

Do Bank Mergers Enhance Profitability? An Assessment of Post-Merger Net Profit Margins in Nigeria

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Abstract

In 2005, there was an industry-wide wave of bank mergers and acquisitions (M&As) in Nigeria in response to the consolidation/recapitalization directive of the Central Bank of Nigeria (CBN). This study investigated the nature of relationship that existed between M&A and Net Profit Margins (NPM) of the banks following mergers, as M&A performance is still an open issue in the strategic management literature. The hypothesis: bank mergers do not have positive relationship with NPM was tested using data extracted from the financial reports of the banks three years before mergers (2002 - 2004) and three years after mergers (2006 – 2008). Trend analysis, Chow tests for structural break and t-tests were performed on the NPMs. The trend analysis suggested the existence of positive relationship between bank M&A and NPM. However, findings from Chow structural break test and t-statistic both suggested that M&As do not enhance bank NPM. Similarly, the results indicated that the Stand-alone banks out-performed the merged banks in this respect after mergers. Among others, the study recommends that rather than the ‘one size fits all’ policy of consolidation, CBN should redirect its attention on recreating sustainably profitable banks regardless of number or size.

Keywords: Merger, Acquisition, Banks, Profitability, Enhancement, Merged Banks,

1.0 Introduction

Strategic decisions are some of the most important decisions that senior management have to take as such decisions commit extensive resources and have far-reaching consequences for the life and wellbeing of an organization. Matters relating to diversification, acquisitions, mergers, and so on are all strategic decisions. In the practice of strategic management, three general explanations of strategy development in organizations have been identified (Johnson and Scholes, 2000). Strategies can develop as a result of deliberate management intent; strategies can develop as an outcome of cultural and political processes in and around organizations; and finally, strategy development can be imposed on an organization by the regulators of an industry (Johnson and Scholes, 2000). The last explanation of strategy development captures the scope and focus of this article.

Strategies, like M&A, could be imposed on an organization in a number of ways. There may be situations in which business managers face enforced choice of strategy. Government, through its agencies, may dictate or encourage a particular strategic course of direction for an industry, especially where government exercises extensive regulation over such industry. The relatively recent (2004/2005) industry-wide bank consolidation in Nigeria occasioned by recapitalization is a case in point. It was not the choice of the banks’ managements to consolidate; it was the intent of the government through the Central Bank of Nigeria (CBN). Most banks in Nigerian were subjected to such enforced strategic direction as merger and acquisition (M&A) was adopted by CBN as the preferred mode of consolidation by recapitalization.

The broad intent of the study is to generally examine the nature of relationship that exists between bank mergers and acquisitions and profitability following the merger wave that swept through the Nigerian banking industry during the period 2004 – 2005. Specifically, the study assesses whether the Net Profit Margins (NPM) of banks have been enhanced comparatively after M&A and to investigate if there exist any difference between the NPM of merged banks and the stand-alone banks post-mergers.

Hypotheses: To achieve the objective of this study, the following hypotheses have been formulated as guide for this study.

H₀₁: Bank M&A strategy is not positively related to improvement in the Net Profit Margins of merged banks.

H₀₂: Consolidation does not have positive relationship with the Net Profit Margins of the Stand-alone Banks.

H₀₃: There is no significant difference between the Net Profit Margin of the target group banks and the control group banks before mergers.

H₀₄: There is no significant difference between the Net Profit Margins of the target group banks and the control-group banks after mergers.

2.0 Empirical Literature

The M&A literature confirms that bank restructuring is an ongoing process in many economies. The dynamic nature of bank M & As have become familiar in the majority of all the countries of the world as a large number of international and domestic banks have been engaged in M&A activities (Egger and Hahn, 2010). Regardless of industry, Alao (2010) observes that M & As have become a global phenomenon, with an estimated 4,000 deals taking place every year. M & as are among the largest investments that a company may ever undertake. Corporate M & As is common, high-profile activities for most business organizations. Given the level of attention devoted to the topic and the inherently high stakes of the transactions, M & As play a major role in most firms' strategies (Zaheer and Souder, 2004). Highlighting the depth of the M & A literature, Capasso & Meglio (2007) acknowledge that M & As have been studied through several theoretical lenses, generating a vast amount of empirical studies and theoretical contributions that have produced a fragmented picture of the M & A phenomenon. A merger, from a legal perspective, is the combination of two or more firms in which all but one legally cease to exist, and the combined organization continues under the original name of the surviving firm (DePamphilis, 2011). From an economic perspective, business combinations also may be classified as horizontal, vertical, or conglomerate mergers. Horizontal merger occurs between two firms within the same industry or across similar goods or services; whereas vertical mergers are those in which the two firms participate at different stages of production or value chain; and conglomerate merger is between two firms in completely different industries (DePamphilis, 2011; Platt, 2007; Lien, 2005).

Although closely related to merger, an acquisition occurs when one company takes a controlling ownership interest in another firm, a legal subsidiary of another firm, or selected assets of another firm such as a manufacturing facility (DePamphilis, 2011). Pervinen (2003) on his part points out that acquisition is the absorption of one firm by another in which the resulting firm maintains the identity of the acquiring company. In larger part of the literature, merger and acquisition are treated as a single business phenomenon. However, this does not omit the differences between mergers, acquisitions and takeovers. In a merger, unlike in an acquisition, neither the assets nor the stocks of one corporation are physically transferred to another corporation. Rather, the two corporations are unified by operation of law (Kwall, 2006). With respect to the organization of economic activity, Pervinen (2003) similarly affirm that the different modes of M & A are perceived to be similar, the essential issues being the extension in firm boundaries, the death and birth of new organizational entities, and a change in the internal organizational logic of firms. The M&A literature is dominated by the traditional arguments that M&As increase shareholder value based on the assumption that the anticipated value of the entity created by the merger of two groups will exceed, in terms of potential wealth creation, the sum of the respective values of the two separate groups (Calipha et al., 2011; Ayadi et al., 2011; Ullah and Ullah, 2010, etc.). Upon announcement of an M & A transaction, synergies are most of the time mentioned as the primary underlying reasoning driving M&A deals.

Notably, appreciable number of strategic management researchers have concurred that M & As can, among other benefits, help firms, including banks, gain immediate access to new markets, products, distribution channels, desirable market positions/market share, systems and processes, eliminate competition, and gain new scarce resources (Calipha et al., 2011; Gambill and Hodge, 2008; Dermine, 1999).

Banks' decision for M&A might be influenced by external factors such as regulations and laws, globalization, technological progress or change (Goyal and Joshi, 2011; Pasiouras et al., 2007, etc.); or repeated episodes of banking sector crisis, and privatization of state-owned banks, especially in emerging market countries (Behr and Heid, 2008; De Nicolo et al., 2003; Bank for International Settlements, 2001). Broadly, bank M & As have been embarked upon with the hope of improvement in three areas, namely Economies of Scale, Economies of Scope, and Synergy Benefits (Chand, 2009; Lenz, 2008). However, Neffati et al., (2011) caution that the effects of M&As on firm value remain controversial, with some findings suggesting positive impact on profitability and others suggesting the contrary (Caruso and Palmucci, 2007).

3.0 Methodology

The study adopted content analysis of the audited annual financial reports of the banks. The study is structured as matched-sample comparisons: matching merged banks (target group) with stand-alone or non-merged banks (control group). In this study, the question is partly whether or not merged banks have outperformed their stand-alone peers following mergers. The independent variables are the M&As that took place in the banks in part of the period under study (2002 – 2008). The dependent variables are the performance indicators (Net Profit Margins) that are used to evaluate performance following the mergers. In view of the implications the findings of this study may have in the face of competition and likely damage to customer loyalty and investors' confidence, the banks studied have been coded as Merged Bank 1 (MB1), Merged Bank 2 (MB2), and Stand-Alone Bank 1, (SAB1), Stand-Alone Bank 2 (SAB2) and so on.

The data for this study were obtained from the audited annual financial reports and accounts of the 89 pre-consolidation banks three years before mergers (2002-2004), and the 24 consolidated banks three years after mergers (2006-2008). These financial reports of the banks under study were mostly obtained from Research & Data Services Limited, (REDASEL), Lagos, the publisher of *Nigerian Banking, Finance & Commerce (NBFC)*; a reference source on Nigeria's financial and commercial sectors. To supplement and authenticate the data obtained from REDASEL, some audited annual financial reports were personally obtained by the researchers from some of the banks. Information extracted from these audited financial reports was used to calculate the Net Profit Margins of the banks before and after mergers and acquisitions. Accounting figures, namely Profits Before Tax and Gross Earnings (Turnover) were extracted to compute the NPM for the banks. NPM was obtained by:

$$\text{NPM} = \frac{\text{Net Profit Before Tax}}{\text{Gross Earnings}} \times 100 \quad (1)$$

Initially, three years NPM were computed for the 89 pre-consolidation banks that later became the merger components or partners. Mean NPM of the constituent banks that made up the post-merger banks were later calculated. For instance, if MB18 (Merged Bank number 18) was born out of nine pre-consolidation banks, it was impossible for us to compare all the individual NPMs of these nine pre-merger banks with the NPM of one post-merger bank (MB18) these nine pre-merger banks merged into. For ease of comparison, mean NPM for these nine pre-merger banks was calculated and compared with the NPM of the post-merger bank they became. These mean computations were performed only for the target group banks. For the control group, there was no need for group mean to find the mean NPM as they were stand-alone banks; they were not involved in mergers.

Data analysis started with analysis of the trend of NPM obtained for both the target and control groups before and after mergers. The analysis of trend is structured as pre-merger (2002 - 2004) NPM trend, and post-merger (2006 - 2008) NPM trend. However, this trend analysis constitutes preliminary analysis performed to depict the surface impact of mergers on NPM of the banks.

T-test: Since the study is a matched-sample comparison of the NPM of the target group banks and the control group banks before and after mergers, the *t-statistic* was performed first, to investigate the change in the NPM of the target group compared to that of the control group. The choice of the *t-statistic* is justified on the findings of Caves (1989) and Brunner (2001) that it is the key test by which an accounting study of M&A performance proves its findings, because it is able to evade the problem of holding constant other factors that plague ex post studies of mergers effects.

All hypotheses are tested at $\alpha = 0.05$, that is, level of significance. The t-test is obtained by:

$$t_c = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{s_p^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}} \quad (2)$$

$$s_1^2 = \frac{\sum (x - \bar{x}_1)^2}{n - 1}, \quad s_2^2 = \frac{\sum (x - \bar{x}_2)^2}{n - 1}$$

$$s_p^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}$$

Where: s_1^2 & s_2^2 = Variance of the target group and the control group respectively.

\bar{x}_1 & \bar{x}_2 = Mean performance of the target group and the control group respectively

n_1 & n_2 = Number of banks in the target group and the control group respectively

s_p^2 = Pooled variance of both groups

t_c = t value calculated,

Decision rule: Reject H_0 if $t_c \geq t_{\frac{\alpha}{2}} (n_1 + n_2 - 2)$

Secondly, apart from comparing the performance of the target group with that of the control group, t-statistic was also employed to further investigate the change in the NPM of the target group (merged banks) after their mergers. Here, the mean NPM of the target group banks before merging was compared with their NPM after mergers. This was performed in order to obtain an independent picture of the effect of M&A on the NPM of the banks.

Chow Test: The Chow test is the most commonly used in time series analysis to test for the presence of a structural break (Dougherty, 2007). In program evaluation, as in the case of this study, the Chow test is used to determine whether the independent variables have impact on different subgroups of the population, namely the merged banks and the stand-alone banks. A series of data can often contain a structural break, due to a change in policy or sudden shock to the economy, such as the M&As in the Nigerian banking sector 2004 - 2005. The Chow test was performed to test for a structural break.

In the first case, there will be just a single regression line to fit the data points (scatter plot). In the second case, where a structural break is anticipated, these will be two separate models. This suggests that model 1 applies before the structural break at time t (before M&A), and model 2 applies after the supposed structural break (that is, after M&A).

The model is:

$$y_t = f(t) + \varepsilon \quad (3)$$

Where

y_t is the Net Profit Margin (NPM)

t is the time (year). Specifically,

$$y_t = \alpha + \beta t + \varepsilon \quad \text{general model for the combined periods} \quad (4)$$

$$y_{1i} = \alpha_1 + \beta_1 t_{1i} + \varepsilon_{1i} \quad \text{model for period before mergers and acquisitions} \quad (5)$$

$$y_{2i} = \alpha_2 + \beta_2 t_{2i} + \varepsilon_{2i} \quad \text{model for period after mergers and acquisitions} \quad (6)$$

We test the hypothesis;

$$H_{01}: \alpha_1 = \alpha_2$$

$$H_{02}: \beta_1 = \beta_2$$

Where α_1 = the intercept (before M&A)

α_2 = The intercept (after M&A)

β_1 = Slope (rate of change before M&A)

β_2 = Slope (rate of change after M&A)

ε = Error term

The Residual Sum of squares for the combined model, the pre-merger and the post-merger models are: RSS_c , RSS_1 and RSS_2 respectively. So that the F-statistic is given as:

$$F = \frac{RSS_c - (RSS_1 + RSS_2) / k}{RSS_b + RSS_a / n - 2k} \quad (7)$$

The test statistic follows the F-distribution with k and $N_1 + N_2 - 2k$ degrees of freedom.

$RSS_c = RSS_1$ and RSS_2 respectively.

k = number of parameters (α and β) will be 2.

N_a and N_b = number of years before structural break and after structural break respectively.

4.0 Results and Discussions

Trend Analysis: Trend analysis of the NPM obtained for both the target and control groups before and after mergers. The results obtained from the trend analyses are presented on Tables 1 and 2, showing pre-merger performance trend (2002-2004), and post-merger performance trend (2006-2008). It describes the surface impact of mergers on NPM of the banks. Table 1 presents the outcome of trend analysis performed on the NPMs of the target group banks. It illustrates that the NPM improved post-M&A because the number/percentage of banks in the target group that experienced upward trend in their NPM increased from 6 (35.3%) before mergers to 13 (76.4%) after mergers, while the number/percentage of banks that had downward or stationary trend dropped from 11 (64.7%) before mergers to 4 (23.6%) after mergers. Table 2 presents the results of the trend analysis performed on the NPMs of the control group. The table indicates that there is neither improvement nor deterioration in the NPM of the control group banks after mergers as the number/percentage of banks that were experiencing downward or stationary trend as well as those experiencing upward trend remained unchanged after mergers.

Chow Tests for Structural Break: In this analysis, F-statistics were computed for the NPMs of both target and control groups, respectively, using E-Views Software, the structural break test was performed to test the hypothesis that: H_{01} : Bank M&A strategy is not positively related to improvement in the NPMs of merged banks, at 5% level of significance, rule: Reject H_{01} if $F_c \geq F_{\alpha(V_1, V_2)}$, or $P < 0.05$. The summary of results is shown in Table 3.

Table 3 presents the results of Chow test structural break test performed on the NPMs of the 17 target group banks. It is evidenced from the table following the decision rule that only 2 banks (MB11 and MB12) out of 17 banks in the target group had structural break (change) in their NPM ratios after mergers, while all the remaining 15 banks did not experience structural break (change) after mergers. However, the direction of change in performance for the bank with structural break remains a question as the slopes represented by $C(2) = 2.431998$ and $C(2) = 0.920484$ indicates a marginal improvement in NPM ratios of the two banks respectively following mergers. Chow structural break test was also performed to test the hypothesis: That Consolidation does not have positive relationship with the Net Profit Margins of the Stand-alone Banks. Illustrated on Table 4 is the result of this test. As can be seen on Table 4, the results of Chow test for structural stability performed on NPM show that no bank among the control group had a structural break as none of them could meet the decision rule above, hence we do not reject H_{02} , implying that none of the control group banks had a change in its performance as regards NPM after mergers, their performance in this respect remained the same as before mergers, there is no structural break, rather structural stability exists.

Results of t – Statistic: Using SPSS-18, Statistical Package for Social Sciences (SPSS), to further test the hypothesis: H_{01} : Bank M&A strategy is not positively related to improvement in the Net Profit Margins of merged banks, Paired Sample t-statistics was performed with the Decision Rule: Reject H_{01} if $t_c > t_{1-\alpha/2, df}$.

Table 5 summarizes the results of paired t-statistic (t-test) performed on the NPMs of merged banks comparing the mean NPM before mergers with the mean NPM after mergers. We reject H_{01} . As the table illustrates, there are changes in NPM after mergers. As highlighted by the table, the paired difference for NPM depicts a mean paired difference of -5.61699 for the merged banks after mergers. The value of this mean paired difference indicates a negative change in performance; implying that the mean NPM ratio of the merged banks deteriorated by 5.61699% after mergers. Paired Sample t-statistics was performed on the control group banks to test the hypothesis H_{02} : Bank consolidation does not have positive relationship with profitability of the control group banks, with the Decision Rule: Reject H_{02} if $t_c > t_{1-\alpha/2, df}$. In other words, reject H_{02} if the value of t_{computed} is greater than the t_{table} value or Probability of $P < 0.05$. Table 4.6 presents the results.

Table 6 demonstrates that the comparison of the NPMs of the control group banks before mergers with their NPMs after mergers indicates change in NPM as we reject H_{02} . However, the question remains what is the nature of change? As the Paired Difference on the t-table indicates, 8.64% deterioration in NPMs of the stand-alone banks was observed after mergers. The hypothesis H_{03} : There is no significant difference between the NPM of the target group banks and the control group banks before consolidation was tested by performing Independent Sample t-test for Target Vs Control Group (Before Mergers) with the Decision Rule: Reject H_{03} if the value of t_{computed} is greater than the t_{table} value or Probability of $P < 0.05$. The results are presented on table 7.

Table 7 summarizes the results of the independent sample t-test performed to compare the NPMs of the target group banks with those of the control group banks before mergers. The table displays that there are differences between the NPMs of the target group banks and those of the control group banks as we reject H_{03} signifying that there were differences in the NPMs of the two groups even before mergers. As the paired difference reflects, the mean NPM of the control group was significantly higher than the target group before consolidation. To test the hypothesis H_{04} : There is no difference between the performance of the target group banks and the control group banks after mergers, Independent Sample t-test was also performed, with the Decision Rule: Reject H_{04} if $t_c > t_{1-\alpha/2, df}$. That is, reject H_{04} if the value of t_{computed} is greater than the t_{table} value or Probability of $P < 0.05$.

Table 8 presents the results of the comparison of the NPMs of the target group banks and the control group banks after mergers and the table shows that there is difference in their NPMs following consolidation as we reject H_{04} . As illustrated by the Average Differences on the table, the control group banks outperformed the target group banks in terms of NPM.

Table 9 summarizes the results of Chow tests for structural break performed on the Net Profit Margins of the entire Nigerian banking industry during the period under study. The table illustrates that only two banks representing 9% of the of 22 banks studied that had structural break in terms in its NPM after mergers, the remaining 20 banks (91%) had structural stability, signifying no change post-mergers.

With respect to the intent of the study, we obtained on the surface, after performing trend analysis of post-merger NPM, evidences that suggest existence of positive relationship between banks M & As an improved profitability. However, other statistical techniques have suggested otherwise. Based on evidences obtained from Chow Structural stability tests and t-statistics, the study found that generally, bank M & As do not have positive relationship with enhanced NPM.

As regards the investigation whether the target group banks outperformed the control group banks following bank consolidation, the study also obtained evidence that suggest that in general, the control-group (stand-alone) banks significantly outperformed the target-group (merged) banks after consolidation. In addition, the study found that even prior to consolidation; the control-group (stand-alone) banks were outperforming the target-group (merged) banks.

5.0 Conclusions and Recommendations

Using accounting from 22 of the 25 consolidated banks, the study examines the relationship between bank mergers and Net Profit Margins following 2004/2005 merger wave that accompanied the general consolidation/recapitalization process in the Nigerian banking industry.

Generally, bank M&As have attracted immense attention not only from scholars, but also from government, business media, legislators, regulators, investors, and the enlightened banking public, and will continue to remain prominent in public and academic discourse. Based on the results obtained from statistical analyses of the study data, we thus conclude that in general, bank M & As do not give rise to differentiated NPM. In negligible cases, marginal improvements in NPM were recorded, whereas in other multitude cases, deterioration, or at best stagnation were observed. It is one of the study's conclusions that bank M&As in Nigeria have fallen short of the popular expectations and pre-merger promises of profitability enhancement. Even where only one bank manages to put up an improvement in profitability (NPM), the value gains are so marginal and almost statistically insignificant.

In the face of lack of enhancement of the NPMs of banks in Nigeria following M&As, we recommend that rather than concentrating on creating a small number of large banks, as the 2004/2005 consolidation policy had intended, the regulators of the banking industry should redirect their efforts, attention, and policies to creating or recreating banks that are increasingly profitable regardless of their number or size. Efforts should be made to create better banks, not bigger banks, as our findings have shown that bank's size does not automatically translate into performance enhancement. In addition, the study recommends that future banking reforms should be focused on alternative corporate strategies that will engender sustainable, improved profitability upon which banks may develop competitive prowess within the Africa and globally. As well, the research findings have implications for banks' management. Although this study acknowledges that the banks mergers of 2004/2005 were essentially forced mergers, a handful of voluntary mergers/acquisitions have taken place afterwards. Therefore, we recommend that banks' management should be cautious about future reforms that borders on corporate restructuring and implement such with the highest possible carefulness and with the benefit of hindsight in order to avoid the futility of bank M&A that this study has revealed.

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Appendix

Table 1: Trends of NPM for Target Group (Before and After Mergers)

	Trend Before Mergers (2002 - 2004)			Trend After Mergers (2006 - 2008)		
	Upward	Downward/Stationary	Total	Upward	Downward/Stationary	Total
No. of Banks	6	11	17	13	4	17
Percentage	35.30%	64.70%	100%	76.40%	23.60%	100%

Source: Analysis of survey data

Table 2: Trends of NPM for Control Group

	Trend Before Mergers (2002 - 2004)			Trend After Mergers (2006 - 2008)		
	Upward	Downward/Stationary	Total	Upward	Downward/Stationary	Total
No. of Banks	2	3	5	2	3	5
Percentage	40%	60%	100%	40%	60%	100%

Source: Analysis of survey data

Table 3: Chow Test Results for Target Group. Variable: NPM

S/No	Consolidated Bank	F _{computed}	F _{table}	Probability of F	Decision
1	MB1	13.84	19	0.067	Do Not Reject H ₀
2	MB2	1.63	19	0.379	Do Not Reject H ₀
3	MB3	0.2	19	0.831	Do Not Reject H ₀
4	MB4	2.49	19	0.285	Do Not Reject H ₀
5	MB5	0.29	19	0.773	Do Not Reject H ₀
6	MB6	5.16	19	0.16	Do Not Reject H ₀
7	MB7	0.05	19	0.95	Do Not Reject H ₀
8	MB8	5.18	19	0.16	Do Not Reject H ₀
9	MB9	0.4	19	0.7	Do Not Reject H ₀
10	MB10	2.83	19	0.26	Do Not Reject H ₀
11	MB11	32.3	19	0.12	Reject H₀
12	MB12	120.21	19	0.0082	Reject H₀
13	MB13	13.3	19	0.06	Do Not Reject H ₀
14	MB14	5.81	19	0.14	Do Not Reject H ₀
15	MB15	0.572	19	0.63	Do Not Reject H ₀
16	MB16	2.95	19	0.25	Do Not Reject H ₀
17	MB17	1.01	19	0.49	Do Not Reject H ₀

Source: Analysis of survey data

Table 4: Chow Test Results for Control Group. Variable: Net Profit Margin

S/No.	Bank	F _{computed}	F _{table}	Probability of F	Decision
1	SAB 1	0.2	19	0.82	Do Not Reject H ₀
2	SAB 2	1.33	19	0.42	Do Not Reject H ₀
3	SAB 3	3.54	19	0.21	Do Not Reject H ₀
4	SAB 4	0.45	19	0.68	Do Not Reject H ₀
5	SAB 5	9.05	19	0.09	Do Not Reject H ₀

Source: Analysis of survey data

Table 5: Results of Paired Sample t-statistics performed on the NPM for the Stand-Alone Banks (Before vs After M & As).

Paired Difference	t-computed	Probability	t _{1-α/2, df}	Decision
-5.61699	-4.053	0	t _{0.975, 50} = 2.01	Reject H ₀

Source: Analysis of survey data

Table 6: Results of Paired Sample t-statistic performed on the NPMs of the Control Group (Before & After Consolidation).

Paired Difference	t-computed	Probability	t _{1-α/2, df}	Decision
-8.64%	-3.521	0.003	t _{0.975, 14} = 2.145	Reject H ₀

Source: Analysis of survey data

Table 7: Results of Independent Sample t-test on NPM of Target Group Vs Control Group (Before Mergers)

Target Group	Control Group	Average Difference	t-computed	Probability	t _{1-α/2, df}	Decision
14.28%	22.57%	8.29%	4.64	0.002	t _{0.975, 64} = 2.00	Reject H ₀

Source: Analysis of survey data

Table 8: Results of Independent Sample t-test Performed on the NPMs of the Target Vs Control Group (After Mergers)

Target Group	Control Group	Average Difference	t-computed	Probability	t-table (t _{1-α/2, df})	Decision
19.90%	31.20%	11.30%	3.66	0.0015	t _{0.975, 64} = 2.00	Reject H ₀

Source: Analysis of survey data

Table 9: Summary of Chow Structural Break Tests Performed on NPM of the Nigerian Banking Industry

Banks	Structural Break	Structural Stability	Total
No. of Banks	2	20	22
Percentage	9%	91%	100%

Source: Analysis of survey data