CAPITAL ADEQUACY AND BANKS' PROFITABILITY: AN EMPIRICAL EVIDENCE FROM NIGERIA

Asikhia Olalekan
Associate Professor of Strategic Management and Marketing,
Department of Business Administration and Marketing
Babcock Business School
Babcock University
Illisan- Remo, Ogun State, Nigeria

Sokefun Adeyinka
Lecturer
Department of Financial Studies,
College of Management Sciences,
Redeemer's University
Mowe, Ogun State, Nigeria.

Abstract

This paper sets out to examine the effect of capital adequacy on profitability of deposit- taking banks in Nigeria. It seeks to assess the effect of capital adequacy of both foreign and domestic banks in Nigeria and their profitability. The paper present primary data collected by questionnaires involving a sample of 518 distributed to staff of banks with a response rate of 76%. Also published financial statement of banks were used from 2006 - 2010. The findings for the primary data analysis revealed a non-significant relationship but the secondary data analysis showed a positive and significant relationship between capital adequacy and profitability of bank. This implies that for deposit- taking banks in Nigeria, capital adequacy plays a key role in the determination of profitability. It was discovered that capitalization and profitability are indicators of bank risk management efficiency and cushion against losses not covered by current earnings.

Keywords: Capital adequacy, Profitability, Domestic banks, Foreign banks, Deposit – taking bank.

1.0 Introduction

One of the biggest achievement in the Financial Sector in the Nigerian economy has been the upward review of the of the capital base of banks. This has resulted in bigger, stronger and more resilient financial institutions. Capital Adequacy can be percentage ratio of a financial institution's primary capital to its assets (loans and investments), used as a measure of its financial strength and stability. According to Nwokoji (2013) the average Capital Adequacy Ratio (CAR) of the banks in the industry was consistently above the stipulated minimum of 10.0 per cent in the first half of 2012. The industry average CAR stood at 17.7 per cent, compared with 17.9 and 5.0 per cent at end-December 2011 and the corresponding period of 2011, respectively. With the exception of one bank, all the banks met the regulatory minimum CAR of 10.0 per cent with the highest and lowest at 34.1 and a negative 7.8 per cent, respectively.

Generally, banks are expected to absorb the losses from the normal earnings. But there may be some unanticipated losses which cannot be absorbed by normal earnings. Capital comes in handy on such abnormal loss situations to cushion off the losses. In this way, capital plays an insurance function. Adequate capital in banking is a confidence booster. It provides the customer, the public and the regulatory authority with confidence in the continued financial viability of the bank. Confidence to the depositor that his money is safe; to the public that the bank will be, or is, in a position to give genuine consideration to their credit and other banking needs in good as in bad times and to the regulatory authority that the bank is, or will remain, in continuous existence.

Banks play a pivotal role in the shaping up of the economy of a country, given the relationship between the well being of the banking sector and the growth of the economy (Rajan and Zingales 1998; Cetorelli and Gambera 2001; Beck and Levine 2004). The knowledge that capital adequacy influences the financial sector's profitability is essential not only for the managers of banks, but for numerous stakeholders such as the central banks, bankers associations, governments, and other financial authorities.

However, studies like (Kosmidou, 2008; Gul, Irshad and Zaman (2011) assert that there capital adequacy of banks determines profitability.

Without profits, no firm can survive and attract outside capital to meet its investment target in a competitive environment. Thus, profitability plays a key role in persuading depositors to supply funds in terms of bank deposits on advantageous terms. But in Nigeria, low capitalization of banks made them less able to finance the economy and more prone to unethical and unprofessional practices. Soludo (2005) observes that many banks appear to have abandoned essential intermediation role of mobilizing savings and inculcating banking habit at the household and micro enterprise levels. Due to capital inadequacy of many banks in the country, they were faced with high cost of financial distress and this certainly affected profitability. Asedionlen (2004) opines that recapitalization may raise liquidity in short term but will not guarantee a conducive macroeconomic environment required to ensure high asset quality and good profitability.

From the foregoing therefore, this study examines to assess the effects of capital adequacy on the profitability of both domestic and foreign banks on Nigeria.

2.0 Literature Review and Hypotheses Development

Bank capital is those fund attributed to the proprietors as published in the balance sheet (Nwankwo, 1991). These funds perform a number of functions but a consensus exists that the fundamental and overriding function is to provide a cushion against losses not covered by current earnings and to protect depositors and other creditors against loss in the event of liquidation.

Opinion differs among experts in banking and finance as to what constitutes adequate capital but they all agree that it is an age long issue for which there do not seem to be any consensus in sight. Thus as noted by Nwankwo (1991), the issue of what constitutes an adequate capital for banks has a long history. It is in fact, almost as old as banking itself. According to Nwankwo (1991) he states that adequate capital is that quantum of funds which a bank should have or plan to maintain in order to conduct its business in a prudent manner.

Functionally, adequate capital was regarded as the amount of capital that can effectively discharge the primary capital function of preventing bank failure by absorbing losses. As these losses were related to the risks which banks undertake as a natural corollary of their efforts to serve the legitimate credit needs of the community. Adequate capital will provide the ultimate protection against insolvency and liquidation arising from the risk in banking business. Any company or bank with inadequate capital faces hidden constraints. Its management time is spent on the defensive, working out how to raise capital or how to guard against takeovers.

Developments in the national and international environment affect capital adequacy. The current situation of banks will undoubtedly be influenced by the prevailing and expected economic conditions of the entire economy and the specific area served by the bank. It will also be influenced by the quantity, quality and liquidity of the bank assets and liabilities and by the quality of bank management. A bank operating in a prosperous economy, with excellent quality assets and adequate liquidity in relation to deposit volatility and economic conditions and having a sound management is likely to require a small amount of capital to adequately maintain solvency. An unfavorable change in any of these factors would increase the possibility of insolvency and would necessitate additional capital.

Since capital is a cushion against which to charge off losses, the riskier the asset composition, the more capital is required to maintain a given level of soundness. Similarly, the concentrated and volatile the liabilities, the greater the risk, the greater the amount of capital adequacy required to maintain solvency. The risk in high volatility is derived from the fact that massive withdrawals may force asset liquidation at an inopportune time; and liability maturity mismatch may force refinancing or liquidation at a loss.

Profitability is the ability to make profit from all the business activities of an organization, company, firm, or an enterprise. It shows how efficiently the management can make profit by using all the resources available in the market. According to Harward and Upton (1991) profitability is the ability of a given investment to earn a return from its use. However, the term 'Profitability' is not synonymous to the term 'Efficiency'. Profitability is an index of efficiency; and is regarded as a measure of efficiency and management guide to greater efficiency. Though, profitability is an important yardstick for measuring the efficiency, the extent of profitability cannot be taken as a final proof of efficiency.

Sometimes, the terms 'Profit' and 'Profitability' are used interchangeably. But in real sense, there is a difference between the two. Profit is an absolute term, whereas, the profitability is a relative concept. However, they are closely related and mutually interdependent, having distinct roles in business. Profit refers to the total income earned by the enterprise during the specified period of time, while profitability refers to the operating efficiency of the enterprise. It is the ability of the enterprise to make profit on sales. It is the ability of enterprise to get sufficient return on the capital and employees used in the business operation.

In the literature, bank profitability is typically measured by return on assets (ROA), return on equity (ROE), and/or net interest margins (NIM). For any bank, ROA depends on the bank's policy decisions as well as uncontrollable factors relating to the economy and government regulations. Many regulators believe ROA is the best measure of bank profitability (Hassan and Bashir, 2003). Rivard and Thomas (1997) suggest that bank profitability is best measured by ROA in that ROA is not distorted by high equity multipliers and ROA represents a better measure of the ability of the firm to generate returns on its portfolio of assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. Calculated by dividing a company's annual earnings by its total assets, ROA is displayed as a percentage. Sometimes this is referred to as "return on assets".

Earlier studies on capital adequacy as a determinant of profitability of banks revealed that a high capital adequacy ratio should signify a bank that is operating over-cautiously and ignoring potentially profitable trading opportunities (Goddard, Molyneux, and Wilson 2004), which implies a negative relationship between equity to asset ratio and bank performance. At the same time, banks with higher equity to asset ratio will normally have lower needs of external funding and therefore higher profitability (Pasiouras and Kosmidou, 2007).

Yu Min-The (2006), defined the adequate capital for banks as the level at which the deposit insuring agency would breakeven in guaranteeing the deposits of individual banks with premium the banks pay. An option of theoretical framework was employed in his study for measuring fair capital adequacy holdings for a sample of depository institutions in Taiwan, during 1985-1992. Except for the 1989, most banks in their sample proved to be inadequately capitalized so that capital infusion is required.

George and Dimitrios (2004) applied non-parametric analytic technique (data envelopment analysis, DEA) in measuring the performances of the Greek banking sector with respect to capital adequacy. He proved that data envelopment analysis can be used as either an alternative or complement to ratio analysis for the evaluation of an organization's performance with attention to macroeconomics indicators.

Various studies suggest that banks with higher levels of capital perform better than their undercapitalized peers. Staikouras and Wood (2003) claimed that there exists a positive link between a greater equity and profitability among EU banks. Abreu and Mendes (2001) also trace a positive impact of equity level on profitability. Goddard et al. (2004) supports the prior finding of positive relationship between capital/asset ratio and bank's earnings. Again the direction of the relationship between bank capital and bank profitability cannot be unanimously predicted in advance. This leads to the first hypothesis:

Hypothesis 1: There is no significant relationship between banks capital adequacy and their profitability in domestic banks in Nigeria.

In addition, Pasiouras and Kosmidou (2007) identify that the performance of domestic and foreign commercial banks in 15 EU countries during the period 1995-2001. They find that profitability of both domestic and foreign banks is affected by bank specific characteristics. The results suggest that capital adequacy, credit risk, bank size, liquidity risk have significant relationship with bank profitability, although their impacts and relation is not always uniform for domestic and foreign banks. This leads to the second hypothesis:

Hypothesis 2: There is no significant relationship between banks capital adequacy and their profitability in foreign banks in Nigeria.

3.0 Methodology

This study used the survey design in line with cross - sectional research design. From a total of 518 copies of the questionnaire distributed, 393 were returned, out of which 125 were either not filled at all or not properly filled thus, producing a response rate of 76%. A response rate considered sufficiently large for statistical reliability and generalizability (Abbas, Hamid and Joher 2003).

The instrument consisted of two parts. Sector A is designed to identify the respondents' information on demographic variables. Sector B consists of items designed to find out about the effect of capital adequacy on the profitability of deposit- taking banks in Nigeria. A five point Likert-scale was used in all questions, in order to accurately measure the change between two time points from very low to very high. The ratings scale is such that for questions in which responses indicated very low we scored 1 and the very high scored 5. The instrument was validated in its face and content. To measure the content validity of the instrument, pilot study was carried out. An analysis of the respondents' demographic characteristics is presented in table I.

Table 1 Distribution of Respondents

		VALID PERCENT (%)
GENDER	Male	66
	Female	34
AGE	20 – 29	31
	30 – 39	56
	40 and above	13
MARITAL STATUS	Single	38.9
	Married	58.8
	Divorced	1.8
	widow	0.5
EDUCATIONAL QUALIFICATION	B.Sc/HND	42
	MSC/MBA	32
	Professional	24
	Others	2
DESIGNATION	Officer	38
	Middle manager	39
	Senior manager	19
	Top executive	4
LENGTH OF SERVICE	1 – 5	38
	6 – 10	44
	11 – 15	15
	16 above	3

Source: Computed from field work

Also, for the purpose of this study, secondary data was collected from published financial statements of all the banks under study. Based on this, published financial statements of the banks under study for the period 2006-2010 were used. The published accounts have been scrutinized by audit firm and other relevant bodies and as such it gives an objective assessment of the performance of banks.

Linear regression was used to analysis the primary data to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable. For the secondary data panel data was used for the analysis.

3 Results

Hypothesis 1: There is no significant relationship between banks capital adequacy and their profitability in domestic banks in Nigeria.

Table 2 Testing Capital Adequacy for Domestic Banks in Nigeria

Construct Association	α Level	Beta	p-value	Significant Yes/no	Hypothesis
Capital adequacy and profitability of domestic banks in Nigeria.	0.05	0.058	0.189	No	Do not Reject

Source: Computed from field work

From Table 2, the p-value is 0.189. The result implies that we reject alternative hypothesis at α = 0.05 level of significance and accept the null hypothesis. Therefore, it can be concluded that there is no a significant relationship between banks capital adequacy and their profitability of domestic banks in Nigeria

Hypothesis 2: There is no significant relationship between banks capital adequacy and their profitability foreign banks in Nigeria.

Table 3 Capital Adequacy for Foreign Banks in Nigeria

Construct Association	α Level	Beta	p-value	Significant Yes/no	Hypothesis
Capital adequacy and profitability in foreign banks in Nigeria.	0.05	0.043	.368	No	Do not Reject

Source: Computed from field work

Table 3 shows the p-value of 0.368. The result implies that we reject alternative hypothesis at α = 0.05 level of significance and accept the null hypothesis. Hence, we shall accept the null hypothesis which states that there is no significant relationship between banks capital adequacy and their profitability of foreign banks in Nigeria

Table 4 shows the result of the secondary data analysis testing the hypotheses that there is no significant relationship between banks capital adequacy and their profitability in domestic banks in Nigeria

Table 4 Testing Capital Adequacy for Domestic Banks in Nigeria using Secondary Data

VARIABLE	POOLED		FIXED EFFECTS		RANDOM EFFECTS	
	Coefficient	t-statistic	Coefficient		Coefficient	t-statistic
Constant	10.16860 (0.0000)	4.42E+13***	10.16860 (0.0000)	Constant	10.16860 (0.0000)	4.42E+13***
CPA	0.541069 (0.0000)	7.12E+13***	0.541069 (0.0000)	CPA	0.541069 (0.0000)	7.12E+13***
Adj. R-Squared	0.420711		0.440721		0.420711	
Durbin-Watson stat	2.479860		2.488846		2.479860	

Source: Computed from field work

Table 4 reveals a p- value 0.000 at α = 0.05 level of significance. . Hence, we shall not reject the alternative hypothesis which states that there is significant relationship between banks capital adequacy and their profitability of domestic banks in Nigeria.

4.0 Discussion

Empirically, the result indicated a positive impact of capital adequacy on bank profitability, and this goes in line with the theoretical expectation and in line with the findings of other authors. A positive relation between capital adequacy and profitability was suggested by (Kosmidou, 2008; Demirguc-Kunt and Huizinga, 1999; Ben Naceur, (2003); Kosmidou and Pasiouras, (2005); Valverde and Fernandez, (2007); Brock and Suarez, (2000); Demirguç-Kunt, Laeven and Levine, (2004) and Saunders and Schumacher (2000). But the result further show that there is no significant relationship between bank profitability and capital adequacy which is contrary to many empirical findings (Berger, 1995; Demirguc-Kunt and Huizinga, 1999; Ben Nacuer, 2003; Kosmidou, 2008; Pasiouras et al., 2006; Gul, et al. (2011) that show significant relationship between bank profitability and capital adequacy.

This may be as a result of the last bank recapitalization to N25 billion and some of these banks still declared huge losses in 2009 according to their published financial statement. Also, some of the capital that was raised on the stock exchange by some of these banks was fictitious (Sanusi, 2010).

Surprisingly, capital adequacy does not have a significant impact on banking profitability of foreign banks in Nigeria. This is in contract with studies like Berger, 1995; Demirguc-Kunt and Huizinga, 1999; Ben Nacuer, 2003; Kosmidou, 2008; Pasiouras et al., 2006; Gul, Irshad and Zaman (2011) that shows significant relationship between bank profitability and capital adequacy. In furtherance to this, Pasiouras and Kosmidou (2007) identify that the performance of domestic and foreign commercial banks in 15 EU countries during the period 1995-2001. They find that profitability of both domestic and foreign banks is affected by bank specific characteristics.

The results suggest that all variables have significant relationship with bank profitability, although their impacts and relation is not always uniform for domestic and foreign banks. But, the findings under the primary data analysis show that there is no significant relationship between capital adequacy and profitability in both the domestic and foreign banks in the Nigerian banking sector.

Mpuga (2002) argues that the inadequacy of minimum capital standards in accounting for risks in banks assets portfolio could be one of the major factors leading to bank failures. He studied the 1998-99 banking crisis in Uganda and how the new banking guidelines in Uganda was to increase bank solvency and capital adequacy by shifting their portfolio towards lower risk assets, in an effort to meet the new requirements. This is also applicable in the Nigerian banking sector where banks have failed due to inadequate minimum paid-up capital. Recently the Central bank of Nigerian had to critical look into the challenge of inadequacy of minimum capital requirement. The new minimum capital requirements for banks are as follows: N10 billion for Regional Bank; N25 billion for a National Bank; N50 billion for an International Bank.

In June 2004, a new accord of capital management was proposed by the Basel committee on bank supervision and its focus was to establish an international standard that banking regulators can use when creating regulations about how much capital banks need to reserve in order to cover for credit and operational risks (BIS, 2004). The overall aim of Basel II is adequate capitalization of banks and best practice risk management to reinforce the banking system's stability through "three pillars": minimum capital requirements, supervisory review and market discipline (Crouhy, Galai and Mark 2006). Many countries, especially the European ones, have adhered to their operations with Basel II. However, most developing nations, including Nigeria, are still on the way to adopt it. In those cases, central banks have a significant role in issuing nationwide control policies, guiding banks to implement them and following up bank' performance.

5.0 Limitation of the Study

Even though the sample included all deposit- taking banks actively operating in Nigeria, the secondary data analysis for foreign banks was limited. Three of the four foreign banks in Nigeria which are Citi Bank, Standard Chartered Bank and Stanbic IBTC Bank were not quoted on the Nigerian Stock Exchange which made it impossible to have access to the published financial statements for the years under study. The use of a single country data further diminishes the generalizability and extinguishes the opportunity of making comparison with other parts of the world.

6.0 Conclusion and Recommendation

This study has examined how capital adequacy affects the profitability of deposit – taking banks both domestic and foreign banks in the Nigerian banking sector. It revealed that capital adequacy relates positively to profitability of banks in Nigeria. For the primary data analysis it showed a non – significant relationship but the secondary data analysis showed a significant relationship.

The most important thing revealed by this study is that capital adequacy is an important factor when it comes to the determination of profit ability of deposit – taking banks in Nigeria. Adequate capital as functioned in various ways such as providing cushion against losses not covered by current earnings. It has also been a confidence booster to the depositors, public and the regulatory authority in Nigeria.

This paper recommends that the regulatory authority should ensure that the gains of the banking reforms processes are sustained, the CBN should take more decisive measures aimed at tightening the risk management framework of the Nigerian banking sector as this will have a positive effect on the their profitability,

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