

9-1996

Monetary Policy and Commercial Bank's Performance in Nigeria: Some Theoretical and Empirical Extensions

Michael O. Nyong
University of calabar

Follow this and additional works at: <https://dc.cbn.gov.ng/efr>



Part of the [Economics Commons](#)

Recommended Citation

Nyong, Michael O. (1996). Monetary Policy and Commercial Bank's Performance in Nigeria: Some Theoretical and Empirical Extensions. CBN Economic and Financial Review. 34(3), 777-795.

This Article is brought to you for free and open access by CBN Institutional Repository. It has been accepted for inclusion in Economic and Financial Review by an authorized editor of CBN Institutional Repository. For more information, please contact dc@cbn.gov.ng.

Monetary Policy and Commercial Banks' Performance in Nigeria: Some Theoretical and Empirical Extensions

Michael O. Nyong*

This study provides richer insights into the performance of commercial banks in Nigeria using more indicators and more refined methodologies. It sheds more light on the critical factors responsible for differential performance among the banks. The high levels of profitability declared by banks in the light of their high levels of under-capitalization imply excessive risk-taking which is incompatible with prudent banking behaviour. We also found that the size of banks exert a positive and statistically significant effect on their performance. The result suggests that the promotion of large banks may be in the interest of maintaining a safe and sound banking system. The results further show a statistically significant and negative effect of managerial efficiency on banks' profit performance. This finding is reinforced by the low level of operating efficiency as indicated in the ratio of operating expense to total earnings. The findings raise serious concern about the quality of management in the Nigerian banking industry and the need for concerted efforts to promote staff development programmes as a logical first step in preparing for dynamic banking in the 1990s and beyond. Our results also show that the monetary authorities in Nigeria are unable to impose their capital adequacy standards on the banks they presumably regulate. This was reflected by the non-significance and negative sign on the regulatory variable. However, the Central Bank had no enabling Decree empowering it to take more drastic or punitive measures against the erring banks within the period under review. Although BOFI and the Failed Banks Decrees have now remedied the situation, the lapses in these Decrees, such as the absence of instrument autonomy and high cost of restructuring, should be quickly addressed.

I. INTRODUCTION

In a recent paper in this journal, Uchendu (1995) attempted to investigate the effect of monetary policies on the performance of Nigerian commercial banks. Using an eclectic theoretical framework of which the most notable are portfolio management

*Dr. M. O. Nyong is a staff of the Department of Economics, University of Calabar.

theory, the statistical model and production function approach, he developed a modified model to identify the impact of some selected monetary policy variables on the performance of Nigeria's commercial banks in the period 1970-1993. Ordinary least squares single equation estimation procedure was used.

He found that whether you use all banks data, six banks, or the three large banks' data, the dominant factors influencing bank profitability are interest rate, exchange rate, bank reserves, banking structure and unit labour costs, particularly when return on capital is used as a measure of profitability. He concluded that a stable and realistic monetary and banking policies are important for profitable commercial banking in the Nigerian setting.

The study by Uchendu is significant in two respects. First, it is an attempt to shed more light on the factors which influence bank profitability. By so doing it assists the industry managers in identifying the dominant variables to target in order to improve their performance. Given the systemic distress in the banking industry, the importance of such a study cannot be overemphasized.

Second, at a time when there is instability in the banking system, the study raises questions on the oligopolistic nature of banking competition in Nigeria for the effective transmission of monetary policy, for efficient financial intermediation and for overall stability of the banking system. The relevant question is: are smaller banks more likely to fail than larger ones?

This study extends Uchendu's study in four significant directions. First, we observe that Uchendu identified some variables for improved performance. Given the fact that the environment under which the banks operated between 1970 and 1985 is significantly different from the 1986-1993 period, should the behaviour of bank managers remain the same throughout the period or should they adopt different strategies for profitability under different conditions? This study will attempt to tackle this issue.

Second, the problem of instability in the nation's banking system has undoubtedly created enormous problems for the conduct and implementation of monetary policy. Is the instability in the banking industry induced by monetary policy itself, by moral hazards on the part of banks or by both? Deposit insurance theory predicts that deposit insurance produces incentives for banks to take risks arising from high subsidy rate. This distortion pushes them to greater risk exposure via the use of financial leverage (Boyd and Runkle, 1993), and leads ultimately to failure (Nyong, 1994, 1995). This raises a fundamental question: has the monetary authorities been less diligent in their regulatory control or has monetary policy inconsistency aggravated the distress in the banking system? This aspect of performance evaluation focuses on the behaviour of the monetary authority itself.

Third, the financial intermediation theory, which is firmly rooted in an environment where agents are asymmetrically informed, predicts that large banking firms are more cost efficient and hence less likely to fail. Underlying the modern financial intermediation theory is the competitive advantage gained by large firms

due to technical efficiency and economies of scale. How well does the behaviour of Nigerian commercial banks fit the predictions of this theory? This issue indirectly considers the question raised in Uchendu's study with respect to the role of large banks in the transmission of monetary policy and the operation of commercial banking industry in Nigeria.

Finally, the performance measures used by Uchendu are overtly restrictive and rather too tilted in favour of the macroeconomic concerns of banking firms. Profitability as a measure of performance of banks reflects the microeconomic objective of firms. This microeconomic concern are not necessarily shared by central banks and the deposit insurance corporations. The central banks' objectives as they pertain to banks' performance are different and must be explicitly considered to obtain complete view of banks performance. In particular, liquidity and capital adequacy considerations are crucial for a proper assessment of the performance of commercial banks, particularly in the context of failure prevention and the maintenance of safety and soundness in the system (Nyong, 1994).

It is precisely for this reason that banks have to achieve a delicate balance between the desire for increased profitability and the imperatives of maintaining safety and soundness in the market place. Hence, another objective of this study is to investigate the performance of commercial banks with respect to the capital adequacy standard set by the monetary authority. The question to be investigated is: does the capital investment behaviour of commercial banks conform to the standards set for them by the Central Bank of Nigeria? Has the Central Bank of Nigeria been effective in imposing its capital standards on the banks it presumably regulates?

The rest of this paper is organized as follows. This first part has been the introduction. Section II provides the theoretical framework on which the study is anchored. The analytical methodology is considered in section III including the use of two-stage least squares estimation procedure. In Section IV we present the empirical results and analysis. Section V concludes the study with a summary of the main results and policy implications.

II. THEORETICAL FRAMEWORK

The performance of commercial banks is influenced by a host of factors some of which are macroeconomic, institutional, regulatory and legal. The common features of the theories discussed in Uchendu (1995) indicate that in attempting to maximize profits, banks must do so under capital adequacy and liquidity considerations. Uchendu rightly noted that the regulatory influences of monetary authorities include those on interest and exchange rates, bank reserves (indicating credit availability), labour costs or productivity.

It is hypothesized that an increase in lending rate as well as the spread between the lending rate and deposit rate lead to increase in profit, so does increase in black market premium. However, an increase in excess liquidity may or may not lead to

an increase in bank profitability. An increase in excess reserves may lead to increases in profit in a condition of strong demand for loanable funds. It may lead to a fall in profit in a condition of weak demand and hence constrain the ability of banks to make profits. Rising labour costs could increase profit only if matched with productivity. Generally, increase in labour cost should decrease bank profit as it is a cost to the banking firm. It may lead to an increase in profit if the increase is matched with productivity, in line with the marginal productivity theory. This proposition is testable. Also related to the issue is the level of operating efficiency indicated by the ratio of total operating expense less interest paid on deposit to total earnings. It has been argued that part of the problems in banking is the frivolous indulgence by management in ostentatious expenditure that has little or nothing to do with productivity.

This is consistent with the expense preference theory of Williamson, otherwise called the theory of managerial discretion (Williamson, 1963). According to this theory, managers have discretion in pursuing policies which maximize their own utility rather than profit maximization for shareholders. Such utility include the satisfaction which managers derive from certain types of expenditure. Managers' prestige, power and status are to some extent reflected in the amount of slack they receive in the form of expense account, luxurious offices and buildings, company cars and other perquisites of office. They are economic rents accruing to the manager which add little to productivity. Operating efficiency attempts to capture this aspect of bank behaviour.

The deposit insurance theory discussed in the first part of this paper provides interesting insights into the behaviour of commercial banks (Flannery, 1989; Chan, Greenbaum and Thakor, 1992). In the context of this theory, banks are viewed as "portfolios of risky claims." As insured banks increase their risk of failure without limit, there is an expected value transfer of wealth from government deposit insurance corporation to bank owners. Thus, regulation of bank risk exposure is necessary to reduce the expected losses incurred by the deposit insurance corporation. The regulatory feed-back in the form of capital requirements means that larger banks are less inclined to take greater risks (Flannery, 1989).

Keely (1990) provides another rationale for the behaviour of large banks in this context. According to Keely, large banks may be less willing to take risks so as to exploit the deposit insurance subsidy. An important prediction of this theory is that large banks are less likely to fail than small ones because of their low inclination to take risks. This implies that although the profits made by large banks may not be high, they are more secured. This view is consistent with the assertion that the best of all monopoly profits is a quiet life (Nyong, 1990).

Another related theory is the modern intermediation theory which provides a new dimension to bank behaviour as seen in Boyd and Prescott (1986), Williamson (1986), and Allen (1990). It predicts an inverse relationship between size and probability of failure, and hence that the larger the size, the greater the potential

profit that may be realized. The superior performance of large banks is due to economies of scale in production, adoption of advanced technology and diversification. For instance, large scale not only reduces the cost of contracting among asymmetrically informed profitable agents, it also permits banks to fund the investments.

The theory of portfolio regulation provides new insights into the performance of banking firms. According to this theory, the regulation of banks is necessary to maintain safety and soundness of the banking system, one which is in a position to meet its liabilities without any difficulty. This has led to attempts by the regulatory authorities to compel greater solvency and liquidity on individual banks than they would adopt voluntarily.

Thus, bank supervisory and regulatory agencies devote more time to the determination of the riskiness of banks' assets and the adequacy of their capital. According to Peltzman (1970), "if the asset portfolio is deemed too risky or capital inadequate, the relevant supervisory agency will attempt to compel a change in the bank's balance sheet" (pp 2-3). Thus, the bank is given a Hobson choice: more capital or less risk assets.

However, regulators attach more weight to regulating bank capital than the detail of asset portfolio because capital adequacy is the most important single indicator of bank's soundness, particularly with respect to solvency or the probability of bank failure¹. Bank failure has serious adverse effect on economic development. Large scale bank failures limit the ability of banks to create money, jeopardize the payment mechanism and disrupt lending activities. Similarly, "since banks are the conduit through which stabilization policy is transmitted to the economy at large, generalized bank failures impair the continued usefulness of the banking system as a conduit for macroeconomic stabilization policies" (Nyong, 1994, p. 420).

Adequate capital permits the acquisition of the institutional structure necessary for a bank to perform the intermediation function and provide related financial services. It also provides protection in conditions of near economic collapse against unanticipated adversity leading to loss in excess of normal expectations. Adequate "capital provision against excess loss permits the bank to continue operations in periods of difficulty until a normal level of earning is restored" (Vojta, 1980, p. 165).

Thus, regulators have formulated their standards of capital adequacy so that they can be given empirical expression. These capital adequacy standards have led to questions on whether or not regulators have been able to bring about changes in bank capital when their standards of capital adequacy differed from those of bankers. Aggressive banks may try to extend the frontiers of "imprudent management policy" by operating with less capital base, often in defiance of regulatory guidelines. But supervisory agencies – on guard against bank failure with the attendant high cost to society – must resist this decline of capital. A banking industry with very few failures inspires public confidence. "It also gives the appearance that the regulator has done his job well" (Watson, 1980, p. 151).

A number of studies such as those by Peltzman (1970) and Mayne (1972) have attempted to explain investment in commercial banking within the theory of bank portfolio regulation. Peltzman, for instance, found that "there was no evidence that bank investment behaviour conform to the standards set for it by the regulatory agencies" in the United States and hence that regulation has been ineffective. There has been no serious research in this tradition in Nigeria (known to me) that have attempted to evaluate regulatory/supervisory effectiveness via a rigorously formulated econometric model and tested for empirical validity in Nigeria's banking environment.

III. ANALYTICAL METHODOLOGY

The performance measures used in this study are return on capital and capital adequacy, the first reflecting the microeconomic concern of banking firms with respect to profit maximization and the second reflecting the concern by the regulatory/supervisory authority that profitability be achieved within the context of maintaining a safe and sound banking system. Cross sectional data are used for the period 1982-1985 before the structural adjustment programme (SAP) and deregulation, and 1987-1990 in the SAP period.

For the period 1982-1985, a sample of 21 commercial banks are used. For the period 1987 to 1990, a sample of 30 commercial banks are used. Two sets of regressions are run for each period using the average values of 1982-1983, 1984-1985, 1987-1988 and 1989-1990.

Model Specification

We hypothesize a simultaneous equation model linking profitability to capital investment in banking. The theoretical argument is straightforward. Profits depend on capital investment which provides the wherewithal for the purchase of equipment and machinery and the adoption of modern technology for improved performance. However, increases in profits may also motivate further increases in capital investment which in turn expand the scope of banking operations for increased profitability. Thus, there is a two-way causality between profitability and capital investment in banking. The two-stage least squares estimation procedure is used.

Table 1
Definition of Variables

PROF	= Profitability of bank i measured by return on capital (ROC);
BDDLON _{i}	= Managerial efficiency of bank i measured by ratio of loan loss to total loans and advances;
WGR _{i}	= Labour cost of the i th bank measured by the ratio of wages/ salaries to total number of people employed;
RESLON _{i}	= The i th bank reserves-loans ratio indicating its strategic investment orientation;
SIZE _{i}	= The i th bank's size measured by logarithm of total assets;
KAP _{i}	= Capital investment in banking measured by percentage change in the i th bank capital in a given period:
CAPDEP _{i}	= capital-deposit ratio of bank i ;
DEPOG _{i}	= expected rate of growth of the i th bank deposit proxied by previous year's deposit growth rate;
KAPRG _{i}	= ratio of regulator's desired capital to actual capital held by bank i , where adequate or desired capital by regulators is calculated as risk asset ratio;
EXPEAN _{i}	= Expense preference of bank i measured by ratio of total expenses less interest payments on deposits to total earnings;

From the discussions in the previous section, some of the factors which influence bank profit include managerial efficiency, labour cost, bank reserves, bank size, capital investment, interest rate, reserve levels, exchange rate and level of operating efficiency. With respect to capital investment in banking, the factors which influence the behaviour of banks include profitability of investment in banking and regulatory and supervisory considerations. The definitions of the variables are indicated in Table 1.

Specification of the Model

The functional relationship is of the form:

$$\text{PROF} = f(\text{BDDLON}, \text{WGR}, \text{KAP}, \text{RESLON}, \text{SIZE}, \text{EXPEAN}) \quad \dots \quad \dots \quad 1$$

- +-, +-, +-, + -

$$\text{KAP} = g(\text{PROF}, \text{CAPDEP}, \text{DEPOG}, \text{KAPRG}) \quad \dots \quad \dots \quad \dots \quad \dots \quad 2$$

+ + + +

where the signs directly below each variable is the expected effect on the dependent variable. Operationally, the estimating equations are of the form:

$$\text{PROF}_i = \alpha_0 + \alpha_1 \text{BDDLON}_i + \alpha_2 \text{WGR}_i + \alpha_3 \text{KAP}_i + \alpha_4 \text{RESLON}_i + \alpha_5 \text{SIZE}_i + \alpha_6 \text{EXPEAN}_i + V_4 \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad 3$$

$\alpha_1 < 0, \alpha_2 > 0 / < 0, \alpha_3 > 0 / < 0, \alpha_4 > 0 / < 0, \alpha_5 > 0, \alpha_6 < 0.$

$$\text{KAP}_i = \beta_0 + \beta_1 \text{PROF}_i + \beta_2 \text{CAPDEP}_i + \beta_3 \text{DEPOG}_i + \beta_4 \text{KAPRG}_i + V_2 \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad 4$$

$\beta_1, \beta_2, \beta_3, \beta_4 > 0.$

Equation 3 is the profitability equation. The equation is similar to the one adopted by Uchendu except that interest rate and exchange rate variables are absent. These rates make sense in time series analysis. In cross-sectional analysis, they enter as constants, as most banks will adopt the same rate as stipulated by Central Bank regulation. The coefficient of default risk of bank portfolios which reflects efficiency of bank is expected to be negative. The more losses sustained on its loan portfolio, the less profit the bank makes, *ceteris paribus*. WGR is expected to enter with a negative sign. A positive sign should be expected if wages and salaries of bankers are consistent with their productivity.

The sign on growth in capital investment is ambiguous. Theoretically, either a positive or negative sign may be expected, depending on the perception of the bank's management. If the management sees its capital base as serving to attract depositors and other customers to the bank for various transactions, a positive sign is expected. This is reinforced by regulators' concern for capital adequacy and the need to maintain safety and soundness of the banking system. However, if management sees profitability as the dominant and overriding objective and all other things are secondary, then aggressive pursuit of profit will mean operating on a very thin capital base. In this case, bank capital acts as a constraint on the manager's decision to make more profitable investment. A negative sign will be expected in this case.

The coefficient on bank reserves/loan ratio is expected to be either negative or positive. It is expected to be negative if the bank holds large excess reserves and less in loans and advances to the various sectors of the economy for growth. In a situation of high demand for loanable funds in profitable sectors of the economy, the strategy of keeping large reserves is suicidal.

Alternatively, in situations where banks are not seriously involved in their traditional role of directing mobilized resources from less essential uses to more productive investments (resource allocation) and instead engage in mere exchange of local currency for foreign currencies in the money market to maximize profit, a positive sign is to be expected. Far more serious is the implications that banks that behave in such ways do so at the risk of contravening monetary policy guidance in such transactions.

The size variable reflects the deposit insurance and the modern financial intermediation theories. In all cases, a positive sign is expected. A small and positive value for the coefficient will be consistent with deposit insurance theory while a large and positive value will be consistent with financial intermediation theory. The coefficient on EXPEAN is expected to be negative in line with the expense preference theory postulated by Williamson.

In equation 4, we observe that *a priori*, an important determinant of capital investment in banking is the expected profitability of investment which is proxied by the current rate of return on capital. The coefficient on this variable is expected to be positive.

Similarly, the coefficient on capital-deposit ratio is expected to be positive. The larger the capital-deposit ratio, the more banks tend to increase their capital investment in line with the volume of their deposit base. The coefficient for KAPRG measures the responsiveness of commercial banks' investment to capital regulation and hence reflects regulatory effectiveness. The measure permits us to evaluate performance of banks and to test the effectiveness of bank regulation by first determining the amount of capital that would be deemed adequate by regulators and comparing this with the amount actually held by banks.

This will enable us to see if the discrepancies between adequate and the actual capital held by a bank do in fact affect the flow of new capital investment into the bank. The coefficient of this variable is expected to be positive. A positive and

statistically significant coefficient will indicate regulatory effectiveness while non-significance indicates regulatory ineffectiveness. A negative sign will indicate that regulation is not only ineffective today but has been consistently ineffective in the past. This explains why a negative sign is a stronger confirmation of regulatory ineffectiveness than a zero coefficient would have been. The coefficient of the deposit growth is expected to be positive and in unity (Peltzman, 1970).

Data Sources and Reliability

Data requirement for this study is formidable. To obtain some measure of success in this direction, data were obtained from the Annual Reports of Banks, Nigeria's Banking Almanac and Nigeria's Banking, Finance and Commerce for various years.

One of the characteristics of the data in less developed countries is the weaknesses in their data base thereby creating doubts on their usefulness for projections or guide to policy. Nigerian data do not escape this shortcoming. The data used in this study have been certified by external auditors of the sample banks reflecting a true and fair view of the transactions or operations carried out in the bank within the period. We use these set of data without giving room to perfectionist's despair. The results presented here should be interpreted with this limitations in mind.

Granger's Causality

Before presenting the results of our estimation, we first determine the direction of causality between profitability and capital investment in banking using Granger's causality test². We adopted a simplified specification to economize on our degrees of freedom. The estimated form of the model is shown below:

$$\text{PROF}_t = a_0 + a_1\text{PROF}_{t-1} + a_2\text{KAP}_t + a_3\text{KAP}_{t-1} + e_1$$

$$\text{KAP}_t = b_0 + b_1\text{KAP}_t + b_2\text{PROF}_t + b_3\text{PROF}_{t-1} + e_4$$

On estimating the equations for the various years using autoregressive method, we found that a_2 , a_3 , and b_2 , b_3 were consistently statistically significant with high F-ratios in both cases, thereby establishing two-way causality. Having obtained preliminary results which confirm our use of simultaneous equations model, we present the results of estimation of equations 3 and 4 in the next section.

IV. EMPIRICAL RESULTS AND ANALYSIS

The empirical results are presented in Table 2 and Figure 1. Table 2 indicates the performance of the banks with respect to profitability and capital adequacy. In all cases, the t-values are indicated in bracket directly below the estimated parameters and each coefficient is evaluated within the standard two-tailed test.

Table 2
Regression Coefficients and Related Statistics (2SLS)
Dependent Variable PROF: 1989/90

Constant	BDDLON	WGR	KAP	RESLON	LSIZE	EXPEAN
28.598 (0.313)	-5.988 (-3.742)	1.230 (0.697)	1.190 (6.346)	0.084 (3.232)	-0.436 (-1.924)	-1.663 (-1.892)
R2 = 0.659		F-ratio = 21.65				
1987/88						
38.790 (1.544)	-5.3011 (-3.533)	-0.008 (-0.429)	0.018 (2.999)	0.004 (2.066)	3.514 (2.145)	-0.446 (-1.871)
R2 = 0.700		F-ratio = 23.69				
1984/85						
68.916 (1.083)	-0.587 (-2.587)	-20.459 (-1.477)	1.555 (4.258)	-0.002 (-2.037)	3.826 (2.142)	-1.050 (-1.309)
R2 = 0.659		F-ratio = 16.53				
1982/83						
178.14 (1.919)	-0.335 (-1.911)	-0.243 (-0.486)	0.246 (1.981)	-0.013 (-2.0593)	4.264 (1.876)	-1.216 (-0.964)
		F-ratio = 18.42				
Dependent Variable: KAP 1989/90						
Constant	PROF	CAPDEP	KAPRG	DEPOG		
78.491 (2.378)	0.781 (3.856)	-13.973 (-9.035)	-51.876 (-1.079)	0.850 (1.975)		
		F-ratio = 13.56				
1987/88						
-111.66 (-0.545)	7.215 (-1.901)	36.966 (2.817)	-61.936 (-0.580)	-0.355 (1.617)		
		F-ratio = 10.69				
1984/85						
-1.564 (-0.382)	0.475 (8.037)	0.744 (1.636)	-0.518 (-1.636)	0.308 (2.369)		
		F-ratio = 22.96				
1982/83						
-4.381 (-0.410)	-0.150 (-1.278)	-6.722 (-2.311)	-38.66 (-0.176)	-0.241 (-1.445)		
		F-ratio = 9.67				

From the results of estimation of equations 3 and 4, the following facts emerge:

Managerial Efficiency

Managerial efficiency proxied by the ratio of provision for bad loans to the total loan portfolio was found to be consistently significant and negative in all regressions and in all the four periods considered. It confirms our theoretical expectations that weak management performs poorly on profitability compared to "strong" management.

The magnitude of the estimated coefficient shows that poor management was more serious during the SAP period. This result is important in the sense that it recognized the crucial role of management in proper loan appraisal as well as in the monitoring of the loan repayment profile. According to Ebhodaghe (1994),

"Poor bank management had, in the past, resulted in excessive operating expense, inadequate administration of loan portfolios, an overly aggressive growth policy to attract deposits, interest speculation coupled with other instances of poor judgement that resulted in stress for the banks" (p.17).

Our finding suggests that in banking, high quality of management should never be compromised.

Wage Rate or Productivity

The wage rate variable turns out with a positive sign in 1989/90 but a negative sign in all other periods. A closer observation indicates that neither in the post nor the pre-SAP period was the variable statistically significant even at the 10 per cent level. This suggests that the wage received by bank workers are far in excess of their productivity. This result reinforces the previous finding about the low level of managerial efficiency in Nigerian commercial banks. A vigorous training or retraining of bank staff may be required to reverse the trend.

Capital Investment in Banking

Perhaps the greatest surprise in the study is the finding of positive relationship between profitability and capital investment. Growth in capital investment in banking was statistically significant in all the regressions. This means that banks with adequate capital has the potential of increasing their profitability in the Nigerian setting. Part of the reason for this paradoxical finding is that the capital investment in banks may serve to attract customers. This variable was statistically significant at better than 1 per cent in 1989/90, 1987/88, and 1984/85 and statistically significant at better than 8 per cent in 1982/83.

Reserve/Loan Ratio

An interesting finding for this variable is that it turns out with a positive sign during the SAP period but a negative sign during the pre-SAP period. In all cases, the variable was statistically significant at better than 6 per cent level. The positive sign in the SAP period may reflect the tendency of banks to use their reserves or liquidity levels for foreign exchange transactions. Before SAP, such transactions never existed on a large scale. Thus, large reserves vis-a-vis loans portfolio may have worked against increase in bank profitability during the pre-SAP period. Although the holding of large reserve for trading in foreign currencies in the foreign exchange market increased bank profits, it may have contributed less to the real growth in the economy given the low level of loans and advances. This explains why, in spite of the huge profits generated by banks during the SAP period, the real sectors performed poorly on comparative basis. In a properly functioning banking system, profitability in banks must flow from profitability or growth in the real sectors. That this was not the case is indicative of serious distortions in the Nigerian banking environment.

Bank Size

Bank size was found to be positive and statistically significant in all the regressions except in the 1989/1990 regressions where it turns negative. The magnitude of the positive coefficients is large, indicating that the behaviour of Nigerian commercial banks is in line with modern financial intermediation theory. The size of a bank confers potential advantages such as economies of scale, ease of adoption of modern technology, and ability to attract and employ high quality staff³

However, the small value of the coefficient in 1989/90 period reflects behaviour towards greater risk taking in line with deposit insurance theory. This fact should not be ignored given that the Nigeria Deposit Insurance Corporation (NDIC) had been established during this period.

Operating Efficiency

Total expenses less interest payments/total earnings ratio was found to be negative in all the regressions. However, whereas it was not statistically significant during the pre-SAP period, it attained statistical significance during the SAP period. This means that bank management during the SAP period might have indulged themselves in substantial expenditures that have little or nothing to do with their productivity. This finding reinforces our earlier result on managerial efficiency and cast serious doubt on the credibility of commercial banks to manage the resources entrusted to them prudently. This, in itself, calls for prudential regulation and effective supervision of banks than is currently the case.

Profitability/Returns on Capital

The returns on capital is found to be positive and statistically significant in all the regressions except the last regression (1982/83). The positive sign supports the expectations that high returns in banking business motivate banks to increase their capital investment for expansion purposes.

Capital-Deposit Ratio

The result indicates that capital-deposit position of banks is inversely related to growth in bank capital. It implies that the larger the capital-deposit ratio of banks, the less banks tend to increase their capital investment.

Growth in Bank Deposit

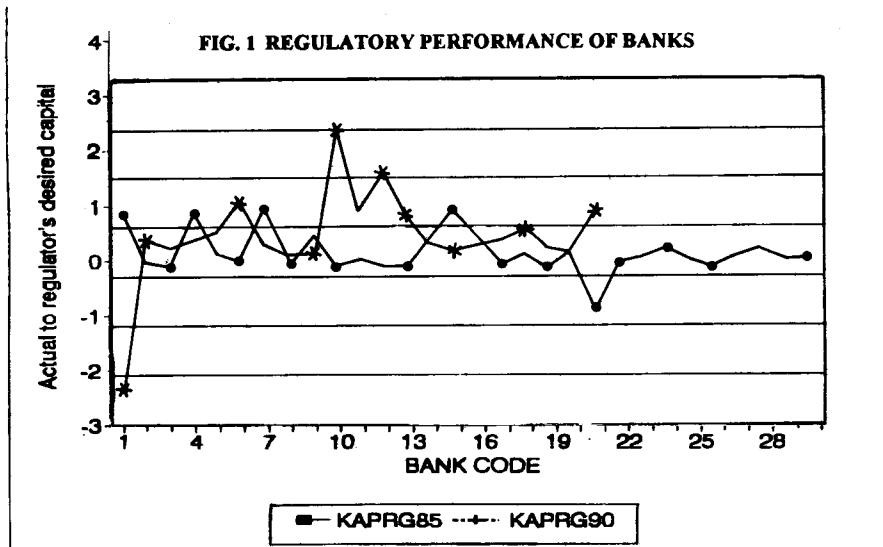
The result indicates a positive and statistically significant relationship between bank capital investment and deposit expansion. This is clearly reflected by the results in 1989/90 and 1984/85. The other results are negative but they are not statistically significant. The result shows that banks have the potential to increase capital investment in line with expansion in the volume of their deposit.

Regulatory Ability and Bank Performance

Perhaps one of the most interesting findings of this study is the conspicuous absence of any relationship between capital investment in banking and bank regulation with respect to capital adequacy. This means that the regulation/supervision of banks by the monetary authorities may not have been effective. This result, taken together with the one on growth in deposit, indicates that although Nigerian commercial banks have the potential of increasing their capital investment in line with expansion in their deposit as required by the regulatory/supervisory agency, the monetary authorities have been unable to compel them to maintain adequate capital within the period under review or to bring about changes in their capital when their standards of capital adequacy differed from those of bankers. Figure 1 confirms this assertion.

Figure 1 highlights the performance of banks with respect to capital adequacy for a cross section of 21 banks in the period 1984/85 and 30 banks in the period 1989/90. The result indicates a greater preponderance of banks whose ratio of actual capital to desired capital of regulators (KAPRG85 for the 1984/85 period and KAPRG90 for the 1989/90 period) is less than one, which suggests under-capitalization. Standing alone, this will indicate regulatory ineffectiveness.

However, they could have been produced by portfolio changes, and even with effective regulation one would not expect immediate elimination of any discrepancy between regulators' desired capital and actual capital. The crucial test is whether the capital stock is responding to regulatory pressure. Our regression results provide



this crucial test of regulatory ineffectiveness. The fact that the sign on the regulatory variable is negative implies that bank regulation measures may not have been sufficiently effective.

However, it is difficult to expect the monetary authorities to do better than they did. The Central Bank, as the regulatory institution on banking, has little statutory power to compel banks to behave according to set standards. No drastic punitive actions could be taken on erring banks until recently. Previously, the CBN merely issued warnings or made appeals or relied on moral suasion. In cases where fines were imposed, they were often too light or lenient and could not therefore serve as a deterrent. For instance, the 1985 Annual Report of the CBN submits that: "in spite of the recurrent emphasis on the need to improve on the quality of management and loan portfolio, the response of this category of banks had been slow." (p.118).

Thus, although the CBN carried out its regulatory and supervisory functions, it had limited powers to enforce compliance. This is again reflected in its 1988 Annual Report.

"The examination of the banks covered mainly the compliance of the banks with the provisions of the banking laws, the fulfillment of the conditions for the issuance of banking license (in respect of newly licensed banks), general appraisal of the quality and structure of the management, the soundness of the lending policy, evaluation of the quality of assets with particular emphasis on loans, determination of the adequacy of capital in relation to the volume and character of their business and appraisal of income and expenditure. Other aspects of the examination include evaluation of the

adequacy of provisions against losses and the adequacy and effectiveness of the recording, management information and internal control systems in their operations. Some of the banks covered during the year continued to experience problems of weak management and capital inadequacy" (p. 118).

The 1991 *Annual Report* of the CBN submits that:

"Banking supervision activities covered maiden, routine and special examinations of the domestic and foreign operations of 46 licensed commercial and merchant banks in Nigeria. The routine examination revealed that some banks had management, liquidity and solvency problems while some failed to comply with monetary policy guidelines and were penalized accordingly" (p.132).

What the Central Bank needed, and which it never got until recently, was an enabling Decree empowering it to impose heavier fines on recalcitrant banks, withdraw the license of erring banks, or forbid them from inter-bank clearing services.

The recent adoption of more stringent measures by the Central Bank and the Nigeria Deposit Insurance Corporation in the exercise of their responsibility, is largely traceable to the promulgation of the Banks and Other Financial Institutions (BOFI) Decree No. 25 of 1991 and the Failed Banks (Recovery of Debts) and Financial Malpractices in Banks Decree No. 18 of 1994. With these instruments, the Central Bank and the Nigeria Deposit Insurance Corporation (NDIC) were not only able to bark, they could also bite. The Central Bank of Nigeria and Nigeria Deposit Insurance Corporation have already taken steps to ensure the liquidation of some affected banks or institute a process of restructuring and rehabilitation of some other banks.

For instance, five banks – Kapital Merchant Bank, Alpha Merchant Bank, Financial Merchant Bank, Republic Bank, and United Commercial Bank – have been liquidated⁴. Twelve other banks including African Continental Bank (ACB), Co-operative and Commerce Bank (CCB), New Nigeria Bank (NNB), National Bank of Nigeria (NBN), Pan African Bank (PAB), Mercantile Bank of Nigeria (MBN), Progress Bank (PB), North-South Bank, First African Trust Bank (FATB), Premier Commercial Bank (PCB), Ivory Merchant Bank (IVB), Century Merchant Bank (CMB) are at various stages of restructuring and rehabilitation by the CBN and NDIC.

Given the generalized distress afflicting Nigerian commercial banks, the momentum to sanitize and restore confidence in the banking industry should be sustained. Some of the gaps in the Failed Bank Decree such as the absence of instrument autonomy and the high cost of restructuring distressed banks should be quickly addressed. The trials of bank managers and customers should be quickly concluded.

On restructuring, it has become traditional for the CBN to take over or acquire distressed banks, appoint an interim management board to restructure the bank and make them more attractive to investors who may want to buy them (Agada,

1996). About eleven distressed banks have so far been offered for sale but none has been confirmed sold by the CBN/NDIC. Recently, CBN re-advertised six of the banks (all state government-owned banks). The efficacy of restructuring measures adopted by the CBN seems to deserve a re-examination.

It is appreciated that the monetary authorities have to obtain the approval of the Head of State before even taking over the management of a sick bank, but it is difficult to understand why it takes so long to restructure a bank and sell it after an approval had been obtained. One may also wonder whether the long delay does not worsen the distressed banks' cases when it is realized that they were acquired in 1994? The fact is that there are usually protracted legal challenges in courts by affected banks before and after the approval for their take over.

A possible resolution of the problem may seem to lie in the autonomy of the CBN. Perhaps, the CBN should be piloted by an independent board of directors and if they fail to perform, they should be removed from office. Such an autonomous CBN would not mean that the CBN would jettison government policies.

Whatever be the case, sustained efforts should be made to sanitize the banks: marketable ones should be sold while those irredeemable should be liquidated as a matter of urgency to save cost. The need for urgency is indicated by the increase in the number of distressed banks during a period of one year. As indicated in the CBN 1995 *Annual Report*, despite restructuring efforts, the number of distressed banks rose from 42 in 1994 to 51 in 1995.

This may suggest that some of the strategies currently employed by the monetary authorities are not achieving the expected results because of other exogenous constraints. An interim management board should not be allowed more than three months to repackage a bank after which the bank should be offered for sale in the open market. Quick sale or liquidation of distressed banks will help cushion the domino effects of distressed banks on the banking system and, by implication, stem the rising wave of generalized distress in the system.

V. CONCLUDING REMARKS

In this study, we have attempted to extend our understanding of monetary policy and the performance of commercial banks as a complement to Uchendu's study. Although our results are not directly comparable given the use of different methodologies and time periods, two important findings are common in both studies. First, bank reserves is a statistically significant factor influencing differentials in bank profitability. Second, bank size exerts a positive and statistically significant effect on bank profit performance. The result suggests that the promotion of large banks may be in the best interest of the economy for reasons discussed earlier.

However, contrary to Uchendu's findings, we found a statistically significant and negative effect of managerial efficiency on bank's profit performance. This finding is reinforced by low level of operating efficiency as indicated in the ratio of

operating expense to total earnings. The effect of this variable on bank profit is also negative.

In addition, contrary to expectations, increased capital investments in banking has the potential of promoting improved profit performance. This variable was consistently positive and statistically significant across all samples and estimation periods. We also found that the monetary authorities in Nigeria are unable to impose their capital adequacy standards on the banks they presumably regulate within the period under review. This was reflected by the non-significance and negative sign on the regulatory variable. However, the Central Bank had no enabling Decree empowering it to take more drastic or punitive measures against the erring banks. BOFI and the Failed Banks Decrees have now remedied the situation.

Thus, with greater supervisory and regulatory effectiveness buoyed up by BOFI, the Failed Bank Decrees and greater autonomy of the CBN, we expect that the discrepancy between actual capital held by banks and adequate capital mandated by the regulatory authority will either disappear altogether or reduce considerably with time. Therefore, there is the need for the monetary authorities to be committed to the implementation of BOFI and the Failed Bank Decrees while measures should be taken by government to redress the obvious weaknesses in the Decrees.

Overall, the study provides richer insights into the performance of commercial banks in Nigeria using more indicators and a more refined methodology. It also sheds more light on the critical factors responsible for differential performance among the banks. The high levels of profitability declared by banks coupled with the high levels of under-capitalization imply excessive risk taking which is incompatible with prudent bank behaviour. These results should be interpreted with caution given the limitations on the data base used for the study. More studies, coupled with improved data base, will be required to assess the robustness of our results.

NOTES

1. Notice that the monetary authorities are able to perform their function of lender-of-last-resort only to banks that are illiquid but solvent.
2. See Granger (1969).
3. See also Nyong (1989c).
4. See Daily Times, Friday May, 1996.

REFERENCES

- Agada, Jude (1996). "Bank Restructuring: How Successful?" *Business Times*, (Monday, October 7), pp. 16-17.
- Allen, Franklin (1990). "The Market Information and the Origin of Financial Intermediation." *Journal of Financial Intermediation*, Volume 1, No. 1, May.
- Boyd, John H. and Edward Prescott (1986). "Financial Intermediary Coalitions." *Journal of Economic Theory*, 38, pp.211-232.
- and David Runkle (1993). "Size and Performance of Banking Firms: Testing the Predictions of Theory." *Journal of Monetary Economics*, 31, pp. 47-67.
- Cham, Yuk-Shee, Stuart Greenbaum, and Anjan Thakor (1992). "Is Fairly Priced Deposit Insurance Possible?" *Journal of Finance*, 47, pp. 227-245.
- Ebhodaghe, John U. (1994). "Boardroom/Management Practices and Distress in the Banking System." *NDIC Quarterly*, Volume, 4 Number 2 (June), pp. 15-25.
- Flannery, Mark (1989). "Capital Regulation and Insured Banks' Choice of Individual Loan Default Risks." *Journal of Monetary Economics*, 24, pp. 235-258.
- Granger, C.W. J. (1969). "Investigating Causal Relations by Econometric Models and Cross-Spectral Methods." *Econometrica*, 37, pp. 424-38.
- Keely, Michael (1990). "Deposit Insurance, Risk, and Market Power in Banking," *American Economic Review*. 80, pp. 1183-1200.
- Mayne, Lucille (1972). "Supervisory Influence on Bank Capital " *Journal of Finance*, 27, pp. 637-51.
- Nyong, Michael (1989a). "Size, Scale and Performance: A Study of Commercial Banks in Nigeria." Unpublished Ph.D Dissertation, Department of Economics, University of Ibadan, Nigeria.

- (1989b). "The Effect of Quality of Management on the Profitability of Commercial Banks: A Comparative Analysis Based on Nigerian Banking Experience." *The Developing Economies* (September).
- (1989c). "Bank Size and Technological Change: The Nigerian Experience." *Journal of Management Studies*, University of Ghana, Legon (January/December).
- (1990). "Market Structure, Risk and Profitability: Further Evidence of the Quiet Life Hypothesis and the Relative Efficiency in Banking." *Development Policy Review* (June).
- (1994). "Banking Supervision and the Safety-Soundness of the Banking System: An Early Warning Model Applied to Nigerian Data." *CBN Economic and Financial Review* (December).
- (1995). "An Alternative Approach to Crisis Management in the Nigerian Economy: The Case for the Banking Industry in the 1990s and Beyond," *First Bank of Nigeria Plc Bi-Annual Review*, Volume, 3 Number 8 (December) pp. 1-21.
- Peltzman, Sam (1970). "Capital Investment in Commercial Banking and its Relationship to Portfolio Regulation." *Journal of Finance*, Volume, 78, Number 1 (January/February), pp. 1-26.
- Uchendu, Okorie (1995). "Monetary Policy and the Performance of Commercial Banks in Nigeria." *Central Bank of Nigeria Economic and Financial Review* Volume, 33, Number 2 (June), pp.156-170.
- Vojta, George (1980). "Bank Capital Adequacy" in Thomas Havrilesky and John Boorman (eds.), *Current Perspectives in Banking: Operations, Management and Regulation*. AHM Publishing Corporation. Illinois.
- Williamson, O. E. (1963). "Managerial Discretion and Business Behaviour." *American Economic Review*.
- Williamson, Stephen (1986). "Costly Monitoring, Financial Intermediation, and Equilibrium Credit Rationing." *Journal of Monetary Economics* 18, pp. 159-179.