PERFORMANCE OF LIABILITIES ACCRUING FROM LIBERALIZATION OF THE BANKING SECTOR IN NIGERIA

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ABSTRACT. This paper investigates the behavior of the banking sector with a view to ascertaining whether or not the deposit liabilities accruing from financial liberalization were efficiently applied by the sector to enhance performance. It is based on the experience of Nigeria which is a developing country that suffered severe and prolonged economic recession leading to the adoption of financial liberalization policy in 1986. The investigation yields interesting results which reveal that the effect of expansion in deposit liabilities on performance of the banking sector was indeed positive and highly significant. It follows therefore that the banking sector efficiently utilized the expanded deposits to enhance profit and hence the policy of financial liberalization largely benefited shareholders in the banking sector.

1. INTRODUCTION

The economy of Nigeria (the most populous country in Africa) went into profound depression in the early 1980s due mainly to mismanagement and weakening of economic structures. The depression was characterized by unprecedented double-digit inflation as well as weak output growth that fell short of International Monetary Fund/World Bank prescribed growth rate of 6 – 7 percent required to reduce poverty by half in the year 2015. Consequently, unemployment and poverty rose to astronomical levels while the financial system remained considerably weak. In a determined effort to revive the economy, the government of Nigeria in collaboration with International Monetary Fund/World Bank embarked on economic reforms in 1986 beginning with financial liberalization.

With the adoption of financial liberalization policy in 1986, the regulatory framework guiding operations of banks and other financial institutions changed remarkably while deposit and lending rates were allowed to float thus making the financial system more competitive. In order to prevent the possible short-term adverse effects of liberalization on the financial institutions, decisive actions were taken by the monetary authority to monitor and safeguard deposit liabilities as well as ensure that financial institutions are adequately capitalized to promote safety and soundness of financial business. Prudential guidelines were accordingly introduced which were promptly applied to all the financial institutions. One of such guidelines specified unambiguous steps that banks should take to recognize and fully provide for their non-performing assets. Added to the prudential guidelines was the increase in minimum paid-up capital of the banks in national currency from 30 million to 500 million in 1998 and subsequently to 25 billion in 2005.

The transformation of the financial system, to a large extent, revived the waning confidence of the public, which was quite pervasive in the early stages of economic recession, thus leading to increased inflow of deposits. It is in the light of the foregoing that this paper attempts to

investigate whether or not the increase in deposits was efficiently used to enhance profitability of the banking sector and shareholders' worth. The investigation is carried out using appropriate analytical techniques capable of producing reliable results.

2. The Research Issue

The funds accruing from deposits, to a very large extent, determine the performance of the banking sector in all economies (Stuhr and Van Wicklen, 1994; Ncube and Leape, 2008). A large pool of funds could be used for meeting maturing obligations of the sector, and more importantly, for granting loans and advances that would generate income, hence the strategic role of funds in determining performance cannot be overemphasized. A financial system that is characterized by increasing inflow of deposits would therefore have little or no difficulty in granting loans and advances as well as investing in other financial assets with good prospects of enhancing profitability. The level of performance is however significantly enhanced when such liabilities are efficiently managed (Graham and Horner, 1985; Pandey, 2004; Bekaert et al, 2008; Kalev et al, 2008; Bai and Green, 2009).

The banking sector in Nigeria has been characterized by increasing deposits arising from growing public confidence engendered by the policy of financial liberalization that was enunciated in 1986, which has enabled the banks to grant more loans and advances to consumers and investors in the economy. How the use of these deposits impacted on the performance of the banks is the issue of immense importance which the underlying study attempts to empirically investigate. More specifically, the study seeks to determine the effect of the liabilities on profit of the banks in the Nigerian economy that has been liberalized since 1986. This study is important to shareholders and other stakeholders in the banking sector because it would shed light on how efficient the banks have been in using the accruing deposits generated by liberalization. The literature on financial liberalization is somewhat skewed in favor of macroeconomic aspects of liberalization hence this study attempts to approach the issue from a microeconomic perspective in other to beef up the literature on microeconomic aspects of financial liberalization in Nigeria.

3. Preview of the Banking Sector in Nigeria

The evolution of banking sector in Nigeria dates back to the pre-independence era when the financial system was virtually dominated and controlled by foreigners. The establishment of the Central Bank of Nigeria (CBN) in 1959 encouraged growth of the banking sector after independence in 1960. Aside from its regulatory role the CBN has been instrumental to the growth and development of the banking sector by issuing short-term securities that constitute significant proportion of bank portfolio (Ojo and Adewunmi, 1982). The short-term securities are mostly treasury bills and treasury certificates which recorded tremendous expansion in the last three decades. The financial liberalization policy of 1986 was very instrumental in expanding activities of the banking sector. The banks accounted for more than 80 percent of expansion in the financial system as the number of commercial banks increased astronomically due to the liberalization measures that were put in place. The Central Bank of Nigeria (2009a) further reveals that the number of commercial banks increased from 29 in 1986 to the highest number of 89 in 2004, while their branches increased from 1,367 to 3,492 in the same period. The merchant banks on the other hand increased from 12 in 1986 to a maximum number of 38 in the year 2000, while their branches shot up from 27 to 113 in the same period. The spate of mergers and acquisitions that took place in the financial system of Nigeria after 2004 however consolidated the banks and reduced the total number to 25 as at 2009, but the total number of branches remained at peak level. These banks have become considerably large in terms of capital base, assets and liabilities, which underscores the fact that financial liberalization largely increased the deposit base of the banking sector in Nigeria.

Prior to 1986, commercial bank deposits recorded the highest increase of about 23.4 percent in 1983, which rose to about 51.2 percent in 1999 following liberalization of the financial system. Similarly, merchant bank deposits recorded the highest increase of about 29.8 percent in 1982, which rose to an all time high of 103.1 percent in 1993 due to liberalization (Central Bank of Nigeria, 2009b). Generally, expansion in deposits was quite large in the post-liberalization period of 1986 - 2009 compared to the preceding period. The trend therefore indicates that the banking sector recorded rapid growth in deposits within the period.

The banking sector in Nigeria has therefore grown quite significantly since 1986 and the growth has been characterized by intense competition among the banks. In order to sustain the growing confidence of the public in the sector the government established the Nigerian Deposit Insurance Corporation (NDIC) in 1988 to provide insurance cover for depositors' money. The Central Bank of Nigeria (CBN) also provided protection for depositors by checking the books of all licensed banks to address anomalies that may lead to distress and loss of deposits. Since the establishment of NDIC and the effective CBN monitoring of the banks the sector has been relatively stable. These reforms were not limited to the money market as the capital market has also gone through considerable reforms leading to impressive growth in volume of trade and market capitalization (Ariyo and Adelegan, 2005).

4. Theoretical Issues in Financial Liberalization

One important factor that has hindered growth of financial system in developing countries, prior to the 1980s, is the financial repression that constitutes a serious constraint to mobilization and investment of funds. The concept of financial repression can be attributed to McKinnon (1973) and Shaw (1973) who presented the first systematic attempt at taking into account some of the specific characteristics that impair the performance of financial system in developing countries. The financial system in most developing countries is characterized by a series of government intervention that would not allow market forces to determine the true level of interest rates. The intervention takes different forms, such as imposition of large reserve and liquidity requirements, as well as ceiling on lending rate. In addition to this, there are restrictions that inhibit competition and choice of portfolio in the system. The former takes the form of barriers against entry into the system while the latter consists of conditions that constrain banks to engage in certain types of lending, and prohibit them from acquiring some types of financial assets.

More specifically, the McKinnon-Shaw hypothesis states that in a repressed financial system, real rates of interest on financial assets are either low or negative especially when the prevailing rate of inflation is high. This may ultimately lead to a slow down of activities in the sector in at least two ways. One, savers would react to the artificial interest rate by shifting away from financial assets into real assets (McKinnon, 1988). Two, the low rate of interest produces a bias in favor of current consumption, resulting in a reduction of aggregate savings and investment in the sector (Athukorala and Rajapatirana, 1993). The net effect of these processes would inevitably be adverse and detrimental to growth of the financial system and the economy as a whole.

Aigbokhan (1995) re-states the importance of McKinnon-Shaw hypothesis by arguing that the financial system cannot effectively mobilize and channel resources from surplus areas to deficit areas in the economy when it is under repression. Concisely, his argument is that financial liberalization stands out as a preferable option to repression because it brings about higher interest rate and financial deepening that is required to facilitate growth of the financial system. Anyanwu (1995) corroborates this position by stating that the remedy for adverse effects of repression lies in the keeping of positive and more uniformly high real rates of interest across the financial system by eliminating interest rate ceiling. With such liberalization, savers and investors operate in accordance with the dictates of market forces which would engender healthy competition and efficiency of the system (Chandar et al, 2009; Chung et al, 2009).

Agenor and Montiel (1996), in their argument, also tend to support liberalization of the financial system. They see interest rate ceiling and high reserve requirements as inimical to efficient allocation of resources by the system. Interest rate ceiling introduces a wedge between social and private rates of return thereby distorting inter-temporal choices in the economy. Moreover, the portfolio effect of such ceiling induces savers to switch from acquisition of claims in the financial system to accumulation of real assets such as estates and gold. The ceiling also discourages foreign portfolio investment in the economy as well as encouraging capital flight.

The position of Khalaf (2011) also conforms with McKinnon-Shaw hypothesis that financial liberalization leads to financial deepening. He argues that interest rate deregulation stimulates financial deepening in the long-run by encouraging savings in the banking sector and increasing the volume of financial assets in the economy. However, in the short-run, deregulation of interest rate may not have significant effect on savings if there is increase in salaries and wages which seems to have explained the situation in Iraq after the U.S invasion of 2003. The suggestion here is that other factors aside from interest rate deregulation can impact on financial development in the economy. Such factors may include inflation rate, exchange rate, and return on investment.

The structural school economists led by Wijnbergen (1982) and Taylor (1988) hold a contrary view to the McKinnon-Shaw hypothesis. They doubt the ability of higher interest rate to enhance financial deepening and economic growth. The argument here is that higher rate of interest may expand savings in the financial system, but the savings cannot effectively be transformed into credit because the high interest rate on loans will itself lead to a contraction of demand for credit. The net effect of higher interest rate, therefore, would be enormous liquidity that may place additional cost on the financial system as savers must be paid their interest entitlement the credit problem notwithstanding.

The structuralist position seems to have weakened considerably in recent times with the tacit support of International Monetary Fund (IMF) and the World Bank for the McKinnon-Shaw proposition (Edo, 2004). The two multilateral institutions have endorsed financial liberalization policy in all developing and transition countries to enable them surmount their economic problems. Thus, the era of financial repression is gradually giving way as more countries have continued to adopt the financial liberalization option. The results from these financial reforms are however mixed. In some countries, especially in Asia, the effects have been favorable and expansionary (De Melo and Tybout, 1986; Khatkhate, 1988; King and Levine, 1993). In others, especially in Latin America and Africa, the reforms worsened the problems of the financial system in the short-run and resulted in financial distress (Corbo and De Melo, 1987; Diaz-Alejandro, 1985).

Overall, the views expressed in literature seem to weigh in favor of financial liberalization which may have some initial shortcomings but certainly creates a net positive impact on the financial system that facilitates the process of rapid economic growth (Phylaxis and Xia, 2006; Silva and Chavez, 2008; Harris, 2008).

5. Financial Liberalization and the Economy of Nigeria

In Nigeria, the financial system was under serious repression in the 1970s but was considerably liberalized in the 1980s to enable it grow and facilitate, among other things, rapid economic growth and integration of the country into the global economy. Iganiga (2010) reveals that overtime the financial system has indeed been positively influenced by the liberalization policy. In his argument, the adoption of market determined cash reserve requirement over the period 1987-2008 showed that 1 percent change in reserve requirement caused cash intensity and domestic savings to rise by 5.54 percent and 5.0 percent respectively. Similarly, increase in capital base of banks rekindled public confidence in the financial system hence 1 percent increase in the capital base caused savings to increase by 3.6 percent. Also, the reduction of government ownership interest in financial institutions led to improvement in financial development indicators.

Several studies on financial liberalization in Nigeria have provided further insight into its effect on the overall economy. Indeed most studies in Nigeria have tended to focus on macroeconomic effects of financial liberalization. Ogun and Akinlo (2011) used descriptive statistics and Vector Autoregressive (VAR) model and estimation techniques to investigate the impact of financial system reform in Nigeria. The study found that financial reform led to financial deepening, increase in credit to the private sector, and growth in stock market activities. However, this did not translate into growth of the economy, as investment and economic growth remained very low relative to pre-reform period. The impact of financial liberalization on the economy was therefore mostly low or negative under the reform. Furthermore, the VAR estimates of the study reveal that financial liberalization had either negative or insignificant positive effect on investment and real GDP growth in the reform period. The lesson from these results is that financial system reform may have enhanced financial development, but it did not enhance economic growth due to the prevalence of macroeconomic instability and structural bottlenecks. The reform was thus introduced in an economic environment characterized by high inflation, unstable exchange rate, high level of unemployment, low productivity, etc. The authors conclude that financial system reform is not sufficient to enhance growth of the economy. It needs to be complemented with structural reform and infrastructural development.

This view is also shared by Bakare (2011) who found in his study of financial liberalization and economic growth in Nigeria that increase in interest rate led to considerable rise in the level of savings and capital formation but no significant impact was made on economic growth. In the same vein, Okpara (2010) found that financial liberalization in Nigeria encouraged savings but overall it did not encourage economic growth. This is further buttressed by Ayadi, Adegbite and Ayadi (2008) when they investigated the relationship between financial development and economic growth in post-structural adjustment era in Nigeria. The results from this investigation reveal that financial liberalization encouraged stock market activities, but did not impact favorably on economic growth. Prior to this study, Ikhide and Alawode (2002) had found that poor sequencing of the liberalization process in Nigeria initially caused high inflation and excessively high rate of interest that impaired the performance of the financial system in facilitating economic growth.

In another study, Akinlo and Egbetunde (2010) used the Vector Error-correction Mechanism (VECM) framework to investigate the long-run causal relationship between financial development and economic growth in ten Sub-Saharan African countries including Nigeria. Long-run causality relationship was found to exist among the variables used in estimation. The VECM Granger causality test yielded a unidirectional relationship running from financial development to economic growth in Nigeria, as well as three other countries (Central African Republic, Democratic Republic of Congo, and Gabon). The lesson from this result, according to the authors, is that since a unidirectional relationship exists between financial development and economic growth, efforts need to be sustained in order to consolidate the gains of financial development in Nigeria and the three countries. They recommend financial liberalization to all Sub-Saharan African countries as a way of facilitating economic growth.

In a recent study, Akinlo and Ajilore (2011) investigated the effect of financial liberalization on capital flight in Nigeria. The simulation results reveal that interest rate deregulation policy stimulated capital flight, while exchange rate policy produced a dampening effect on capital flight. The study concludes that financial liberalization, per se, might not be the panacea for stemming capital flight, but rather deeper and more fundamental changes are needed in the economic and political structures of the country.

The effect of financial liberalization on small and medium scale enterprises (SMEs) in Nigeria was examined by Woldie and Adeniji (2008). Before the era of financial liberalization in Nigeria, government pursued policies aimed at reducing constraint to external finance for SMEs. During the period, government used direct monetary control measures to influence aggregate credit to the economy and prescribed interest rate at a lower level in order to make external finance available to preferred sectors and SMEs. However, the credit to SMEs during this period was

relatively small. The liberalization of the financial system promoted competition in the banking sector, encouraged deposit mobilization and improved access to finance by industries, especially the SMEs. In spite of the growth in deposits in the banking sector, the SMEs and the economy as whole did not show corresponding growth. Thus, financial liberalization is not sufficient to significantly improve growth of SMEs.

These recent studies on financial liberalization in Nigeria are of particular interest because they employed estimation methods capable of producing reliable results which this present study also intends to use. However, these studies have followed the tradition of focusing more on the macroeconomic aspects of financial liberalization. The underlying study in this paper attempts to focus on the microeconomic aspect of financial liberalization as reflected in the performance of the banking sector. It thus attempts to draw more attention to the study of microeconomic aspects of financial liberalization in Nigeria.

6. Empirical Methodology and Model Specification

6.1. **Methodology.** One problem with some empirical investigations is that data used in estimation are not tested. When dealing with time series data, it is important to investigate whether the series are stationary or not because the regression of non-stationary series on another may yield spurious results. According to Engle and Granger (1987), the parameter estimates from such regression may be biased and inconsistent. The standard method used in identifying stationary time series data is the unit root test. The most commonly used is the Augmented Dickey-Fuller (ADF) test proposed by Dickey and Fuller (1981), which is also employed in this study. A concurrent test to determine the long-run relationship among variables under investigation is conducted by employing the Johansen co-integration test (Johansen, 1991). This is important because variables that fail to converge in the long run may be hazardous to policy making.

Another common problem with empirical investigations is that they often ignore the feedback effect among variables in a model. In order to address this problem, vector auto-regression (VAR) is used in this study. In a VAR each variable is regressed on its own lag and the lags of other variables in the model. In this way, the procedure allows each variable to be affected by its own history and the history of each other variable thus minimizing the problem of simultaneity (Kretzmer, 1992).

The VAR contains several procedures for evaluating relationships. Two of the procedures are adopted in this study namely causality test and variance decomposition. The causality test is used to determine whether the impact of increase in deposit liabilities on bank performance is statistically significant. While the causality test indicates this, it may not show the relative magnitude of the impact. Therefore, the variance decomposition is used to determine the relative magnitude of such impact. More specifically, it indicates the percentage change in performance that may be attributed to the effect of expansion in deposit liabilities. Such estimates are mostly useful for analyzing impacts in a multivariate system as clearly demonstrated by Sims (1989) and Todd (1990).

The study covers the period 1986–2009 (24 years) which has sufficient degree of freedom to capture a considerably large proportion of the effect of expansion in deposit on banking sector performance in Nigeria over time.

6.2. **Model Specification.** According to Sims and Todd, if there is true simultaneity among a set of variables they should all be treated on equal footing, and there should not be a priori distinction between endogenous and exogenous variables. It is in this spirit that they developed the VAR model based on Granger causality test. The VAR model of liabilities (deposits) and performance (profit) in the banking sector posits that the two variables under consideration as well as other economic variables are inter-related. National income may be used to represent other economic variables (Mlambo and Oshikoya, 1999). The inter-relationship of the variables is depicted in the model below.

$$PRT_t = \alpha_{1t} + \sum_{j=1}^{k}\beta_{1i}PRT_{t-i} + \sum_{j=1}^{k}\lambda_{1i}DPT_{t-i} + \sum_{j=1}^{k}\theta_{1i}NAI_{t-i} + u_{1t} \qquad (6.1)$$

$$DPT_t = \alpha_{2t} + \sum_{j=1}^{k}\beta_{2j}PRT_{t-i} + \sum_{j=1}^{k}\lambda_{2j}DPT_{t-i} + \sum_{j=1}^{k}\theta_{2j}NAI_{t-i} + u_{2t} \qquad (6.2)$$

$$NAI_t = \alpha_{3t} + \sum_{j=1}^{k}\beta_{3j}PRT_{t-i} + \sum_{j=1}^{k}\lambda_{3j}DPT_{t-i} + \sum_{j=1}^{k}\theta_{3j}NAI_{t-i} + u_{3t} \qquad (6.3)$$

Where PRT_t = Profit of the banking sector over time, DPT_t = Banking sector deposit over time, NAI_t = National income over time, PRT_{t-j} = lagged profit ($j = 1, 2, 3$), DPT_{t-j} = lagged deposit ($j = 1, 2, 3$), NAI_{t-j} = lagged national income ($_{j=1,2,3}$), $_k$=total number of lags, α_{it}=autonomous term (intercept), β_{ij} = coefficient of profit, λ_{ij} = coefficient of deposit, θ_{ij} = coefficient of national income, u_{it} =stochastic error term (Gaussian white noise).

The model has a three-lag structure ($k = 3$) and would be estimated for the period 1986 – 2009 (24 years). Profit of the banking sector is the aggregate of bank profits, while deposit also refers to aggregate deposit of the sector. National income is measured by gross domestic product at factor cost because it reflects the actual value of income in Nigeria.

An alternative indicator of performance could be the Return on Equity (ROE) which depends largely and positively on profit of the banking sector (PRT). PRT is therefore a more proximate indicator of performance than ROE, hence the choice. Moreover, there is incomplete time series data on bank ROE in Nigeria, which suggests that the use of such data may generate misleading results. The study also recognizes the fact that NAI may have some correlation with DPT hence we employ the VAR model and estimation techniques which are capable of minimizing this problem. The results are therefore generally expected to be reliable estimates of the effects of interaction between and among the variables.

It is important to re-state that the variables (DPT and PRT) which enter estimation in first differences may not necessarily have a direct positive relationship. Since deposits are liabilities, they may not have positive effect on profit of banks instead it is bank assets that would most likely have such effect. It is possible for DPT to rise while PRT declines if deposits are not efficiently managed. The only ground on which an increase in DPT can generate a corresponding increase in PRT is when the banks apply and manage the deposits efficiently. The estimation results will prove whether or not this efficiency exists in the banking sector of Nigeria. The results of the tests and estimations carried out on the model are presented and discussed in the ensuing section.

7. Analysis of Empirical Results

7.1. **Unit Root and Co-integration Tests.** In order to avoid producing spurious results that would make estimates biased and inconsistent, the time series data for all variables in the model were tested within the period 1986 – 2009 to determine their stationary status, yielding the results reported in table 1. The results of unit root test in the table show that all the variables are non-stationary in levels because their corresponding t-statistics and normalized bias statistics indicate that the unit root coefficients are insignificant at the critical 5 percent level. However, they are shown to be stationary in their first differences as the coefficients are indicated to be significant at the 5 percent level. The Godfrey statistics report that serial correlation in residuals is insignificant which makes the estimates highly dependable. Since the variables have been found to be stationary in their first differences, the results from estimation of the model are unlikely to be bias and inconsistent.

Table 1: ADF Unit Root Test Results

Variable	Unit root co-efficient	t-statistic	Normalized bias statistic	Serial correlation statistic	
				G(1)	G(2)
PRT	0.29	2.45	4.18	0.04	0.03
DPT	0.32	2.09	3.51	0.03	0.05
NAI	0.41	2.52	5.44	0.02	0.04
ΔPRT	0.59	5.21*	15.90*	0.03	0.05
ΔDPT	0.54	4.77*	14.86*	0.02	0.06
ΔNAI	0.62	6.03*	18.07*	0.04	0.04

*Significant at the 5 percent level.

Note:

(i) Variables are indicated in levels and first differences;

(ii) Results are reported in absolute values;

(iii) G(1) and G(2) are Godfrey statistics that test for first and second order serial correlation in residuals.

The relationship between macroeconomic variables in the long run is very important for the purpose of policy-making. If variables have a causal relationship that allows them to move in perfect harmony in the long run, policy making and implementation become less worrisome. In the light of this, a co-integration test was conducted to determine if this type of relationship exists amongst the variables under consideration in this study, and the results produced are shown in table 2.

The table reports the test statistics for determining the co-integrating relations in the model. The results indicate that the null hypothesis of no co-integration among the variables ($r = 0$) is rejected at the 5 percent level by the trace-statistic and maximum eigen-statistic. Similarly, the hypotheses of at most one co-integrating relation ($r \leq 1$) and two co-integrating relations ($r \leq 2$) are rejected at the 5 percent level by the trace-statistic and 1 percent level by the maximum eigen-statistic. However, the hypothesis of at most three co-integrating relations ($r \leq 3$) could not be rejected at the 5 percent and 1 percent levels. It follows therefore that there is sufficient number of co-integrating relations amongst the variables in the model hence they possess high probability of converging in the long run which augurs well for policy making.

Table 2: Johansen Co-integration Test Results

Co-integrating Vector (PRT, DPT, NAI)		
Null Hypothesis	Trace-statistic	Max eigen-statistic
r = 0	19.8*	24.3*
r $\leq$ 1	22.4*	31.0**
r $\leq$ 2	21.6*	26.1**
r $\leq$ 3	18.9	20.7

* Rejected at the 5 percent level

** Rejected at the 1 percent level

The two tests conducted so far have produced results to show that the variables under study possess desirable empirical characteristics that qualify them to be included in a vector auto-regression (VAR) causality test.

7.2. **Causality Test.** Causality tests are generally sensitive to lag structure. In order to minimize this sensitivity problem, multiple lag lengths are usually adopted in such tests involving vector auto-regression (VAR). For the purpose of this study, multiple lag lengths of 1–3 periods are employed and the results of the test are presented in table 3. The table reports that the F-statistics of causality DPT→PRT are significant in all the lag specifications, indicating that increase in deposit liabilities caused appreciable growth in profit of the sector. This impact is significant at the 1 percent level for the one-period and two-period lags and also significant at the 5 percent level for the three-period lag. The causality NAI→PRT indicates that the

impact of national income on bank profit is significant at the 5 percent level for the two-period and three-period lags only. It is thus obvious that increase in deposit liabilities has a relatively stronger impact on profit of the sector.

On the other hand, the F-statistics of causality PRT→DPT indicate that profit of the sector caused some increase in deposit liabilities which is only significant at the 5 percent level for the two-period and three-period lags. It follows that in the causal relationship between deposit liabilities and profit in the banking sector, the impact of deposit liabilities is stronger. The variations that occurred in the F-statistics across the three lag specifications are indications that the test was somewhat sensitive to the lag structure.

Table 3: VAR Causality Test Results (F-Statistics)

Direction of Causality	Lags		
	1	2	3
DPT → PRT	6.05*	5.13*	2.48**
PRT → DPT	1.10	2.02**	2.36**
NAI→ PRT	1.26	2.04**	2.72**
PRT→NAI	0.96	1.04	1.33
DPT →NAI	0.49	1.16	1.21
NAI → DPT	1.21	2.33**	2.40*

* F-statistic significant at the 1 percent level.
** F-statistic significant at the 5 percent level.

The table thus clearly shows that causality DPT → PRT is stronger than any other causality in the model which means that the impact of expansion in deposit liabilities on performance of the banking sector in Nigeria has been quite tremendous. The causality test results tend to provide evidence that banks to some extent were efficient in the application of accruing deposits. In order to make the results more dependable, it is important to also determine the magnitude of the impact made by deposit liabilities on performance of the sector by analyzing the variance decomposition estimates.

7.3. **Variance Decomposition.** In the preceding analysis it was established that the impact of deposit liabilities on performance of the banking sector in Nigeria is highly significant. The magnitude of this impact can be ascertained from the variance decomposition estimates obtained from the vector auto-regression. These estimates which are reported in table 4 indicate, among others, the relative effect of deposit liabilities on performance of the sector. In table 4, estimates in the DPT column represent the relative effect of deposit liabilities on profit as well as effects on itself and national income, for the three lags. In particular, expansion in deposit liabilities accounted for 65.36 percent of the growth in bank profit in lag 3, and 58.66 percent in lag 1. Thus, expansion in deposit liabilities can generally be considered to have contributed 58.66 – 65.36 percent to performance of the banking sector during the period. This contribution is quite significant and overwhelming when compared with the corresponding estimates in PRT and NAI columns.

The PRT column indicates the contribution of profit to its own growth, that of deposit liabilities and national income. The contribution made to national income falls within the range of 11.07 – 21.22 percent, the minimum occurring in lag 3 and the maximum in lag 2. The contribution to expansion in deposit liabilities falls within the range of 25.41 – 28.01 percent, the minimum occurring in lag 1 and the maximum in lag 3. The contribution to its own growth as shown in the table is in the range of 2.02 – 3.67 percent, which is not significant. The impact of profit on itself is therefore highly inferior to the impact made by deposit liabilities, which as earlier indicated falls within the 58.66 – 65.36 percent range. This again underscores the impressive contribution of deposit liabilities to performance of the banking sector.

Table 4: Variance Decomposition Estimates (in percentage)

Dependent Variable	Lag	Explanatory variable			
		PRT	DPT	NAI	SE*
PRT	1	2.02	58.66	39.32	2.17
PRT	2	3.67	60.20	36.13	1.88
PRT	3	2.41	65.36	32.23	2.23
DPT	1	25.41	5.02	67.50	1.62
DPT	2	26.78	2.10	68.72	1.99
DPT	3	28.01	2.01	69.02	2.05
NAI	1	18.31	69.63	12.06	2.89
NAI	2	21.22	70.43	8.35	2.04
NAI	3	11.07	75.61	13.32	2.93

* Standard error of variance (in percentage)

The NAI column represents the contribution of national income to its own growth as well as that of deposit liabilities and bank profit. It made a contribution of 8.35 - 13.32 percent to own growth, 67.50 - 69.02 percent to growth in deposit liabilities and 32.23 - 39.32 percent to growth in bank profit. It follows that contribution of national income to the performance of the banking sector is again significantly lower than contribution made by deposit liabilities, which as indicated before is in the range of 58.66 – 65.36 percent. Thus, amongst the three variables in the model, the contribution of deposit liabilities to performance of the banking sector is particularly impressive and superior. The standard errors of variance in the table are all below 5 percent and therefore insignificant hence the results can be considered largely dependable.

The significant and impressive impact made by deposit liabilities on performance of the banking sector during the period suggests that the banks may have efficiently utilized the expansion in deposit arising from the liberalization policy of 1986, which has greatly enhanced profit of the sector and shareholders' worth, hence caution needs to be exercised by policy makers to avoid reversing the gains made by the banking sector from financial liberalization.

8. CONCLUSION

Financial liberalization has over the years engaged the attention of economic and financial researchers in the developing world and this paper adds to the growing literature on the issue. Previous empirical studies on financial liberalization in Nigeria have tended to focus mainly on its macroeconomic effects as is the case in several other countries. The overall literature on financial liberalization is therefore skewed in favor of macroeconomic studies. The underlying study in this paper approached the issue of financial liberalization in Nigeria from a micro-economic perspective by using appropriate model and estimation techniques to examine the performance of the banking sector in the era of financial liberalization. More specifically, the study applied unit root and co-integration tests in the first instance to test the time series data used. Subsequently, VAR causality test and variance decomposition methods were employed to evaluate the impact of deposit liabilities on performance of the banking sector.

The estimation results show that deposit liabilities exerted considerable degree of impact on banking sector performance by contributing 58.66 – 65.36 percent to profit as against the contribution of 32.23 – 39.32 percent made by national income and 2.02 - 3.67 percent own contribution. These findings suggest that the banks were relatively efficient in utilizing deposit liabilities accruing from liberalization to enhance profit and shareholders' worth hence this level of efficiency needs to be sustained by avoiding direct monetary policy measures that could constitute bottleneck to the banks in managing deposit liabilities.

The findings in this paper clearly reveal the favorable effects of financial liberalization in consonance with studies such as De Melo and Tybout (1986), Khatkhate (1988), King and Levine (1993), etc. However, the findings appear to be a departure from other studies such

as Diaz-Alejandro (1985), Corbo and De Melo (1987), Cho and Khatkhate (1989), etc; which found the effects to be largely unfavorable.

The policy of financial liberalization has thus proven to be highly beneficial to the banking sector in Nigeria by increasing the volume of deposits, and the banking sector has proven to be relatively efficient in utilizing the deposits. This is a clear manifestation that the financial system in Nigeria, which is dominated by banks, experienced impressive growth. It is therefore instructive that financial liberalization needs to be strengthened in order to improve on the gains already achieved.

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