

# **DETERMINANTS OF BANK PROFITABILITY: COMPANY-LEVEL EVIDENCE FROM NIGERIA**

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## **ABSTRACT**

To contribute to the existing knowledge of bank profitability in Nigeria, this study sought to identify significant company-level determinants of bank profitability. Using a panel data set comprising 91 observations of 33 banks over the 2000-2004 period, regression results reveal that capital size, size of credit portfolio and extent of ownership concentration are significant company-level determinants of bank profitability in Nigeria. Size of deposit liabilities, labour productivity, state of IT, ownership, control-ownership disparity and structural affiliation are insignificant; and the relationship between bank risk and profitability is inconclusive.

## ***I. – Introduction***

The importance of bank profitability can be appraised at the micro and macro levels of the economy. At the micro level, profit is the essential prerequisite of a competitive banking institution and the cheapest source of funds. It is not merely a result, but also a necessity for successful banking in a period of growing competition on financial markets. Hence, the basic aim of a bank's management is to achieve a profit, as the essential requirement for conducting any business (Bobáková, 2003: 21). At the macro level, a sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system. The importance of bank profitability at both the micro and macro levels has made researchers, academics, bank managements and bank regulatory authorities to develop considerable interest on the factors that determine bank profitability (Athanasoglou *et al.*, 2005: 5).

The Federal Government of Nigeria (FGN) and the Central Bank of Nigeria (CBN) have perennially sought permanent measures that would enhance the profitability and stability of banks operating in the Nigerian banking industry. Unfortunately, they have never completely succeeded in achieving this feat. For instance, from 1987-1991 financial sector reforms (intended to enhance competition in the sector, mobilize savings and lead to a more efficient allocation of resources) were implemented, encompassing elements of liberalisation (such as the decontrolling of interest rates) and measures to enhance prudential regulation and tackle bank distress (Oluranti, 1991). Also, between 1990 and 2004, bank regulators increased the minimum share capital requirement for banks operating in Nigeria five times, namely in 1991, 1997, 2000, 2001 and 2004 (Aburime and Uche, 2006). However, these measures were unsuccessful in curtailing the spate of bank distress and failures in the

1990s and beyond (Oluranti, 1991: 59; Uche, 1996: 436; Uche, 1998: 30; Beck *et al.*, 2005: 8 and Brownbridge, 2005). Currently, a set of banking sector reforms have also been introduced to ensure *inter alia* a strong and reliable banking sector (Okagbue and Aliko, 2005: 1). Unfortunately, if the historical antecedents of financial sector reforms in Nigeria are anything to go by, the current reforms may also not help to improve bank profitability and stability in Nigeria. Against this backdrop, the broad aim of this paper is to clearly identify, on the basis of empirical evidence, significant determinants of bank profitability in Nigeria. However, its scope is delimited to company-level determinants of bank profitability.

In the main, there are three motivations for this paper. Firstly, the CBN, though currently concerned about enhancing and maintaining the stability of banks operating in Nigeria, has not mapped out econometrically-determined targets and guidelines toward achieving this feat. It has also never rendered econometrically-determined answers to the following questions: Why are some banks in Nigeria more successful than others? To what extent are discrepancies in these banks' profitability due to variations in endogenous factors under the control of bank management? Answers to these questions are vital for the development of effective strategies aimed at eradicating distress and enhancing stability of banks operating in the Nigerian banking industry. Therefore, this study has important policy implications, as it will help bank regulatory authorities in Nigeria determine future policies and regulations to be formulated and implemented toward improving and sustaining banking sector profitability and stability. Secondly, though similar studies have been conducted in Greece (Athanasoglou *et al.*, 2005), the United States of America (Berger *et al.*, 1987; Berger, 1995b and Angbazo, 1997), Tunisia (Naceur and Goaid, 2001 and Naceur, 2003) and Colombia (Barajas *et al.*, 1999), there is no econometric study to my knowledge that has examined this very

important issue in the Nigerian context; therefore the present study will fill an important gap in the existing literature and improve the understanding of bank profitability in Nigeria. Finally, the outcome of this study will be of tremendous importance to the shareholders and managements of banks in Nigeria who are interested in making effective decisions that will help to boost the profitability of their respective banks.

To achieve its broad aim, the remainder of this paper is organised in the following manner. The next section is a review of relevant literature. Section 3 outlines the empirical estimation methods. Section 4 presents the results. Section 5 concludes the paper.

## ***II. –Literature Review***

The determinants of bank profitability have been widely studied theoretically and empirically. The studies can be grouped into two, viz: those that have focused on a particular country (e.g. Berger *et al.*, 1987; Berger, 1995b; Barajas *et al.*, 1999; Naceur and Goaid, 2001; Naceur, 2003; and Athanasoglou *et al.*, 2005) and those that have focused on a panel of countries (e.g. Haslem, 1968; Short, 1979; Bourke, 1989; Molyneux and Thornton, 1992; Demirgüç-Kunt and Huizinga, 1999 and 2001; and Abreu and Mendes, 2002). Based on the findings of these and other related studies, company-level determinants of bank profitability can be identified with some ease.

Essentially, company-level determinants of bank profitability comprise characteristics of individual bank companies that affect their profitability. Shareholder and managerial decisions and activities can directly influence these characteristics; hence, they also differ from company to company. They include capital size, size of deposit liabilities, size and composition of credit portfolio, interest rate policy, labour productivity, state of information technology, risk level, management

quality, bank size, bank age, restructuring, ownership, ownership concentration, control-ownership disparity and structural affiliation. Though shareholder and managerial decisions and activities cannot directly influence bank age, it remains a characteristic that differs from company to company; hence it is appropriate to include it as a company-level determinant of bank profitability.

### ***A. Capital Size***

Bank capital can be seen in two ways. Narrowly, it can be seen as the amount contributed by the owners of a bank (paid-up share capital) that gives them the right to enjoy all the future earnings of the bank. More comprehensively, it can be seen as the amount of owners' funds available to support a bank's business (Athanasoglou *et al.*, 2005: 14). The later definition includes reserves, and is also termed *total shareholders' funds* (Anyanwaokoro, 1996: 140). No matter the definition adopted, a bank's capital is widely used to analyze the status of its financial strength (Bobáková, 2003: 25).

Positive correlation between returns and capital has been demonstrated by Furlong and Keeley (1989), Keeley and Furlong (1990), Berger (1994), Berger (1995b), Demirgüç-Kunt and Huizinga (1999), Naceur (2003) and Kwan and Eisenbeis (2005). Investigating the determinants of Tunisian banks' performances during the period 1980-1995, Naceur and Goaid (2001) indicated that the best performing banks are those who have struggled to improve labour and capital productivity and those who have been able to reinforce their equity. Bourke (1989), Abreu and Mendes (2002) and Naceur (2003) agree that well-capitalized banks face lower need to external funding and lower bankruptcy and funding costs; and this advantage translates into better profitability.

Therefore, researchers widely posit that the more capital a bank has, the more resistant it will be to failure (e.g. Uche, 1998: 30).

### ***B. Size of Deposit Liabilities***

Empirical evidence from Naceur and Goaid (2001) indicate that the best performing banks are those who have maintained a high level of deposit accounts relative to their assets. Increasing the ratio of total deposits to total assets means increasing the funds available to use by the bank in different profitable ways such as investments and lending activities. In turn, this should increase the bank's returns on assets *ceteris paribus* (Allen and Rai, 1996 and Holden and El-Bannany, 2006).

### ***C. Size and Composition of Credit Portfolio***

The profit function of a bank includes the size and composition of its credit portfolio (Bashir, 2000 and Fries *et al.*, 2002: 10). Ordinarily, loans generate revenue through interest and increase bank profits (Rhoades and Rutz, 1982); hence, a large credit portfolio ought to imply improved profitability. However, since substandard credits are a source of heavy financial losses to a bank and have actually been held responsible for numerous bank failures (Olajide, 2006: 27), it follows that a large credit portfolio could also result in reduced bank profitability if it mainly comprises substandard credits. Therefore, it is right to conclude that the size of a bank's credit portfolio affects its profitability either positively or negatively, depending on its composition of substandard credits.

### ***D. Interest Rate Policy***

A bank's interest rate policy can be seen from two perspectives, viz: the bank's policy regarding the interests it pays on deposits received by it and the bank's policy regarding the interests it receives on credits given by it. The interest paid by a bank

on its deposit liabilities is a cost source and tends to contract the bank's income *ceteris paribus*. This is why Fries *et al.* (2002: 10) argue that the profit function of a bank includes the interest it pays on deposits. On the other hand, the interest received by a bank on credits given by it is a revenue source and tends to expand the bank's income *ceteris paribus*. Hence, Bobáková (2003: 23) argues that the profitability of a bank is influenced by its interest rate policy. This policy can be adjusted to enhance profitability. Here the decisive factor is the bank's ability to set such an interest rate for asset deals that meets costs of funds, operating costs, as well as the required rate of profitability.

### ***E. Labour Productivity***

Empirical evidence from Athanasoglou *et al.* (2005: 23, 25) shows that labour productivity growth has a positive and significant effect on bank profitability. This suggests that higher productivity growth generates income that is partly channeled to bank profits. Banks target high levels of labour productivity growth through various strategies that include keeping the labor force steady, ensuring higher quality of newly hired labor, reducing the total number of employees, and increasing overall output via increased investment in fixed assets which incorporate new technology.

### ***F. State of Information Technology (IT)***

IT systems have important contributions to the managerial control of banks as well as the efficiency of customer services. Porter and Millar (1985) argue that investing in IT plays an important role in lowering the total costs of a firm (giving a cost advantage) and differentiates its products (giving a competitive advantage), which should be reflected in increased net profit.

Using evidence from accounting data, Holden and El-Bannany (2006) empirically investigated whether investment in IT systems affected bank profitability in the UK during the period 1976 – 1996. Their results revealed that investment in IT systems (proxied by number of automated teller machines) had a positive impact on bank profitability. Similarly, several other researchers (e.g. Abdullah, 1985; Katagiri, 1989; Shawkey, 1995 and Gupta, 1998) have posited that the deployment of ATMs by banks results in greater turnover in services without needing to recruit more staff and open more branches, thereby reducing transaction costs and eventually improving profitability.

The use of the Internet to effect banking transactions has also helped to reduce transaction costs and enhance bank profitability. Daniel and Storey (1997: 894) refer to the results of a survey in which the unit transaction cost for a non-cash payment is £1.08 for a branch, 54p for a telephone bank, 26p for a PC bank and just 13p for an internet bank.

### ***G. Risk Level***

Koehn and Santomero (1980), Kim and Santomero (1988) and Athanasoglou *et al.* (2005: 14, 25) suggest that bank risk taking has perverse effects on bank profits and safety. Bobáková (2003: 21) asserts that the profitability of a bank depends on its ability to foresee, avoid and monitor risks, possibly to cover losses brought about by risks arisen. Hence, in making decisions on the allocation of resources to asset deals, a bank must take into account the level of risk to the assets.

### ***H. Management Quality***

The management of the banking institution itself is also a prerequisite for achieving profitability and stability of a bank. There is evidence that superior management raise profits and market shares (Berger, 1995a and Athanasoglou *et al.*,

2005: 9). On the other hand, Montinola and Moreno (2001: 6) argue that where management quality is low and managerial monitoring is imperfect, some workers will not exert full effort, thereby “free riding” on good workers. Observing that a poor worker next to him is shirking, a good worker may reduce his own effort; so over time average effort falls to that of the poorest worker. From time to time, good workers may be hired, but their effort will eventually drop down to the preexisting level. At other times, workers who are lazier than existing employees may be hired, dragging down the performance of current workers. Since only hires that cause workers to shirk more have an impact, the equilibrium is for efficiency to fall over time and the profitability of the firm is adversely affected. In the same vein, where management quality is low and the board of directors does not provide honest and effective leadership, being often being more concerned with securing credit facilities for themselves, prudent lending practices cannot be followed. This has the net effect of increasing the ratio of substandard credits in the bank’s credit portfolio and decreasing the bank’s profitability (Mamman and Oluyemi, 1994). But Gambs (1977: 14) argues that extremely bad management may not prove fatal to a bank unless adverse economic conditions take a toll on the bank and lead to unexpected capital outflows or loan losses.

### ***I. Bank Size***

If the relative size of a firm expands, its market power and profits increases. This is the Market-Power (MP) hypothesis. The hypothesis is also referred to as the Structure-Conduct-Performance (SCP) hypothesis (Athanasoglou *et al.*, 2005: 8).

It has been argued that the effect of a growing size on bank profitability is significantly positive to a large extent (Smirlock, 1985). Kwan and Eisenbeis (2005) suggest that the difference in profitability among large and small banks is due

to production technologies and outputs, which vary across them. The relative efficiency hypothesis (Clarke *et al.*, 1984) presupposes that larger banks (where size is measured by assets) are more efficient than smaller ones, and are more profitable as a result of this superior efficiency.

The preceding arguments on the effect of size on bank profitability overlap with the idea that large banks can benefit from economies of scale (Baumol, 1959). However, some researchers suggest that little cost saving can be achieved by increasing the size of a banking firm (Berger *et al.*, 1987). They suggest that eventually very large banks could face scale inefficiencies, perhaps due to bureaucratic reasons (Athanasoglou *et al.*, 2005: 15).

#### ***J. Bank Age***

Newly established banks are not particularly profitable (if at all profitable) in their first years of operation, as they place greater emphasis on increasing their market share, rather than on improving profitability (Athanasoglou *et al.*, 2005: 23).

#### ***K. Restructuring***

Claessens *et al.* (1997: 1) explain that enterprise restructuring involves depoliticizing management by giving managers more autonomy, adopting new accounting standards and practices, shedding labor and concentrating on activities in which the enterprise has a competitive advantage. The better corporate governance that can result leads to higher market value and profitability.

#### ***L. Ownership***

In the literature, ownership is widely reported to be a determinant of bank profitability. Several studies (e.g. DeYoung and Nolle, 1996; Vander Venet, 1996; Demirgüç-Kunt and Huizinga, 1999; Bashir, 2000; Berger *et al.*, 2000; Clarke *et al.*,

2000; Naceur, 2003; Bonin *et al.*, 2004; Jeon *et al.*, 2004; and Micco *et al.*, 2004) have concluded that foreign owned banks are more profitable than their domestic counterparts in developing countries and less profitable than domestic banks in industrial countries, perhaps due to benefits derived from tax breaks and other preferential treatments. Privately owned banks have also been assessed to be more profitable than their state owned (public) counterparts (Short, 1979; La Porta *et al.*, 2002a; Barth *et al.*, 2004; Micco *et al.*, 2004; and Sapienza, 2004). Specifically, Micco *et al.* (2004: 17) and Athanasoglou *et al.* (2005: 15) posit that public banks' low profitability is due to the fact that, rather than maximizing profits, they respond to a social mandate.

### ***M. Ownership Concentration***

Using data for all the more than 700 Czech firms that were consistently listed on the Prague Stock Exchange over the period 1992-95, empirical evidence from Claessens *et al.* (1997: 2) identifies strong positive relationships between ownership concentration (top five investors' shares as a percentage of total shares outstanding) and firm management / profitability / market value. They explain that concentrated ownership gives the owners better incentives to monitor firms and make necessary changes in management. By contrast, in firms with diffuse ownership, no single owner has an incentive to "mind the store," so management is not disciplined for bad performance or rewarded for good performance". Mitton (2002) also shows that firms with concentrated ownership showed better stock market performance during the Asian economic crisis.

## ***N. Control – Ownership Disparity***

Joh (2003: 288) has identified control-ownership disparity as a determinant of firm profitability. In a firm with a high control-ownership disparity, a controlling shareholder exercises control but owns only a small fraction of the firm's cash flow. La Porta *et al.* (2002b) find that these firms are widespread around the world. Joh argues that, during economic crisis, firms having high control-ownership disparity show low performance mainly because these firms' controlling shareholders have an incentive to expropriate resources since the private benefits exceed costs. Jensen and Meckling (1976) and Shleifer and Vishny (1997) also argue that the tendency to expropriate resources increases as the control-ownership disparity increases, i.e. as the controlling shareholder owns less, and is even more likely when their position is secure. However, Morck *et al.* (1988) posit that such effects do not have a monotonic relationship.

## ***O. Structural Affiliation***

A firm's structural affiliation could have positive or negative effects on its profitability. On the positive side, Leff (1978), Hubbard and Palia (1999) and Khanna and Palepu (2000) are of the view that firms affiliated with business groups have advantages over independent firms through intragroup trading and internal capital markets, especially in less developed economies. Also, through diversification, business groups can reduce risk and uncertainty in firm operations. Furthermore, a business group can exploit its large size to borrow money at a lower cost (Joh, 2003: 296). But, on the negative side, Lamont (1997), Scharfstein (1998), Shin and Stulz (1998) and Scharfstein and Stein (2000) argue that multi-divisional firms sometimes overinvest capital in weak divisions and underinvest it in stronger ones; and this adversely affects the profitability

of the entire business group. Firms associated with business groups can also suffer greatly, as their controlling shareholders have the tools to divert firm resources through the transfer of assets from one subsidiary to another. Controlling shareholders of firm groups can move away resources for their private benefits by means such as self-dealing, as well as divert resources from one subsidiary in which they own less to firms in which they own more. The end result is inefficient investments and reduced profitability of the entire business group.

### ***P. Company-Level Determinants of Bank Profitability in Nigeria***

Some studies of the Nigerian banking industry have linked characteristics of individual bank companies to their profitability. These studies include Nwosu and Nwosu (1998), Uche and Ehikwe (2001), Beck *et al.* (2005) and Brownbridge (2005). In the main, their studies link capital base (Nwosu and Nwosu, 1998: 5), lending activities (Beck *et al.* 2005 and Brownbridge, 2005), information technology (Uche and Ehikwe, 2001: 142), management quality (Nwosu and Nwosu, 1998: 5 and Brownbridge, 2005) and bank size (Brownbridge, 2005) to the profitability of banks in Nigeria. However, among all these studies, only Beck *et al.* (2005) employed the intricacies of econometrics in deriving their conclusions.

## ***III – Empirical Estimation Methods***

### ***A. The Framework***

To empirically ascertain significant company-level determinants of bank profitability in Nigeria, a linear regression model has been predicted. While no specification test is used to support using the linear function, it is evident that the linear functional form is widely used in the literature and produces good results (Bourke, 1989

and Bashir, 2000). The majority of studies on bank profitability, such as Short (1979), Bourke (1989), Molyneux and Thornton (1992), Demirguc-Kunt and Huizinga (2001), Goddard *et al.* (2004) and Athanasoglou *et al.* (2005) use linear models to estimate the impact of various factors that may be important in explaining bank profits.

In order to eliminate the possibility of obtaining spurious correlations (Loveday, 1980), I have ensured that all the variables incorporated into the predicted model are clearly established, in the literature, to impinge on bank profitability at the company-level. Basically, I am testing for significance of the regressors; and, for this purpose, I have pegged the significance limit at 15 per cent.

Regression estimates shall be derived using the simple ordinary least squares (OLS) method (Loveday, 1969; Loveday, 1980; Koutsoyiannis, 2003 and Greene, 2004). Koutsoyiannis (2003: 100-116) statistically demonstrates that least squares estimates are the most reliable regression estimates because of their general quality of minimized bias and variance.

Finally, the data set used in this study has been elicited from the public financial statements of an unbalanced panel (Athanasoglou *et al.*, 2005 and Baltagi, 2001) of 33 commercial and merchant banks in 91 observations over the 2000-2004 period. The banks included are listed in Table 1 along with their data periods and number of observations.

## ***B. The Model***

$$P_{it} = \alpha_0 + \delta CAP_{i,t-1} + \delta DL_{it} + \delta CP_{it} + \delta CCP_{it} + \delta LP_{it} + \delta IT_{it} + \delta R_{it} + \delta S_{it} + \delta O_{it} + \delta OC_{it} + \delta COD_{it} + \delta SA_{it} + \varepsilon_{it} \quad (1)$$

where  $P_{it}$  is profits of bank  $i$  at time  $t$ ;  $CAP_{i,t-1}$  is capital size of bank  $i$  at time  $t-1$ ;  $DL_{it}$  is size of deposit liabilities of bank  $i$  at time  $t$ ;  $CP_{it}$  is size of credit portfolio of bank  $i$  at time  $t$ ;  $CCP_{it}$  is composition of credit portfolio of bank  $i$  at time  $t$ ;  $LP_{it}$  is labour productivity of bank  $i$  at time  $t$ ;  $IT_{it}$  is state of IT of bank  $i$  at time  $t$ ;  $R_{it}$  is risk level of bank  $i$  at time  $t$ ;  $S_{it}$  is size of bank  $i$  at time  $t$ ;  $O_{it}$  is ownership of bank  $i$  at time  $t$ ;  $OC_{it}$  is ownership concentration of bank  $i$  at time  $t$ ;  $COD_{it}$  is control-ownership disparity of bank  $i$  at time  $t$ ;  $SA_{it}$  is structural affiliation of bank  $i$  at time  $t$ ;  $\alpha_0$  is a constant;  $\delta$  is variable coefficient; while  $\varepsilon_{it}$  is an error term.

Table 2 is a compressed exposition of the model variables. In the table, no expected result is given for  $P_{it}$  because it is the dependent variable.

## ***IV. The Results***

The results of the empirical estimations are contained in Table 3. Their respective significance levels are highlighted in brackets. Three reliable conclusions can be drawn from these results. First and foremost, capital size, size of credit portfolio and ownership concentration are significant company-level determinants of bank profitability in Nigeria. Secondly, size of deposit liabilities, labour productivity, state of IT, ownership, control-ownership disparity and structural affiliation do not significantly determine the profitability of banks in Nigeria. Finally, the relationship between bank risk and profitability is inconclusive.

Though the results indicate that capital size is a significant determinant of bank profitability in Nigeria, only the size of the reserves component of bank capital has a significant relationship with bank profitability. The shares component of bank capital does not have a significant relationship. This finding is consistent with that of Aburime and Uche (2006), and indicates that bank share capital regulations in Nigeria have simply been altering the form and not the substance of banks operating in the Nigerian banking industry. If the negative regression coefficients of the SC to TA variables are anything to go by, they actually imply a reduction in profitability whenever there is an increase in bank minimum share capital requirements.

Estimation results also reveal that size of the credit portfolio is a significant determinant of bank profitability in Nigeria; however, the relationship is negative. It is glaring that the coefficients of all the other bank credit variables (PL to TL, NPL to TL and PBDL to TL) are also negative. These results jointly indicate widespread non-performance of bank loans and advances in Nigeria, and are consistent with the findings of Mamman and Oluyemi (1994), who attribute it to low management quality. The results also indicate that disintermediation of the Nigerian financial system will be favourable to banking sector profitability and stability.

Estimation results reveal that ownership concentration is a significant determinant of bank profitability in Nigeria; and the relationship is positive. This finding is consistent with that of Mitton (2002) and indicates that owners having large stakes in banks characterized by high levels of ownership concentration are more efficient in monitoring the management and performance of their respective banks. As Claessens *et al.* (1997: 2) succinctly put it, the owners “mind the store”. The result is that management is appropriately disciplined for bad performance and rewarded for good performance. This pays off through an increase in profitability.

The result that size does not significantly determine bank profitability in Nigeria indicates that large banks in the industry have not significantly enjoyed economies of scale. In fact, the negative coefficients bring to limelight the possibility that diseconomies exist, which adversely affect their profitability. If this result is anything to go by, then the recently concluded banks consolidation exercise is unlikely to, on its own, stabilize the Nigerian banking industry.

Finally, estimation results of the relationship between bank risk and profitability are inconclusive. Two estimates of bank risk were employed. PBDL to TL in  $CCP_{it}$  served as an estimate of credit risk; while  $R_{it}$  was an estimate of aggregate risk. Based on the results, it is difficult to draw a reliable conclusion on their relationships with bank profitability. Credit risk is significant only when BTP to TA is employed as the regressand in the model, otherwise it is insignificant. Aggregate risk is significant only when ROA is employed as the regressand in the model, otherwise it is insignificant. Since the results in both cases are not robust, I consider it most appropriate to set them aside for now, and recommend that future empirical studies be conducted to clearly model the risk-return relationship for banks in Nigeria.

## ***V. – Conclusion***

In this paper, I have specified an empirical framework to investigate company-level determinants of bank profitability in Nigeria. Based on the results of the empirical analysis, capital size, size of credit portfolio, and ownership concentration significantly determine bank profitability in Nigeria. Therefore, in order to maximize profits, managements of banks in Nigeria should focus on maintaining sizeable amounts of reserves, improving the quality of their credit portfolios and beefing

up the concentration of their ownership. In the same vein, to forestall distress and enhance the stability of all the banks currently operating in the Nigerian banking industry, the CBN should tailor its policies and regulations toward ensuring that they are all headed in this direction.

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**Table 1- Banks and their Data Descriptions**

<b>S/N</b>	<b>Bank</b>	<b>Data Period</b>	<b>Observations</b>
1	Access Bank Nigeria Plc	2003-2004	2
2	Afribank Nigeria Plc	2000-2004	5
3	Bond Bank Limited	2004	1
4	City Express Bank Ltd	2002-2003	2
5	Co-operative Development Bank Plc	2002-2003	2
6	Co-operative Bank Plc	2000-2004	4
7	Ecobank Nig Plc	2003-2004	2
8	Equity Bank of Nig. Ltd	2000-2003	4
9	First Atlantic Bank Plc	2002-2004	3
10	First Bank of Nigeria Plc	2000-2004	5
11	Fortune International Bank Plc	2002-2003	2
12	Gatewaybank Plc	2000-2003	4
13	Hallmark Bank Plc	2000-2004	3
14	IMB International Bank Plc	2000-2001	2
15	Intercontinental Bank Plc	2002-2003	2
16	Liberty Bank Plc	2002-2003	2
17	Magnum Trust Bank	2000	1
18	MannyBank Nigeria Plc	2000	1
19	Metropolitan Bank Ltd	2002-2003	2
20	NAL Bank Plc	2000-2004	5
21	Nationalbank	2003-2004	2
22	NUB International Bank Ltd	2003-2004	2

23	Oceanic Bank Inter'l Nig. Ltd	2003-2004	2
24	Omegabank Plc	2001-2004	3
25	Pacific Bank Ltd	2000-2001	2
26	Prudent Bank Plc	2002-2004	3
27	Standard Chartered Bank Nigeria Ltd	2000	1
28	Trade Bank Plc	2001-2004	4
29	Union Bank of Nigeria Plc	2001-2004	4
30	Union Merchant Bank Ltd	2001-2004	4
31	United Bank for Africa Plc	2000-2004	5
32	Wema Bank Plc	2000-2004	4
33	Zenith International Bank Ltd	2000	1

**Table 2- Variables Exposition**

VARIABLE		DEFINITION(S)	SOURCE	EXP. R.
Regressand	$P_{it}$	Ratio of before tax profits to total assets (BTP/TA) (1)	Athanasoglou <i>et al.</i> (2005)	Nil
		Ratio of after tax profits to total assets (ROA) (2)		Nil
		Following Athanasoglou <i>et al.</i> (2005: 13), for the calculation of each regressand, I use the average value of assets of two consecutive years and not the end-year values, since profits are a flow variable generated during the year.		
Determinants	$CAP_{i,t-1}$	Ratio of share capital to total assets (1)	”	+
		Ratio of reserves to total assets (2)		
		The variable is lagged because it is the capital at time $t-1$ that is used to generate the profits at time $t$ .		
	$DL_{it}$	Ratio of total deposit liabilities to total assets	Naceur and Goaid (2001)	+
	$CP_{it}$	Ratio of total loans and advances to total assets		+
	$CCP_{it}$	Ratio of performing loans to total loans (1)		+
		Ratio of non-performing loans to total loans (2)		-
		Ratio of provisions for bad and doubtful loans to total loans (3). This ratio also denotes the credit risk of the bank (Athanasoglou <i>et al.</i> , 2005: 14).		-
	$LP_{it}$	Gross earnings per employee	Athanasoglou <i>et al.</i> (2005)	+
	$IT_{it}$	Dummy variable 1 for banks that became online real time on or before December 31, 2004; and dummy variable 0 for banks that were not online real time by this date.		+
$R_{it}$	Ratio of total liabilities to total assets	Bashir (2000)	-	

$S_{it}$	Dummy variable 1 for large banks; and dummy variable 0 for small banks. To classify a bank as small or large, I compute the average total assets of all the banks in our data set throughout the entire study period. Banks whose average fall below the overall are classified as small; while banks whose average fall above the overall are classified as large. This classification method ensures that each bank stays in the same size class throughout the entire period.	Athanasoglou <i>et al.</i> (2005: 7)	+
$O_{it}$	Dummy variable 1 for foreign banks; and dummy variable 0 is used for domestic banks. A bank is classified as foreign if its total paid-up share capital is at least forty percent (40%) owned by non-Nigerian individuals and/or non-Nigerian institutions; otherwise it is a domestic bank. (1)	Athanasoglou <i>et al.</i> (2005)	+
	Dummy variable 1 for private banks; and dummy variable 0 for state banks. A bank is classified as private if its total paid-up share capital is more than sixty four percent (64%) owned by individuals and / or non-governmental organizations; otherwise it is a state bank. (2)	Athanasoglou <i>et al.</i> (2005)	+
$OC_{it}$	Top five investors' shares as a percentage of total shares outstanding	Claessens <i>et al.</i> (1997)	+
$COD_{it}$	Ratio of Managing Director's shares to total bank shares outstanding (1) Ratio of Directors' shares to total bank shares outstanding (2)		
$SA_{it}$	Dummy variable 1 for banks that have structural affiliations; and dummy variable 0 for banks that do not have structural affiliations.		+ or -

Exp. R. = Expected Result; + = Positive; and - = Negative

**Table 3- Estimation Results**

VARIABLES	BTP/TA AS REGRESSAND	ROA AS REGRESSAND
<i>CAP<sub>i,t-1</sub></i> (SC to TA)	-.108 (.292)	-.126 (.206)
<b>(R to TA)</b>	.302 (.126) *	.317 (.099) **
<i>DL<sub>it</sub></i>	.007 (.937)	.027 (.736)
<i>CP<sub>it</sub></i>	-.128 (.100) **	-.134 (.076) **
<i>CCP<sub>it</sub></i> (PL to TL)	-.312 (.543)	-.331 (.507)
<b>(NPL to TL)</b>	-.467 (.362)	-.470 (.344)
<b>(PBDL to TL)</b>	-.091 (.109) *	-.072 (.192)
<i>LP<sub>it</sub></i>	-.029 (.673)	-.026 (.705)
<i>IT<sub>it</sub></i>	.001 (.982)	.002 (.974)
<i>R<sub>it</sub></i>	-.475 (.017)	-.502 (0.010) **
<i>S<sub>it</sub></i>	-.049 (.523)	-.074 (.320)
<i>O<sub>it</sub></i> (FB/DB)	-.058 (.334)	-.053 (.368)
<b>(PB/SB)</b>	.005 (.925)	-.004 (.947)
<i>OC<sub>it</sub></i>	.122 (.050) ***	.111 (.066) **
<i>COD<sub>it</sub></i> (TFIS to TBS)	-.057 (.395)	-.064 (.322)
<b>(DS to TBS)</b>	.060 (.396)	.076 (.271)
<i>SA<sub>it</sub></i>	-.080 (.317)	-.049 (.522)
<b>R<sup>2</sup> / Adj R<sup>2</sup></b>	.815 / .771	.825 / .784
<b>Durbin-Watson</b>	1.792	1.766
<b>ANOVA (F) / (Sig.)</b>	18.866 / .000	20.203 / .000

\*, \*\* and \*\*\* indicate significance levels of 15, 10 and 5 percent respectively.