

Ojo (1988) share a similar view with Ani. He also believes that since domestic financial markets are to some extent structurally oligopolistics, if interest rate is left uncontrolled, it might led to a sharp increase in lending rate leading to increase in cost of capital and discouraging investment.

Nwankwo (1989), however, believes that interest rate deregulations will definitely lead to more efficient allocation of financial market resources because interest rate will now reflect scarcity and relative efficiency in different use. That is, only efficient investors will have access to scarce financial resources. With the subsistence nature of agricultural production in Nigeria, it therefore becomes difficult for the sector to access the resources.

Abiodun (1988), on the other hand believed that deregulation of interest rate is like a double-edged sword, which will either stimulate the economy or mar it. He asserted that the deregulation of interest rate will lead to an increase in interest rate, which will have a positive effect, or savings as saving will be increased. However, he stated that high interest rate might not bring about cost-push inflation because borrower will pass high cost of borrowing to the customers by including it in their cost of production. He further stressed that high cost of borrowing will slow down investment, as borrowing will be greatly reduced. Hence investment in new business will reduce while existing ones may not be able to compete favourably for scarce finance due to high cost of borrowing. He opined that free marked should serves as checks and balance and that some measure of control of interest rate will be beneficial if only to deliberately channel investment into the preferred sectors.

Table 1: Output of major agric. commodities, interest rate and exchange rate in Nigeria between 1986-2005

Year	Output of major agric. commodities (000,000 Tones	Intrest rate	₦ to $ Exchange rate X^2
1986	32,512.0	10.50	3.3166
1987	37,106.0	17.50	4.1916
1988	47,015.0	16.50	5.3530
1989	52,772.0	26.80	7.6500
1990	55,964.0	25.50	9.0010
1991	67,581.0	20.01	9.7545
1992	75,085.0	29.80	19.6609
1993	78,691.0	36.09	22.6309
1994	81,802.0	21.00	21.8861
1995	84,286.0	20.18	21.8861
1996	86,080.0	19.74	21.8861
1997	90,817.0	13.94	21.8861
1998	93,401.0	18.29	21.8861
1999	96,769.0	21.32	92,6981
2000	102,649.0	17.98	102,1052
2001	88,268.8	18.29	111.9433
2002	91,927.5	24.40	120.9702
2003	96,588.4	20.48	129.3565
2004	104,695.3	19.15	133.5004
2005	111,780.7	17.85	134.3201

Source: CBN Statistical Bulletin 2006

METHOD AND MATERIALS

This study was carried out at Kogi State University, Anyigba, Nigeria in 2009 to see the effect of Interest rate deregulation on Agricultural Productivity in Nigeria. The study covers the period of 1986 to 2005 (Table 1).

Method of analysis: The study made use of the ordinary least square regression analysis to show the extent of the relationship and influence between interest rate deregulation and agricultural productivity in Nigeria.

Sources of data: This research work relied basically on secondary data sources from Central Bank of Nigeria publications.

The variable used: The major findings that would be analyse in this study is to ascertain the effect of interest rate deregulation on Agricultural Production in Nigeria. To analyse these finding interest (lending rate) and output of major agricultural commodities would be used.

Decision rule: If the regression coefficient is positive and the calculated t-value is greater than the tabulated value, it is an indication that there is positive relationship between the dependent and independent variables. The coefficient of determination (R^2) was used to measure the rate at which the dependent variable is explained by independent variables. Finally, if the Durbin Watson test is approximately two (2), it shows the absence of autocorrelation.

Model specification: This study use agricultural output as the dependent variable while interest rate (lending rate) and exchange rate are used as independent variables. The model is therefore specified thus:

$AO = B_o + B_1IR + B_2 ER + U$

Where,

AO = Agricultural output

B_o = Intercept

B_1 = Parameter estimate of interest rate

IR = Interest rate

B_2 = Parameter estimate of exchange rate

ER = Exchange rate

U_i = Stochastic error term

Estimate of the Model:

AO = 51803.061 + 481.022IR + 334.634ER
(3.569) (0.748) (4.773)

$R^2 = 0.574$

DW = 0.339

T – Values in parenthesis

Interpretation of Result:

Major Findings: The regression coefficient of interest rate is 481.022. The calculated t-value for the regression coefficient of interest rate is 0.748 while the tabulated t-value is 0.689. The calculated t-value for interest rate is greater than the tabulated value. It shows that there is a positive relationship between interest rate deregulation and agricultural production. It also shows that interest rate is statistically significant at 5% level of significance.

RESULTS AND DISCUSSION

Specific Finding: The parameter estimate of exchange rate is 334.634. The calculated t-value for the parameter estimate of exchange rate is 4.773 and the tabulated t-value 0.689. The calculated t-value for interest rate is greater than the tabulated value. It shows that there is a positive relationship between exchange rate deregulation and agricultural production in Nigeria between the period under review.

The coefficient of determination for the estimated equation is 0.574. It shows that 57.4% of the variation in agricultural output was explained by the variation in the independent variables.

The Durbin Watson statistic for the estimated regression line is 0.337. The Durbin Watson test showed the existence of serial autocorrelation because it's value is not approximately.

The aim of this study is to see the effect of interest rate deregulation on agricultural productivity in Nigeria. The regression coefficient of interest rate is 481.022, which shows that about 48.1% of the increase in agricultural productivity within the period under study is actually accounted for by interest rate deregulation. The t-statistics shows that the relationship between interest rate deregulation and agricultural productivity is statistically significant at 5% level of significance.

Our results agree with some of the work reviewed in our study like the work of Mackinnon (1973) Shaw (1973) and Fry (1995) that the deregulation of interest rate stimulate investment through increase savings and hence investment demand.

CONCLUSION AND RECOMMENDATION

The study investigates the effect of interest rate deregulation on agricultural production in Nigeria. In the process of the research work it was also discovered that exchange rate has an effect on agricultural production in Nigeria and hence the introduction of exchange rate as one of the independent variable. It was observed at the end of the study that about 57.4% of the variation in agricultural output was accounted for by changes in the independent variables.

Interest rate play significant role in enhancing economic activities. High interest rate attract domestic savings, but at the same time it discourages local investors. Monetary policy should therefore ensure appropriate determination of interest rate level that will break the double-edge effect of interest rate on savers and local investors. Only the interest rate policy that can attract savings mobilization and encourage domestic investment will help the economy.

There is a need for the authorities to improve the macro-economic indicator such as inflation, income level, level of investment and so on. The significance of the level of income to increased investment cannot be over emphasized as the level of income determines the level of savings determine investment that can be made to increase agricultural production in Nigeria.

The authorities also, should put in place policy thrust that will help reduce the rate of inflation in Nigeria. High level of inflation reduces the rate of interest and thus discouraging people from saving. Inflation enhances consumption and total disregard to savings habit is eventually developed.

The study also recommend that deregulation should be carried out with some measures of check and balances to frustrate the negative effect of interest rate deregulation on real term deposit rate which makes savings benefit insignificant.

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