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Econometrical Analysis of Determinants of Cash Flow of Institutional Lenders in Nigerian Agriculture: Macro Economic Variables Perspective.

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Abstract: *The purpose of the study is to examine the determinants of cash flow of institutional lenders in Nigerian agriculture. These determinants are deposit liability, Interest rate, reserve requirement, profit (revenue) and tenure of cash flow. The paper analyses the relationship between these macroeconomic variables and cash flow of institutional lender in Nigerian agriculture. Econometric method was used and linear functional form provided the best fit to estimate the relationship. The results revealed that deposit liability, interest rate and reserves requirement of the monetary authority were important and significant in explaining variability in the level of cash flow of institutional lenders in Nigerian agriculture. Correlation analysis indicated a strong and positive relationship (r = 0.98) movement between the determinants of cash flow. There was a high coefficient of determination (R^2) value of 96%. However, the elasticity of the estimated co-efficient revealed that percentage (%) change in the deposit liability, reserves requirement and interest rate made cash flow in agricultural sector to change by 0.52%, 15% and -71.5% considerably. The study concludes that for health cash flow to be meaningful and productive in Nigerian agriculture, early disbursement of credit, feasibility studies, elimination of defective and dysfunctional productive environment, check mating diversion of credit by farmers and evaluating and monitoring of repayment program must be sustained by institutional lenders and other collaborative bodies. Moreover, supportive government credit guidelines and reformed monetary policy as well as desirable financial services, products and technologies need to be proactive to guarantee effective cash flow into Nigerian agriculture.*

Key Words: *cash flow, institutional lenders, agricultural productivity, credit and macro economic variables*

I. Introduction

Institutional lenders' cash flow financing in Nigerian agriculture in recent times is considered as the best way to modernize, energize and revolutionalize Nigerian agriculture, so as to ensure regular supply of raw materials for industries, food for population and promote forward and backward linkage effects between the sector and industrial sector. According to Ojo and Akanji (1996) posited that agriculture is the main stray of most under developed economies and one of the precondition for economic growth and development. Therefore, capital stock and credit supply (finances) of financial institutions in Nigerian agriculture would ensure sustainable growth in agriculture productivity. The above is also supported by Ijere (1998) where he emphasized that banks' finances in agriculture is perceived as a catalytic role in inducing development in agriculture, hence cash flow of institutional lenders in Nigerian agriculture is imperative in order to arrest dismal and dwindling performances of the sector.

Most governments have promoted the growth of many financial institutions in the country in order to provide credit resources to farmers. Government in Nigerian has used monetary policy through the central bank of Nigeria to sensitize financial markets to ensure effective delivery of cash/credit to agricultural sector in order to improve production. Essien (2006) and Mellor (1995) observed that agricultural productivity not only provide sufficient quantity and quality food for the development of non-agricultural sector but also provide markets for the product of industrial sector and capital for development of other sector. How far has this objective been achieved by government through the financial markets? What are the macro-economic variables used by the institutional lenders to achieve the objective? and what is the relationship between these macro-economic variables and cash flow of institutional lenders in Nigerian agriculture?. These questions have propelled this study and therefore need to examine the role of institutional lenders in Nigerian agriculture. Apart from this, the study assesses the macro-economic variables that are used by financial markets (i.e institutions) to influence the volume of cash flow in the sector and its impact on the agricultural productivity.

Area Of Study And Method Of Data Collection

The study was carried out in ten (10) branches of First Bank Plc in Adamawa and Taraba States, namely: Fufore, Ganye, Gualk, Hong, Jalingo, Lau, Mayo-Belwa, Mayo-Ndanga, Michika and Yola which were all located in the North eastern part of Nigeria. The areas are known for agricultural production. First Bank Plc was selected among other institutional lenders for the study because of its leading role in Nigerian economy with volume of cash flow in terms of loans and advances disbursement to Nigerian agriculture (Poyi 2002).

Primary data was collected through the use of oral interview, participant observation and structural questionnaire administration to the sampled farmers. In each of the branch purposive sampling technique was employed to draw the respondents. Ten (10) farmers (i.e respondents) each were drawn from each of the branches, each having the highest in loan size in each of the branches, giving a sample frame of one hundred (100).

The required secondary data for the study were extracted through intensive research and consultation, Relevant publications such as First Bank Plc (FBN) Bi-annual review, monthly review, monthly returns on loans, FBN Annual reports and statements of accounts 1989-2004 were used. Central Bank of Nigeria (CBN) statistical Bulletin and prudential guidelines were used.

Data Analytical Technique

All functional forms were used but only linear regression function provided the best fit to estimate the elasticity of cash flow to the sector. Correlation model was used to determined relationship between macroeconomic variables and level of cash flow or credit supply in Nigerian agriculture.

Linear regression function, the implicit aspect of the model is stated thus:

$Y = F(X_1X_2X_3X_4X_5)$ (1)

The explicit form of the lead equation is stated below

$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + e$ (2)

Y = cash flow

X_1= deposit liability

X_2= interest rate

X_3= revenue (i.e profit)

X_4= reserves requirement

X_5= tenure of flow

E = error term

b_0 to b_0 = co-efficient of variables X_1 to X_5

The effect of the macro economic variables on investment (i.e. cash supply) in the agricultural sector by institutional lenders is determined by multiplier

$$K = \frac{1}{1-MPI} \text{ or } \frac{1}{1-b} \quad (3)$$

Where k is the multiplier

b is the marginal propensity to invest (MPI)

1- Exogenous variable (i.e. autonomous variable)

II. Results And Discussion

Table 1: estimated linear functional analysis for data collected (regression of results)

VARIABLES	CO-EFFICIENTS	STANDARD DEVIATION	RATIO
Constant (b_o)	3.964	7.439	0.53
Deposit liability(X_1)	0.512	0.017	7.20*
Interest rate (X_2)	-71.460	31.130	-2.30
Revenue (X_3)	8.005	3.528	2.27*
Reserves requirement(X_4)	15.458	3.529	4.38*
Period (X_5)	0.592	0.311	1.90
SD = 4.553	R_2 = 96%		R_2 Adj. 94%

* Significance at 5 % level

Of all the functional forms used for the data linear function gave the best fit of R_2 (i.e. co-efficient of determination) which was 0.96. An indication that 96% of the cash flow in Nigerian Agriculture by institutions lenders was being determined by the selected explanatory macroeconomic variables. From the regression result in the above table (1) the t-values for deposit liability (x_1) and reserve requirement (x_4) were 7.20 and 4.38,

respectively. Both had a positive influence on level of cash flow because the two variables were determined by monetary authority (CBN) and institutional lenders.

The elasticity of the selected macroeconomic variables were statistically significant at 5% level of the confidence and had a positive influence on the level of cash in the sector. All the macro economic variables except the interest rate (x_2) showed a negative but elastic trend with the level of cash injection or flow in the agricultural sector. This support the fact that when interest regime is high in the economy, the level cash flow into productive sector such as agricultural sector shrinks and vice versa. Therefore the elasticity of the estimates showed that percentage change in the level of macroeconomic variables would impair or influence the percentage change in the level of cash flow of the institutional lenders to the agricultural sector.

The correlation matrix results indicated that the macroeconomic variables had relationship with the cash flow. However deposit liability (x_1), had a significant and positive effect on the cash flow into Nigerian Agriculture. This means that cash flow expansion of institutional lenders (Financial markets) to agricultural sector is a function of deposit liability profile of the financial institutions. The t-values ratio of 7.2 (see table 1) showed that deposit liability had a positive influence on cash flow at 5% level of significance.

The interest rate showed a negative variability. This is due to the fact that the variable (i.e interest rate) is being affected by institutional changes in the economy and it is determined by monetary authority (i.e CBN)

The variability of these macroeconomic variables affects the growth and development of agricultural sector. The analysis further showed that increase in the risk of borrowing by farmers, low profit and other factors such as political influence in lending policies of monetary authority vis-à-vis the institutional lenders and vulnerability of changes in weather or natural courses have contributed to low cash flow into the sector.

This is supported by elasticity of change of cash flow in the sector to change in reserves requirement ((x_4) by 15% (see table 1) within the period. This means that cash flow into the sector is elastic with respect to institutional changes in the economy.

III. Conclusion

The result shows that cash flow purveyance of institutional lenders to Nigerian agriculture is influenced by deposit liability, interest rate, profitability and reserves requirement of monetary authority. These macroeconomic variables revealed the relationship between the behavior of borrowing public (i.e farmers) and the institutional lenders (i.e financial institutions) in Nigerian agriculture. These variables constitute major factors that influence banks cash flow in Nigerian agriculture. The study further elucidates that there is a positive and significant relationship between cash flow and the macroeconomic variables.

However, the major disincentives to cash flow of institutional lenders into Nigerian agriculture as revealed by the study include the inconsistently in the interest rate regime, distortion effect on the monetary policy guidelines on the part of the evaluation and monitoring on agricultural production, credit or loans diversion by farmers and poor repayment for facility enjoyed by farmers.

For effective cash flow management in Nigerian agriculture by institutional lenders, there is need for government to adopt proactive interest rate regime that would accord and boost lending in the sector. Necessary reforms must also be instituted in our credit policies and assurance of stable macroeconomic environment that would promote investments in agriculture. Above all credit monitoring and evaluation must be perfected by Central Bank authorities, Nigerian Agriculture and Insurance Company (NAIC) and the institutional lenders (i.e. financial market) so as to check and puncture cash flow diversion into unproductive ventures. This, in the final analysis would accord farmers a meaningful repayment programs.

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