“The impact of M&A on the Nigerian financial market: a pre-post analysis”

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The impact of M&A on the Nigerian financial market: a pre-post analysis

Abstract

This paper examines the impact of mergers and acquisitions (M&A) on the financial performance of the Nigerian market after consolidation. The authors use data from all Nigerian banks that survived the consolidation between 2001 and 2009. Logistic regression models are structured to determine the influence of M&A activities on the financial performance of the Nigerian market. Also, the authors critically evaluate the findings by shedding the light on the lessons other developing nations can learn from the Nigerian market. The results show that M&A have a positive influence on the financial performance of the Nigerian market. Still, M&A are not enough to achieve the wider objectives of banking sector reform. Towards this end, corporate governance reform must take place *vis-à-vis* consolidation exercises especially when these M&A are regulatory based rather than market based. The investigation uses a novel approach by comparing pre- and post- M&A results performance of merged banks as well as comparing these results with non-merged banks. Finally, the paper puts the results in context of wider reforms and considers the effectiveness of the M&A as a tool for banking sector reform in developing countries. The investigation offers insights into the policy of banking consolidation which can be useful for policy makers in Nigeria and other similar economies.

Keywords: Nigeria, mergers and acquisitions (M&A), financial market, banking, financial performance.
JEL Classification: G34, G21, N27.

Introduction

Banking sectors play a crucial role in economic development by mobilizing savings into investment activities (Abdullahi, 2002; Mordi, 2004) and in the creation of wealth by facilitating capital formation, enhancing economic growth and development, reducing information costs and offering risk management services (Dogarawa, 2011). However, their ability to undertake these functions is influenced by the soundness and stability of the system within which they operate. The need for a strong, reliable and viable banking system, capable of meeting the expectations of its stakeholders cannot be overstated. Banking system reforms may be initiated by government in developing, as well as developed countries, to remedy any deficiencies undermining the banking system (Dogarawa, 2011; Ebimobowei and Sophia, 2011).

The history of the Nigerian banking system is one of regular periods of change and adjustment as the sector evolves in response to changes in the domestic and global economies. The foundation of the Nigerian banking industry in the late nineteenth century is described by Ezeoha (2007) as a system without any legal or regulatory framework. Initial banking operations were set up to meet the needs of the expatriate community with the establishment of the African Banking Corporation based in South Africa and, subsequently, absorbed into the British Bank for West Africa, now First Bank of Nigeria Plc (Danjuma, 1993). Industrial and Commercial Bank was the first indigenous bank in Nigeria, established in 1929, a time when banking was effectively unregulated and entry unrestricted (Brownbridge, 2005). This bank, and a number of subsequent banks failed, as a result of a number of factors including the lack of a firm regulatory framework, inadequate levels of capitalization and poor quality management (Agbaje, 2008; Nwankwo, 1980). Despite the introduction of banking legislation, these problems continued into the 21st century.

In recent decades, Nigerian banking has shown significant weaknesses which have resulted in a loss of confidence in the system. Soludo (2004) suggests that the Central Bank of Nigeria (CBN) has identified the need for adequate capitalization of the banks as key to build a strong, competent and globally competitive banking sector. Between 1952 and 2005, there were 9 different recapitalization requirements imposed by the CBN. The most recent, in 2005, increased the minimum capital base for all banks from 2 billion Nigerian Naira to 25 billion Nigerian Naira (Somoye, 2008). The CBN considers that mergers and acquisitions (M&A) enhance bank soundness and efficiency, and give greater scope for development of the economy.

The purpose of this paper is twofold, firstly, to identify whether there is any difference in the

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financial performance of *all* Nigerian banks pre-post the consolidation in 2005 and, secondly, to investigate whether the financial performance of *all* the merged banks improved after the consolidation. Compared with previous investigation in this area, particularly in the Nigerian market, our fresh contribution is twofold: firstly, our investigation covers the whole financial market in Nigeria and, secondly, we use logistic regression to distinguish the performance of the financial market pre-post-M&A. The rest of this paper is organized as follows: Section 1 reviews the related studies; Section 2 addresses data sources and methodology; Section 3 reports our results; and Final section comprises conclusion and recommendations.

1. Review of relevant literature

In the last couple of decades, a lack of confidence in and under-capitalization of the Nigerian banking system has resulted in instability of the economy and, subsequently, in runs on the banks. Issues such as weak corporate governance, opaqueness, gross insider abuses, insolvency, weak capital base and over-dependency on the public sector deposits are identified in the Nigerian banking sector (Soludo, 2004; Sanni, 2010). Agu et al. (2011, p. 23) add that the Nigerian Banking system in mid-2004 suffered from a number of challenges including "periodic distress, weak credit regulation, poor management, macroeconomic and political instability, maturity mismatches, insider abuses, fraud and conflict of interest, general insecurity and corruption". To tackle the situation and allow the banks to play their role as a catalyst for economic development, banking system reforms were introduced by the CBN on the 6th of July, 2004.

According to CBN, consolidation can strengthen the role of the banks within the Nigerian economy and generate improved returns for shareholders. The rationale for the consolidation strategy is to allow the Nigerian banking system to reap the benefits seen around the world from M&A activities such as "cost-savings due to economies of scale as well as more efficient allocation of resources, enhanced efficiency in resource allocation, and risk reduction arising from improved management" (Soludo, 2004, p. 3). Indeed, this reform plan is based on a widely argued belief that M&A can bring about those benefits (Adebayo and Olalekan, 2012; Adeyemi, 2006; Somoye, 2008; DeYoung et al., 2008; Ebimobowei and Sophia, 2011).

Whilst acknowledging that there are many other factors which impact on the success of the banking sector, Joshua (2010) argues that issues, such as the maintenance of price and exchange rate stability, protection of investors, and provision of development capital could not be resolved without adequate capitalization of the sector. Banks have employed a variety of financial strategies to comply with CBN's minimum capital directives including: the injection of fresh capital through initial public offers, private placings and right issues; the capitalization of reserves; mergers and or a combination of two or more of the above strategies (Otanngaran, 2004). The impact of the reforms was a rationalization of the Nigerian banking sector, and a reduction in the number of banks from 89 to 24. The aim was to create a globally competitive banking system, by allowing the remaining banks to benefit from accelerated growth, enhanced profitability, economies of scale improved risk management and greater market power (Andrade et al., 2001; Goddard, 2007; DeYoung et al., 2009; Ebimobowei and Sophia, 2011).

The nature of the market could be a reason behind the M&A activities in the Nigerian banking system as these were not motivated entirely by market dynamics, but were initiated and incentivized by the CBN as a tool for reform (Soludo, 2004; Alao, 2010; Ebimobowei and Sophia, 2011; Agu et al., 2011). The CBN offered technical assistance, securities and exchange commission fee waivers and, finally, "allowed for transition time for operations merger and regularization of employee for merged banks beyond the consolidation deadline" (Agu et al., 2011, p. 23). This would seem to make the Nigerian bank consolidation different from the conventional market based consolidations cited above in the industrialized countries.

The literature relating to the benefits arising from M&A is complex and at times contradictory. Rhoades (1998) reports efficiency and profitability improvements in most cases studied (9 selected merger cases) with no significant issues impeding the achievement of their objectives. Similarly, Altunbas and Ibanez (2008) investigate banks in the European Union and find improved performance following mergers. Studies by Amel et al. (2004) and DeYoung et al. (2009) review the outcome of M&A activity in a number of mature industrial economies (Europe, Japan, Australia, and Canada) and indicate that there is "general consensus that consolidation in the financial sector is beneficial up to a certain size in order to reap economies of scale; this holds, in particular, for commercial banks" (Amel et al., p. 2513). Whilst efficiencies can be identified there is no account taken of the social costs which can have a negative effect on clients, particularly, small businesses (Berger et al., 1998; Amel et al., 2004; DeYoung et al., 2009). However, Beccalli and Frantz (2009), in a study of 714 deals involving EU acquirers and targets located

throughout the world during the period 1991-2005, found that M&A activity is associated with slight deterioration in financial performance of banks post-mergers if the transaction was a cross-border deal. They concluded that institutional and regulatory factors have an impact on post-merger financial performance.

Fewer researchers have examined the relationship between M&A and financial performance in this area. Adbayo and Olalekan (2012) use correlation co-efficient and *t*-test and conclude that there was a significant relationship between pre and post mergers capital base and profitability, and a significant difference between pre and post-mergers earning per share. Adegbaju and Olokoyo (2008) test the relationship between recapitalization and bank performance using mean, standard deviation, test of equality of means and *t*-test and found that yield on earning asset, return on equity and return on assets show significant difference before and after the previous recapitalization in 2001. Joshua (2011) in a relatively limited study of 3 banks over the period 2002-2008 finds mixed results. Whilst the study concludes that there were no statistically significant overall improvements in financial efficiency post consolidation, it does identify improved performance in gross earnings, profit after tax and net assets. Sanni (2010) also identifies variations in profitability between banks post consolidation. However, Somoye (2008) examining Nigerian banks' performance post 2004 consolidation concludes that consolidation exercise has not improved the overall performance of banks significantly. This study questions whether the system would benefit from further consolidation exercises, and believes that improvements would only follow if other aspects were also improved, in particular, a reform of corporate governance and action to strengthen balance sheets.

In conclusion, although the consolidation program of Nigerian banks was initiated to enhance efficiency, none of the previous research addresses this issue using statistical techniques such as logistic regression to distinguish the performance of Nigerian banks pre-post 2005 consolidation. To the best of our knowledge, financial performance differences pre- and post- M&A in the Nigerian market has not been addressed in this way by any other researchers.

2. Research methodology

Our overall research question is as follows: whether there is any significant difference between the financial performance of merged and non-merged Nigerian banks between 2001 and 2009? In other words, what is the effect of the M&A on the Nigerian market financial performance? Our investigation can shed the light on whether further consolidation can help increase the soundness of the Nigerian financial market. This is the ultimate objective of CBN and it remains untested to date.

2.1. Data collection and sample selection. Our data are extracted from various sources including Bankscope database, Data works, Central Bank of Nigeria statistical bulletins and the banks' annual reports for 9 years from 2001 to 2009 inclusive using 2005 as the base year, as shown in Table 1. This is owing to the fact that the M&A of Nigerian banks were accomplished in October 2005. The final sample included 15 banks out of the 24 banks as 9 banks are excluded either due to their new structure, i.e., new affiliations/entity (names), or, in some other cases, due to insufficient data. Thus, the total number of year observations is 120, and covering 8 years from 2001 to 2009, excluding the year 2005, in which all the M&A process has been conducted. Descriptive statistics for different banks based on their size, namely, natural log of total assets are calculated as shown in Table 1.

Table 1. Descriptive statistics for the 15 banks based on size (ln total assets) and the final number of observations

Bank	Pre-M&A (2001-2004)		Post-M&A (2006-2009)		Overall (Pre + Post) (2001-2009)	
	Mean	St. dev	Mean	St. dev	Mean	St. dev
Access	2.768	0.623	6.116	0.795	4.442	1.908
Afribank	4.458	0.094	5.341	0.478	4.837	0.551
Diamond	4.207	0.119	6.041	0.530	5.429	1.033
ETB	3.526	0.259	4.785	0.122	3.945	0.682
First Bank	5.762	0.277	7.044	0.527	6.403	0.789
FCMB	2.864	0.263	5.658	0.723	4.461	1.586
Intercontinental	4.506	0.595	6.569	0.664	5.391	1.241
UBA	5.303	0.050	7.097	0.319	6.071	0.977
Union Bank	5.780	0.246	6.802	0.319	6.291	0.607
Wema	3.958	0.283	4.947	0.225	4.287	0.565
Stanbic IBTC	3.086	0.341	5.448	0.625	4.098	1.335
Ecobank*	3.320	0.215	5.565	0.612	4.282	1.260
GT Bank*	4.348	0.460	6.347	0.497	5.348	1.157

Table 1 (cont.). Descriptive statistics for the 15 banks based on size (ln total assets) and the final number of observations

Bank	Pre-M&A (2001-2004)		Post-M&A (2006-2009)		Overall (Pre + Post) (2001-2009)	
	Mean	St. dev	Mean	St. dev	Mean	St. dev
NIB*	4.177	0.206	4.895	0.174	4.485	0.422
SCB*	2.921	0.694	4.813	0.298	3.732	1.137
Total	4.082	1.041	5.932	0.886	4.937	1.340

Note: Our final sample consists of 15 banks in which 11 banks have had M&A and 4 have no M&A. The pre- and the post- average figures corresponded to a 4 years period each (2001-2004 and 2006-2009), respectively, and excluding the consolidation year – 2005. Fifteen out of twenty nine financial indicators, are, finally used to measure the financial performance of the Nigerian market. Shaded banks are the chosen banks for $Model_3$ as explained later on. This compares 4 non-merged banks with equivalent merged banks. * Banks with no M&A; St. dev = Standard deviation.

We have provided in Table 1 descriptive statistics for pre- M&A (2001-2004), post- M&A (2006-2009) and the overall sample (2001-2009) based on size, measured by total assets. As we expected, the mean has increased in all banks after the M&A in 2005 with an overall mean of 5.93 compared with an overall mean of 4.08 pre- M&A. The highest mean pre- and post- M&A is for UBA whilst the lowest mean pre- M&A is for Access and for ETB post- M&A. The overall average mean of the overall sample is 4.94 as shown in Table 1.

We use different financial ratios to investigate whether there are any differences in the Nigerian banks' financial performance pre- and post- the 2005 consolidation. These ratios cover four different categories, namely, asset quality, capital adequacy, profitability and liquidity. We started the analysis with 29 financial ratios and after excluding those with missing data, and those showing high correlations between different ratios, the final sample consists of 15 financial ratios, as shown in Table 2.

2.2. Logistic regression. Logistic regression (LR) which is also known as logit model is a technique where independent variables are used to determine an outcome of a dependent variable on the basis of continuous or categorical independents to determine the percent of variance in the dependent variable. The outcome is measured with a dichotomous variable which tests the significance of the individual independent variable to find the best fitting model to describe the relationship between the dichotomous characteristic of interest (dependent variable) and a set of independent predictor/explanatory variables.

What distinguishes a logistic regression model from the linear regression model is that the outcome variable in logistic regression is binary or dichotomous. On theoretical grounds, it might be supposed that logistic regression is a more appropriate statistical tool than linear regression, given that two discrete classes "1" and "0" have been defined (Hand & Henley, 1997; Abdou, 2009). LR is a widely used statistical modelling technique, in which the probability of a binary outcome (zero or one) is related to a set of potential predictor variables in the form:

$$\log[p/(1-p)] = \alpha + \delta_1 V_1 + \delta_2 V_2 + ... + \delta_n V_n,$$

where p is the probability of the dichotomous outcome of interest, α is the intercept term, and δ_i represents the respective coefficient in the linear combination of explanatory variables, V_i, for $i = 1$ to n. The dependent variable is the logarithm of the odds ratio, $\{\log[p/(1-p)]\}$, which is the logarithm of the ratio of two probabilities of the outcome of interest (see, for example, Abdou, 2009).

We use logistic regression to build three different models to analyze the overall financial performance of all the 15 Nigerian banks. The first model ($Model_1$) is devised to evaluate the overall financial performance of all the 15 banks by comparing their performances pre- and post- the financial period of 2005 in which the reform was implemented. The second model ($Model_2$) is contrived to appraise the differences between the 15 sample banks by comparing the financial performance of the 11 merged banks with the other 4 unmerged banks four years before and after the financial period of 2005. The third and the final model ($Model_3$) is designed to assess the effect of M&A activities on the efficiency and performance of the sample banks by comparing the financial performance of 4 merged banks with the other 4 unmerged banks based on their similar total assets, this is to avoid any bias comparing 11 banks with 4 banks, which is proposed in $Model_2$.

It should be emphasized that we run correlation between our explanatory variables, and results show that all variables had a correlation within an acceptable range (i.e. < 0.50). However, there was an exception with four variables as follows: there were high correlation between ROAA and both ROAE and cost to income ratios at values of 0.0767 and -0.748, respectively; and between net loans to total assets and net loan to deposit and short-term

funding at a value of 0.841. Due to the importance of these variables, it was decided to keep them and to run an Orthogonalization test to avoid the high correlation. After running the test, correlation between ROAA and both ROAE and cost to income ratios become 0.072 and 0.052, respectively; and correlation between net loans to total assets and net loans to deposit and short-term funding become 0.098.

3. Empirical results

In this Section we exhibit our detailed results. We use data collected from fifteen Nigerian banks out of which four non-merging banks are used as a benchmark. In order to critically assess whether there is improvement in the financial performance of the Nigerian banks after M&A, the data are analyzed using financial ratios and a *t*-test for equality of means is used to capture any significant differences. Subsequently, three logistic regression models are structured to describe the relationship between the dependent variable and the 15 explanatory financial ratios to determine the significant changes in the financial performance of the banking sector four years before and after the merger took place.

3.1. Descriptive statistics. *Asset quality ratios*: Asset quality is used to measure the quality of Nigerian banks' earning assets. This is measured by four financial ratios as shown in Table 2. Asset quality of the Nigerian market measured by impaired loans to equity suggests an improvement post- M&A with a mean value of 31.47 compared with a value of 55.21 pre- M&A. The pre- and the post- average figures corresponded to a 4 years period each (2001-2004 and 2006-2009) respectively. This result is also confirmed by the *t*-test for equality of means as there is a statistically significant difference between the pre- and post-M&A at the 10% level, as shown in Table 2. *Capital adequacy ratios*: Capital adequacy is used to determine how Nigeria banks could cope with shocks relating to their balance sheet. This category is measured by equity to total assets and equity to net loans ratios. The average means indicates that all banks experienced a great improvement in their capital level after the merger exercise as both ratios means increased after the consolidation. This is also confirmed by the *t*-test results which reveal that there is a significant difference between the two periods at the 1% level with a p-value of 0.000, as shown in Table 2. Therefore, this strongly implies that M&A have improved the financial performance of Nigeria market. *Liquidity ratios*: Liquidity ratios are used to determine how the Nigerian banks are able to meet their financial obligations to the stakeholders. Liquidity as the lifeblood of any organization determines the survival of banks and their inability to meet the demand of their customers exposed them to liquidity risk. This category is measured by three financial ratios, namely: net loans to total assets, net loans to deposit & short-term funding and liquid assets to deposit & short-term funding. Our result for two liquidity ratios indicates that M&A have improved the performance of the Nigerian market by potentially increasing the loan activities. This is evidenced by the higher average mean of net loans to deposits & short-term funding; and the lower average means of liquid assets to deposits & short-term funding. Our *t*-test results confirm this and show that there are statistical significant differences between the two periods for both ratios at the 10% and the 5% levels, respectively, as shown in Table 2. These three financial ratio categories show a positive impact of the M&A on the Nigerian market.

By contrast, operations (profitability) ratios suggest that M&A in the short-term has a slight adverse effect on the Nigerian market financial performance as measured by operation ratios. Operations ratios are very significant in exhibiting the ability of bank to generate profits from its assets or equities. This category is measured by 6 financial ratios, and the average mean of the four significant ratios, namely, net interest margin, other operating income to average assets, non-interest expenses to average assets and return on average equity, is reduced post-M&A, as shown in Table 2. This is also confirmed by the *t*-test results which indicate significant differences between the two periods at the 1% level. This is considered as a downside of the M&A as the Nigerian market may need more time to capture the benefits of economies of scale.

Table 2. Descriptive statistics for the 15 banks pre- and post- M&A using financial ratios

Variables	N		Mean		Std. deviation		Std. error		*t*-test for equality of means	
	Pre (0)	Post (1)	Pre (0)	Post (1)	Pre (0)	Post (1)	Pre (0)	Post (1)	*t*-value	*p*-value
Asset quality										
Loan loss provision-to-net interest revenue	52	47	12.302	17.036	15.486	21.683	2.148	3.163	1.259	0.211
Loan loss reserve-to-impaired loans	50	46	91.075	97.685	21.666	39.434	3.064	5.814	1.029	0.306
NCO-to-average gross loans	48	41	0.800	0.760	4.358	2.354	0.629	0.386	-0.041	0.967
Impaired loans-to equity	51	46	55.210	31.470	41.092	47.899	5.754	7.062	-2.626	0.010

Table 2 (cont.). Descriptive statistics for the 15 banks pre- and post- M&A using financial ratios

Variables	N		Mean		Std. deviation		Std. error		*t*-test for equality of means	
	Pre (0)	Post (1)	Pre (0)	Post (1)	Pre (0)	Post (1)	Pre (0)	Post (1)	*t*-value	*p*-value
Capital										
Equity-to-total assets	55	48	12.119	17.900	4.887	6.788	0.659	0.980	5.003	0.000
Equity-to-net loans	55	48	41.383	56.155	16.717	24.365	2.254	3.517	3.625	0.000
Operations (profitability)										
Net interest margin	54	45	9.524	7.458	3.439	2.309	0.468	0.344	-3.434	0.001
Other operating income-to-average assets	54	46	5.919	4.748	2.121	1.406	0.289	0.207	-3.195	0.002
Non-interest expense-to-average assets	54	45	9.227	7.122	2.813	2.261	0.383	0.337	-4.045	0.000
Return on average assets	55	48	3.2541	2.8026	2.0778	2.5162	0.2827	0.37099	-0.983	0.328
Return on average equity	54	46	27.107	14.496	12.875	16.627	1.752	2.452	-4.271	0.000
Cost-to-income ratio	54	45	61.159	56.562	16.570	13.455	2.255	2.006	-1.495	0.138
Liquidity										
Net loans-to-total assets	55	48	30.665	33.524	9.149	9.385	1.234	1.355	1.563	0.121
Net loans-to-deposit & ST funding	55	48	45.578	51.234	15.653	16.672	2.111	2.406	1.775	0.079
Liquid assets-to-deposit & ST funding	55	48	83.688	74.561	20.993	19.406	2.831	2.801	-2.280	0.025

Notes: Our final sample consists of 15 banks in which 11 banks have had M&A and 4 have no M&A. The pre- and the post-average figures corresponded to a 4 years period each (2001-2004 and 2006-2009) respectively and excluding the consolidation year - 2005. Fifteen out of twenty nine financial indicators are finally used to measure the financial performance of the Nigerian market. NCO = Net charge off; ST = short term.

3.2. Logistic regression models. *Results for the first model* (LR_1): This model is designed to analyze the overall financial performance of the Nigerian market, i.e., all banks four years before the financial period of 2005 in which the reform took place and comparing it with the performance four years after the M&A exercise to ascertain the influence of the M&A activities on the efficiency and performance of the whole market. The results of our logistic regression LR_1 model indicate that the model is statistically significant at the 99% confidence level with a *P*-value of 0.000, with R^2 value of 94.09% (R^2 Adj. = 66.71%). The model has a significantly low mean square error of 0.21% and a 15.17% mean absolute error, as shown in Table 3. This result implies that there are considerable differences between the two periods. This also implies that there are some improvements in the financial performance of the Nigerian banking industry after the reformation exercise.

The *P*-values for the likelihood ratio test also show significant differences in the capital ratios, namely, equity to total assets and equity to net loans at the 99% and 90% levels of confidence, respectively. This result strongly supports our previous findings that the banks have increased their equity and, therefore, they experienced a great improvement in their capital level after the consolidation. Asset quality ratios, namely, loan loss provision to net interest revenue, and impaired loans to equity are both statistically significant at the 99% and the 90% levels of confidence, respectively. This result implies that the cost of running the banks has been reduced after M&A activities and thereby increases bank efficiency and profitability and the banks' assets have to some extent been used efficiently to generate income due to the effect of M&A. Operations ratios, namely, non-interest expense to average asset and return on average equity are also significant at the 90% and 99% levels of confidence, respectively. This result signifies that the M&A exercise has an influence on the financial performance of the Nigerian market's profitability. Finally, liquid assets to deposits and short term funding ratio is the only significant liquidity ratio at the 99% level of confidence, as shown in Table 3. This result indicates that M&A contributed to the improvement of banks liquidity in the Nigerian financial market measured by the banking industry.

As shown in Table 3, the most important explanatory variable as measured by Chi^2 value is 'loan loss provision to net interest revenue' ratio with a value of 110.92. This followed by three ratios, namely, return on average equity, liquid assets to deposit and short term funding and equity to total assets with Chi^2 values of 38.758, 24.421 and 21.482, respectively.

Table 3. Logistic regression analysis result for $Model_1$

Parameters	LR_1			Stepwise LR_1		
	Estimate	Chi^2	*P*-value	Estimate	Chi^2	*p*-value
Cost-to-income ratio	0.1983	0.6528	0.4191			
Equity-to-net loans	0.3125	3.4930	0.0616	0.1145	14.299	0.0002
Equity-to-total assets	-0.6714	21.482	0.0000			
Impaired loans-to-equity	-0.0760	3.0664	0.0799	-0.0354	4.3283	0.0375
Liquid assets-to-deposits & ST funding	-0.2648	24.421	0.0000	-0.1811	19.449	0.0000
Loan loss provision-to-net interest revenue	0.3709	110.92	0.0000	0.1305	9.8392	0.0017
Loan loss reserve-to-impaired loans	-0.0115	0.2717	0.6022			
NCO-to-average gross loans	-0.0404	0.0333	0.8551			
Net interest margin	0.4416	0.5640	0.4526			
Net loans-to-total assets	0.0787	0.0905	0.7636			
Non-interest expense-to-average asset	-2.3323	3.1635	0.0753	-1.3544	24.574	0.0000
Other operating income -to-average assets	-0.7804	0.1924	0.6610	-1.3036	15.952	0.0001
Net loans-to-deposits & ST funding	-0.0364	0.0121	0.9126			
Return on average assets	2.4872	1.2290	0.2676			
Return on average equity	-0.2435	38.758	0.0000	-0.2667	12.379	0.0004
Model			0.0000			0.0000
R^2	94.09%			76.64%		
R^2Adj.	66.71%			64.45%		
MSE	0.0021			0.0108		
MAE	0.1517			0.3736		

Note: Our final sample consists of 15 banks in which 11 banks have had M&A and 4 have no M&A. Fifteen out of twenty nine financial indicators are, finally, used to measure the financial performance of the Nigerian market. LR_1 = Logistic regression $model_1$; NCO = Net charge off; ST = Short term; MSE = Mean square error; MAE = Mean absolute error. In building LR_1 Model a constant is included in building the model with an estimate value of 24.419 (a value of 31.441 for the stepwise model); and using a cut-off score of 0.50. Interestingly, the model shows 100% correct classification accuracy for pre- M&A, post- M&A and the overall model (for the stepwise model, classification results are 93.18%, 94.12% and 93.68% for post- M&A, pre- M&A and the overall model, respectively).

Our LR_1 stepwise model results show similar findings as per the LR_1 model. The overall model is statistically significant at the 99% confidence level with R^2 value of 76.64% (R^2Adj. = 64.45%) and 1.08% and 37.36% mean square error and mean absolute error, respectively. In terms of significant explanatory variables, the model has a slight change as other operating income to average assets ratio become significant at the 99% level of confidence; and equity to total assets is no longer significant. All other variables are statistically significant at the 99% level of confidence a part form impaired loans to equity ratio which is significant at the 95% level of confidence, as shown in Table 3. Our graphical analysis shows the prediction capability for our dependent variable (pre-post M&A) describes the relationship between different cut-off points and the per cent correctly classified. As shown in Figure 1, the middle blue line refers to the overall correctly classified. The highest orange line at the lower cut-off rates is the post- M&A correctly classified set, while the lowest red line at the lower cut-off rates refers to the Pre- M&A classified set, in both LR_1 (on the left-hand side) and LR_1 Stepwise (on the right-hand side), and *vice-a-versa* at the higher cut-off rates.

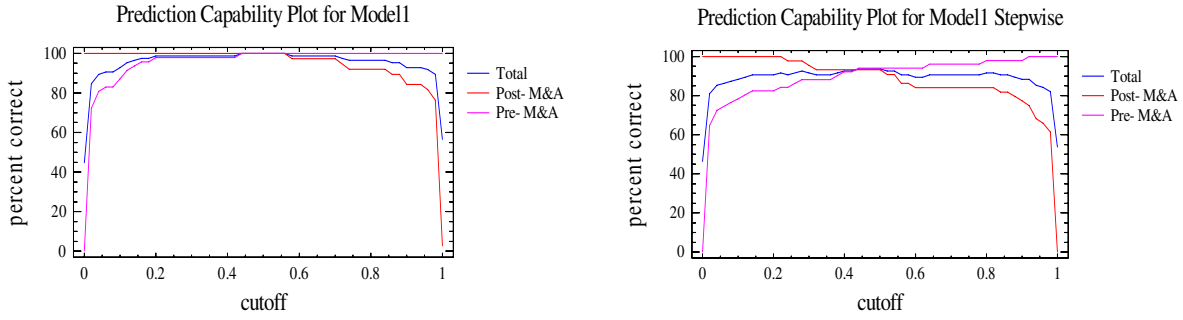

Fig. 1. Prediction capability plot using LR_1 (on the left-hand side) and LR_1 stepwise (on the right-hand side) for pre-post M&A

Result for the second model (LR_2): The second model is contrived to evaluate the financial performance differences between the 11 merged banks and the other 4 unmerged banks four years

before and after the financial period of 2005 in which the M&A activities took place. Second logistic regression (LR_2) model results reveal that a *p*-value of 0.000 for the analysis of deviance is found and the model is statistically significant at the 99% level of confidence. The model R^2 is 35.56% (R^2 Adj. = 2.64%) with mean square error of 2.65% and mean absolute error of 35.65%. This, to some extent, indicates that there are differences between the financial performance of the 11 merged banks and the other 4 unmerged banks after the introduction of consolidation exercise, as shown in Table 4. The *p*-values for the likelihood ratio test show that none of the capital and the liquidity ratios is statistically significant. This implies that M&A did not have a positive influence on the performance of the merged banks due to intense completion after the exercise. By contrast, five operations ratios are statistically significant at different levels of confidence, and one asset quality ratio, namely, loan loss reserves to impaired loans is statistically significant at the 95% level of confidence, as shown in Table 4. As per the importance of the explanatory variables, Table 4 shows that return on average assets is the most important variable with a Chi^2 value of 10.473. This followed by four ratios, namely, return on average equity, loan loss reserves to impaired loans, net interest margin and other operating income to average assets with Chi^2 values of 4.9509, 4.9346, 4.5359 and 4.1053, respectively.

Table 4. Logistic regression analysis result for $Model_2$

Parameters	LR_2			Stepwise LR_2		
	Estimate	Chi^2	*p*-value	Estimate	Chi^2	*p*-value
Cost-to-income ratio	0.0665	0.6181	0.4317			
Equity-to-net loans	0.0900	0.8037	0.3700	0.0577	5.2032	0.0225
Equity-to-total assets	0.1585	0.2073	0.6489			
Impaired loans-to-equity	0.0095	0.5352	0.4644			
Liquid assets-to-deposits & ST funding	-0.0453	1.3032	0.2536	-0.0436	4.9473	0.0261
Loan loss provision-to-net interest revenue	-0.0032	0.0031	0.9553			
Loan loss reserve-to-impaired loans	-0.0300	4.9346	0.0263	-0.0193	5.1290	0.0235
NCO-to-average gross loans	0.2762	2.3362	0.1264			
Net Interest margin	0.7035	4.5359	0.0332			
Net Loans-to-total assets	0.0882	0.3059	0.5802			
Non-interest expense-to-average asset	-1.1704	3.2772	0.0702			
Other operating income -to-average assets	1.0493	4.1053	0.0427			
Net loans-to-deposits & ST funding	0.0099	0.0163	0.8983			
Return on average assets	-3.0762	10.473	0.0012	-0.9417	9.7666	0.0018
Return on average equity	-0.1209	4.9509	0.0261	-0.0388	3.4061	0.0650
Model			0.0028			0.0001
R^2	35.56%			24.76%		
R^2Adj.	2.64%			13.29%		
MSE	0.0265			0.0240		
MAE	0.3565			0.3387		

Note: Our final sample consists of 15 banks in which 11 banks have had M&A and 4 have no M&A. Fifteen out of twenty nine financial indicators are finally used to measure the financial performance of the Nigerian market. LR_2 = Logistic regression $model_2$; NCO = Net charge off; ST = Short term; MSE = Mean square error; MAE = Mean absolute error. In building LR_2 Model a constant is included in building the model with an estimate value of -5.2564 (a value of 4.8038 for the stepwise model); and using a cut-off score of 0.50. Classification results for pre- M&A, post- M&A and the overall model are 50.00%, 93.65% and 82.35%, respectively (for the stepwise model, classification results are 95.77%, 34.78% and 80.85% for post- M&A, pre- M&A and the overall model, respectively).

The LR_2 stepwise model results show slightly different results. The overall model is statistically significant at the 99% confidence level with R^2 value of 24.76% (R^2Adj. = 13.29%) and 2.40% and 33.87% mean square error and mean absolute error, respectively. In terms of significant explanatory variables, the model shows that all the 5 significant variables are statistically significant at 95% level of confidence at least. For the capital category only one ratio, namely, equity to net loans is statistically significant at the 95% level of confidence confirming the LR_1 model results. This indicates that the increase in the capital base of the Nigerian market signifies some improvement in the market financial performance. In line with LR_1 model findings, one asset quality ratio, namely, loan loss reserve to impaired loans is statistically significant at the 95% level of confidence. In addition, both return on average assets and return on average equity are statistically significant at the 99% and 95% levels of confidence, respectively. Finally, one liquidity financial ratio, namely, liquid assets to deposit and

short term funding is statistically significant at the 95% level of confidence, as shown in Table 4. A number of variables become insignificant while both equity to net loans and liquid assets to deposit and short term funding become significant at the 95% level of confidence, as shown in Table 3.

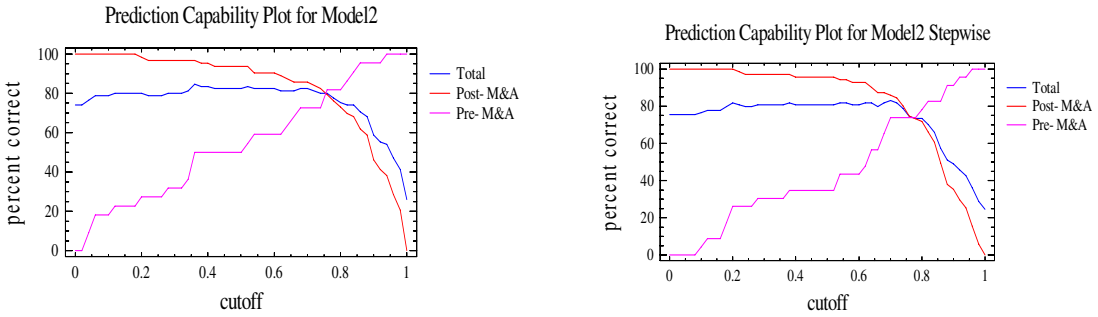

Fig. 2. Prediction capability plot using LR_2 (on the left-hand side) and LR_2 stepwise (on the right-hand side) for pre-post M&A

The prediction capability for our dependent variable (pre-post M&A) describes the relationship between different cut-off points and the per cent correctly classified, as shown in our graphical analysis in Figure 2. The middle blue line refers to the overall correctly classified. The highest orange line at the lower cut-off rates is the post- M&A correctly classified set, while the lowest red line at the lower cut-off rates refers to the pre- M&A classified set, in both LR_2 (on the left-hand side) and LR_2 stepwise (on the right-hand side), and *vice-a-versa* at the higher cut-off rates. Clearly, the distribution of the three lines is different compared to the previous model, i.e., LR_1, and leans to the right hand side or higher cut-off scores which confirms our numerical results. Generally speaking, it may be argued that our results based on this model are not strong enough as per the significantly low R^2 Adj. and, therefore, logistic regression (LR_3) model is suggested here. This may be due to the un-balanced sample used in building the LR_2 model, i.e., 11 merged banks versus 4 non-merged banks.

Result for the third model (LR_3): This model is designed to access the effect of M&A activities on the financial performance of the Nigerian market by comparing the 4 merged banks with the other 4 un-merged banks *based on their similarity in total assets* (*i.e., ln total asset* – see shaded banks in Table 1), this is to steer clear of any bias comparing 11 banks with 4 banks, which is proposed in LR_2 model. These 8 banks are examined in order to test whether there are differences in their performance four years before and after year 2005 of the reform exercise.

Third logistic regression (LR_3) model results show that the model is statistically significant at the 99% level of confidence with a *P*-value of 0.000. The model has R^2 value of 94.12% (R^2 Adj. = 44.94). The model has a significantly low mean square error of 0.16% and 11.89% mean absolute error, as shown in Table 3. This shows that M&A have a great influence on the Nigerian market when comparing two sets of banks which are equivalent in size, as shown in Table 5.

Table 5. Logistic regression analysis result for $Model_3$

Parameters	LR_3			Stepwise LR_3		
	Estimate	Chi^2	*p*-value	Estimate	Chi^2	*p*-value
Cost-to-income ratio	0.7285	27.304	0.0000	0.1733	7.2734	0.0070
Equity-to-net loans	0.8511	22.104	0.0000	0.8152	30.524	0.0000
Equity-to-total assets	-0.0819	0.0008	0.9773			
Impaired loans-to-equity	-0.0614	2.0703	0.1502			
Liquid assets-to-deposits & ST funding	0.3090	27.070	0.0000			
Loan loss provision-to-net interest revenue	0.4806	27.068	0.0000	0.0908	5.6748	0.0172
Loan loss reserve-to-impaired loans	0.0704	27.069	0.0000			
NCO-to-average gross loans	1.3165	8.8405	0.0029	1.3614	13.192	0.0003
Net Interest margin	4.4065	27.285	0.0000	1.4196	15.912	0.0001
Net Loans-to-total assets	2.6745	26.127	0.0000	2.1301	30.098	0.0000
Non-interest expense-to-average asset	-3.8851	27.067	0.0000			
Other operating income -to-average assets	7.7046	27.396	0.0000	4.3949	10.015	0.0016
Net loans-to-deposits & ST funding	-3.0786	19.420	0.0000	-2.3398	22.581	0.0000
Return on average assets	-9.7199	9.4912	0.0021	-7.6678	11.167	0.0008

Table 5 (cont.). Logistic regression analysis result for $Model_3$

Parameters	LR_3			Stepwise LR_3		
	Estimate	Chi^2	*p*-value	Estimate	Chi^2	*p*-value
Return on average equity	-0.2266	0.1657	0.6840			
Model			0.0000			0.0000
R^2	94.12%			87.99%		
R^2Adj.	44.94%			55.92%		
MSE	0.0016			0.0062		
MAE	0.1189			0.2133		

Note: Our final sample consists of 15 banks in which 11 banks have had M&A and 4 have no M&A. Fifteen out of twenty nine financial indicators are, finally, used to measure the financial performance of the Nigerian market. LR_3 = Logistic regression $model_3$; NCO = Net charge off; ST = Short term; MSE = Mean square error; MAE = Mean absolute error. In building LR_3 Model a constant is included in building the model with an estimate value of -261.141 (a value of -166.878 for the stepwise model); and using a cut-off score of 0.50. Interestingly, the model shows 100% correct classification accuracy for pre- M&A, post- M&A and the overall model (for the stepwise model, classification results are 95.45%, 100% and 97.78% for post- M&A, pre- M&A and the overall model, respectively).

This is also applicable to the *p*-value of the likelihood ratio tests which reveal very strong significant differences of 12 out of 15 financial explanatory variables at the 99% level of confidence used in building this model. Capital ratio category shows that equity to net loans is statistically significant at the 99% level of confidence. This result is in line with our *t*-test findings which indicate that these banks experienced a great improvement in their capital level after the merger exercise as per the positive association for the estimate value (i.e., 0.8511) which imply that equity has increased after the consolidation. All asset quality ratios, except impaired loans to equity, are statistically significant at the 99% level of confidence. Similarly, all operations ratios, except return on average equity, are statistically significant at the 99% level of confidence. These results are in line with our *t*-test results previously explained. Finally, all liquidity ratios are statistically significant at the 99% level of confidence which proves that the market has potentially increasing the loan activities. Our results imply that the Nigerian market asset quality, capital and liquidity have been enhanced by M&A activities even though the banks' profitability has not been efficiently improved as the Nigerian market may need more time to capture the benefits of economies of scale. As shown in Table 5, the most important explanatory variable as measured by Chi^2 value is 'cost to income ratios' ratio with a value of 27.304. This is followed by six ratios all with a very similar Chi^2 value, as shown in Table 5.

Our LR_3 stepwise model results show similar findings as per the LR_3 model. The overall model is statistically significant at the 99% confidence level with R^2 value of 87.99% (R^2Adj. = 55.92%) and 0.62% and 21.33% mean square error and mean absolute error, respectively. In terms of significant explanatory variables, the model includes 9 significant variables at the 99% level of confidence; which means three financial ratios are no longer significant, as shown in Table 5. Expectedly, this model has considerably improved the previous model (i.e., LR_2) results as the sample includes 4 merged and 4 non-merged banks with similar total assets.

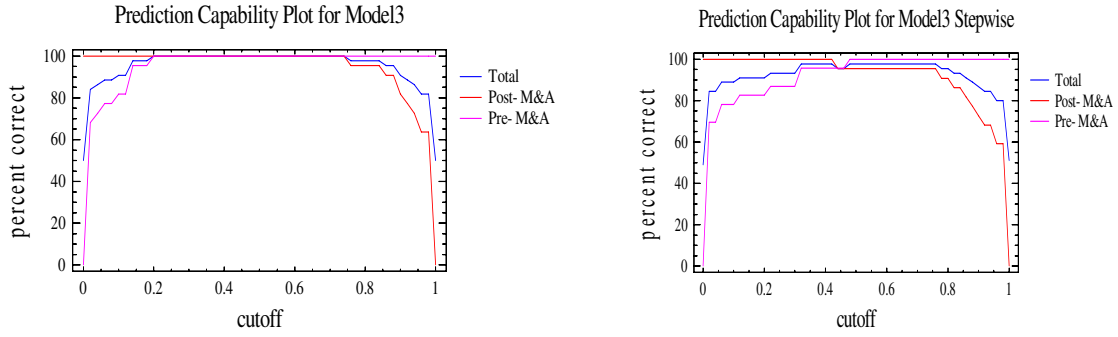

Fig. 3. Prediction capability plot using LR_3 (on the left-hand side) and LR_3 stepwise (on the right-hand side) for pre-post M&A

The graphical analysis of the prediction capability, shown in Figure 3, for our dependent variable (pre-post M&A) describes the relationship between different cut-off points and the per cent correctly classified. The middle blue line refers to the overall correctly classified. The highest orange line at the lower cut-off rates is the post- M&A correctly classified set, while the lowest red line at the lower

cut-off rates refers to the pre- M&A classified set, in both LR_3 (on the left-hand side) and LR_3 stepwise (on the right-hand side), and *vice-a-versa* at the higher cut-off rates.

Clearly, our investigation provides an answer to the main research question and based on our results, it can be concluded that there are significant differences between the financial performance of merged versus non-merged banks in the Nigerian market. Evidently, as per our results for the three financial categories namely asset quality, capital and liquidity, further consolidation can help increase the soundness of the Nigerian financial market which can help in achieving the CBN objectives.

Conclusion and areas for future research

This paper's main aim is to measure the effect of M&A on the Nigerian market's financial performance by comparing it 4 years pre- and 4 years post the 2005 consolidation. Our main findings based on *t*-test show that the overall market asset quality, capital and liquidity have improved whilst the market profitability has not. This is considered as a downside of the M&A as the Nigerian market may need more time to capture the benefits of economies of scale. There is evidence that the financial performance of the market is different between the two periods. This indicates that M&A has significant impact on the financial performance of the Nigerian market regardless the fact that their profitability is not yet improved. This, in fact, disagrees with other researchers' findings (see, for example, Kithinji and Waweru, 2007).

All logistic regression models' results show that the *P*-values in the analysis of deviance are less than 0.01 which denotes that these models are all statistically significant at the 99% level of confidence, indicating that M&A have a great influence on the efficiency and financial performance of the Nigerian market as measured by the banking industry. Our logistic regression models' results show that there are significant differences between the pre- and the post- M&A financial performance of the overall market, as evidenced by LR_1 model results. We also have evidence that banks which merged are significantly different from those which are not, as evidenced by LR_3 model results.

Future research should consider including those banks for which financial information is not currently available due to the new identity issues. More financial and non-financial variables could be used. Various statistical techniques should be used as it is expected that more accurate results could be achieved if more sophisticated modelling techniques such as neural networks are used. It can be argued that the lack of improvement in profitability in the sector is a result of time needed to benefit from economies of scale, a longer time frame post- M&A could be considered to capture a wider picture of the consolidation effect of the market on profitability. An extension of the time frame would perhaps also give an indication of whether there is a point at which the amount of M&A activity is optimized, and beyond which the benefits reduce or are eliminated entirely. These findings could have wider implications to other nations in which the financial systems have been in a state of instability for some time. The high degree of significance in our results suggests that other countries with developing banking systems may benefit from a period of consolidation and M&A activity, leading to greater strength in the institutions themselves and the underlying system.

References

1. Abdou, H. (2009). An evaluation of alternative scoring models in private banking, *The Journal of Risk Finance*, 10 (1), pp. 38-53.
2. Abdullahi, S.A. (2002). Distress in the Nigerian banking industry: A critical assessment of the mature, causes and extent, *Journal of Business Administration*, 2, pp. 135-154.
3. Adebayo, O. & Olalekan, O. (2012). An Analysis of the Impact of Mergers and Acquisitions on Commercial Banks Performance in Nigeria, *Research Journal of Finance and Accounting*, 3 (7), pp. 91-101.
4. Adeyemi, K.S. (2006). Banking Sector Consolidation in Nigeria: Issues and Challenges, *Union Digest*, 9.
5. Agbaje, O. (2008). The Banking industry in 2008, Business Day Online. [internet]. 19 February. Available at: http://www.businessdayonline.com/analysis/backpage/4569.html [accessed 2 June 2011].
6. Adegbaju, A.A. and F.O. Olokoyo. (2008). Recapitalization and Bank's Performance; Acase study of Nigerian Banks, *African Economic and Business Review*, 6 (1), pp. 1-4.
7. Agu, C., Olajide, D., Ikenwilo, D. and Orji, A. (2012). Mergers and acquisitions: the Nigerian banking consolidation program, *International Journal of Banking and Finance*, 8 (4), pp. 19-46.
8. Alao., R.O. (2010). Mergers and acquisitions in the Nigerian banking industry: An advocate of three mega banks, *European Journal of Social Science*, 15, pp. 554-563.
9. Altunbas, Y. & Ibanez, D.M. (2008). Mergers and acquisitions and bank performance in Europe: The role of strategic similarities, *Journal of Economics and Business*, 60 (3), pp. 204-222.
10. Amel, D., Barnes, C., Panetta, F. & Salleo, C. (2004). Consolidation and efficiency in the financial sector: A review of the international evidence, *Journal of Banking & Finance*, 28, pp. 2493-2519.

11. Andrade, G., Mitchell, M. & Stafford, E. (2001). New evidence and perspectives on mergers, *Journal of Economic Perspectives*, 15, pp. 103-120.
12. Beccalli, E. & Frantz, P. (2009). M&A Operations and Performance in Banking, *Journal of Financial Services Research*, 36, pp. 203-226.
13. Berger, A.N. et al (eds.) (1999). The Consolidation of Financial Services Industry, *Special Issue of Journal of Banking and Finance*, 23, pp. 2-4.
14. Brownbridge, M. (2005). The impact of Public on the Banking System in Nigeria, *Journal of Banking and Finance*, 29 (1), pp. 31-35.
15. Central Bank of Nigeria. (2004). Guidelines and Incentives on Consolidation in the Nigerian Banking Industry.
16. Central Bank of Nigeria. (2005). The Impact of Post Banks Consolidation on the Nigerian Economy, *Business Guardian*, December 13.
17. Central Bank of Nigeria (2008). Indigenous Banking in Nigeria, Central Bank of Nigeria. [Online]. Available at: http://www.cenbank.org/documents/gpagedocs.asp [accessed 22 May 2010].
18. Dagogo, D.W. & Okorie, P.I. (2014). The Post Consolidation Asset Base: Effect on Financial Leverage, Efficiency and Profitability of Nigerian Banks, *International Journal of Economics and Finance*, 6 (10), pp. 280-287.
19. Danjuma, N. (1993). *The Bankers' Liability*, Ibadan, African University Press.
20. DeYoung, R., Evanoff, D.D. & Molyneux, P. (2009). Mergers and acquisitions of financial institutions: a review of the post -2000 literature, *Journal of Financial Services Research*, 36, pp. 87-110.
21. Dogarawa, A.B. (2011). Chronology of banking reforms in Nigeria: A survey of past and present theoretical and empirical literature, *Journal of Financial Regulation and Compliance*, 19 (4), pp. 370-382.
22. Ebimobowei, A. & Sophia, J.M. (2011). Mergers and Acquisitions in the Nigerian Banking Industry, *The Social Sciences*, 6 (3), pp. 213-220.
23. Ezeoha, A. (2007). Structural effects of banking industry consolidation in Nigeria: A review, *Journal of Banking Regulation*, 8, p. 159.
24. Goddard, J. et al. (2007). European banking: an overview, University of Wales, University of St. Andrews, *Journal of Banking & Finance.*
25. Hand, D.J. & Henley, W.E. (1997). Statistical classification methods in consumer credit scoring: A review, *Journal of the Royal Statistical Society: Series* A (Statistics in Society), 160 (3), pp. 523-541.
26. Joshua, O. (2011). Comparative analysis of the impact of mergers and acquisitions on financial efficiency of banks in Nigeria, *Journal of Accounting and Taxation*, 3 (1), pp. 1-7.
27. Kithinji, A.M. & Waweru, N.M. (2007). Merger Restructuring and Financial Performance of Commercial Banks in Kenya, *Journal of Economics*, *Management and Financial Markets*, 2 (4), pp. 10-32.
28. Mordi, C.N.O. (2004). Institutional framework for the regulation and supervision of the financial sector, Central *Bank of Nigeria Bullion*, 28 (1), pp. 25-30.
29. Nwankwo, G. (1980). *The Nigerian Financial System*, London, Macmillan Publishing.
30. Otangaran, I. (2004). Stakeholders Perspective on the N25 billion capital base, *Financial Standard*, 5 (40).
31. Rhoades, S.A. (1996). Bank mergers and industry-wide structure, 1980-94, Staff Study Series 169, Federal Reserve System, Washington, DC.
32. Sanni, M.R. (2010). Short Term Effect of Consolidation on Profitability of Nigerian Banks, *African Research Review*, 4 (1), pp. 322-337.
33. Shanmugam, B. & Nair, M. (2003). Mergers and Acquisitions of Banks in Malaysia.
34. Soludo, C.C. (2004). Consolidating the Nigerian banking industry to meet the development challenges of the 21st century. Available at: www.cenbank.org.
35. Somoye, R.O.C. (2008). The performances of commercial banks in post-consolidation period in Nigeria: an empirical review, *European Journal of Economics, Finance and Administrative Sciences*, 14.

Appendix

	Banks	Constituent member
1	Access Bank Nigeria Plc*	Access Bank, Marina Int'l Bank & Capital Bank International
2	Afribank Nigeria Plc*	Afribank Plc and Afribank Int'l (Merchant Bankers)
3	Bank PHB Plc	Platinum Bank Limited and Habib Nigeria Bank Limited
4	Diamond Bank Plc*	Diamond Bank, Lion Bank and African International Bank
5	EcoBank Nigeria Plc*	EcoBank Plc
6	Equitorial Trust Bank Plc (ETB)*	Equitorial Trust Bank Ltd and Devcom Bank Ltd
7	Fidelity Bank Plc	Fidelity Bank, FSB International Bank and Manny Bank
8	First Bank of Nigeria Plc*	First Bank Plc, MBC International Bank & FBN (Merchant Bankers)
9	First City Monument Bank Plc (FCMB)*	First City Monument Bank, Coop Development Bank, Midas Bank and Nigeria-American Bank
10	First Inland Bank Plc	First Atlantic Bank, Inland Bank (Nigeria) Plc, IMB International Bank Plc and NUB International Bank Limited
11	Guaranty Trust Bank Plc (GT Bank)*	GT Bank Plc
12	Intercontinental Bank Plc*	Intercontinental Bank Plc, Global Bank Plc, Equity Bank of Nigeria Limited and Gateway Bank of Nigeria Plc
13	** Nigeria International Bank Limited(Citi Group - NIB)*†	Nigeria International Bank limited

Appendix (cont.)

	Banks	Constituent member
14	Oceanic Bank International Plc	Oceanic Bank International Plc and International Trust Bank
15	Skye Bank Plc	Prudent Bank Plc, Bond Bank Limited, Cooperative Bank Plc, Reliance Bank Limited and EIB International bank Plc
16	Spring Bank Plc	Citizens International Bank , ACB International Bank, Guardian Express Bank, Omega Bank, Trans International Bank and Fountain Trust Bank
17	**Stanbic IBTC Bank Plc*†	Stanbic Bank Limited and IBTC-Chartered Bank Plc
18	**Standard Chartered Bank Ltd (SCB)*†	Standard Chartered Bank Limited
19	Sterling Bank Plc	Trust Bank of Africa Limited, NBM Bank Limited, Magnum Trust Bank, NAL Bank Plc and Indo-Nigeria Bank
20	United Bank for Africa Plc*	United Bank for Africa Plc, Standard Trust Bank Plc and Continental Trust Bank
21	Union Bank of Nigeria Plc*	Union Bank of Nigeria Plc, Union Merchant Bank Limited, Broad Bank of Nigeria Limited and Universal Trust Bank Nigeria Plc
22	Unity Bank Plc	Intercity Bank Plc, First Interstate Bank Plc, Tropical Commercial Bank Plc, Centre-point Bank Plc, Bank of the North, New African Bank, SocieteBancaire, Pacific Bank and New Nigerian Bank
23	Wema Bank Plc*	Wema Bank Plc and National Bank of Nigeria Limited
24	Zenith Bank Plc	Zenith Bank Plc

Source: The Banker, CBN, 2012.
Notes: Foreign owned banks, * Banks finally selected for the analysis.