Merger and its Impact on the Financial Performance of Commercial Banks in Nepal

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ABSTRACT

This study examines the impact of mergers on the financial performance of Nepalese commercial banks. The information was extracted from the annual reports of particular sample banks. The data were analyzed using the SPSS 20.0 software version. Pre-merger performance and post-merger performance were compared using a paired sample t-test to determine whether there was a significant difference. The correlation and regression coefficients were determined. NPL have a considerable negative influence on ROA across all evaluated independent variables (financial ratios), and their significance does not differ significantly between the pre-merger and post-merger periods. In contrast, CAR has no effect either before or after the merger. There is a lot of evidence that CDR helped banks do better financially in the years after they merged.

Keywords: *Return on assets, Non-performing Loan, Capital adequacy ratio, Credit-deposit ratio, Merger, Financial performance*

I. INTRODUCTION

Mergers and acquisitions are now important components of many corporate business plans, especially for companies seeking to strengthen and sustain their competitive position in the market. Consolidation through mergers and acquisitions has been commonplace in economies all around the world for quite some time. The adoption of economic liberalization regulations under a mixed economic model in the 1980s led to a dramatic increase in the number of financial institutions operating in Nepal. However, this artificial growth of BFIs has resulted in several new and complex financial issues. The economic indicator shows that Nepal's economy is fragile and in danger of collapsing. The government's goal in implementing the merger was to boost the economy's

confidence in the financial system. To reduce the number of BFIs, improving financial stability, and boosting public confidence in the banking industry, the NRB has established the Merger by Law, 2068. As a result, we're seeing some positive restructuring and consolidation in the banking industry right now.

With the NRB's encouragement, merger activity has skyrocketed. Mergers have been implemented to improve profitability, scale operations, and expand businesses' capabilities (Pathak, 2016). Although the number of employees at a bank may not change, studies demonstrate that economies of scale and scope make bank mergers a good thing for small and medium-sized banks (Peng & Wang, 2004). However, research by Cornett et al. (2006) shows that large bank mergers lead to greater performance increases than small bank mergers and that mergers that focus on a single activity lead to greater performance gains than those that diversify over multiple activities. The Nepal Rastra Bank did not decide to combine on its own. Instead, the bank was forced to do so in order to get more money and be better able to compete in the market.

In the majority of nations around the globe, mergers and acquisitions in the banking sector have become a prominent method of corporate reorganization (Jayadev & Sensarma, 2007). Since the 1980s, when the government launched the financial sector liberalization process, the Nepalese financial sector has seen considerable development (Gajurel & Pradhan, 2012). During the early stages of their development, the proliferating financial institutions (FIs) were able to make solid profits. However, as a result of the unrestricted entry of FIs into the market, competition among them intensified, and many of them began to struggle with maintaining an appropriate capital base as mandated by the regulatory body. Some of them have merged, and others are in the process of merging in order to deal with this predicament.

In 2012, the number of BFIs reached 220, which included 32 commercial banks, 88 development banks, 77 finance companies, and 23 microfinance institutions (MFIs). In comparison to the size of Nepal's economy, the number of BFIs was high. This led to unhealthy competition among the BFIs for deposit collection, loan disbursement, and a growing share of bad loans, causing issues with the underperformance of the BFIs. Thus, Nepal Rastra Bank (NRB) introduced the Merger Bylaws Policy in 2011 to enhance the capacity of banks for healthy competition among foreign counterparts that were anticipated to enter the market. The NRB also implemented a number of regulatory provisions, such as the acquisition bylaw in 2013, which was later incorporated into the merger and acquisition bylaw in 2016. The monetary policy of 2015–2016 increased the minimum paid capital by four times for financial institutions. In 2015, commercial banks paid up capital of NPR 4 billion,

which has increased to NPR 18 billion in 2021. The NRB has continuously encouraged mergers of BFIs through annual monetary policies (Karki, 2022).

The NRB has made significant strides in lowering the number of BFIs through a merger that has brought stability and credibility. As of mid-March 2022, 239 BFIs were in the process of merging, with 177 BFIs having their licenses cancelled. There are currently 27 commercial banks, 17 development banks, 17 financial institutions, and 66 microfinance institutions. When a weak institution joined with a strong one, the merger made the weak institution's finances better (Karki, 2022).

The primary objective of this research is to determine, following the NRB's 2011 introduction of the Merger by Law to raise the capital base, the current operating performance of the merged banks and financial institutions in Nepal. Are these banks truly performing well after the merger, or has the merger had a negative influence on their operational performance? This study aims to determine the difference between the pre-merger and post-merger operating performance of commercial banks, the relationship between influential factors and the financial performance of the commercial banking sector, and the success or failure of mergers in the Nepalese banking industry.

II. LITERATURE REVIEW

Adhikari (2016) assessed the systemic performance of banks independent of their merger status to determine the effect of Nepal's banks' merger regulations (2011) on the performance of privately-owned "Class A" banks in Nepal (2012–2015). The information was obtained from the Nepalese Central Bank. Multiple linear regression analysis was used in the study to determine the effect of variables of interest on the outcome (e.g., profitability). Nonperforming loans were found to have a negative and statistically significant effect on performance, while net interest margin had a positive and statistically significant effect. Other pertinent findings included a favourable effect on performance, although not statistically significant, of increasing capital adequacy, statutory liquidity, and bank size. Last but not least, banks relied heavily on interest revenue, yet non-performing loans had a detrimental effect on performance despite high liquidity levels. This seems to be the result of banks not following a sound risk management approach to drive performance and safeguard stakeholders.

Daniya et al. (2016) analyzed how mergers and acquisitions affected the financial health of a sample of deposit money banks in Nigeria from 2002 to 2008. The financial performance of the banks before and after consolidation has been evaluated using the returns on assets and the return on equity of the selected banks. T-test analysis of the study's data shows that the bank's financial

performance has improved and become more robust as a result of mergers and acquisitions, which has led to greater financial efficiency in Nigerian banks. The study suggests that if banks want to benefit from mergers and acquisitions in Nigeria's banking sector, they should be more proactive about marketing their financial products.

In the context of Nepal, in a very recent period, Ghimire (2019) analyzed the effect of mergers on the financial performance of commercial banks when Nepal Rastra Bank enacted a mandatory merger policy in 2011. The financial performance of three commercial banks that merged in 2015 was examined before and after the merger. This investigation utilized a descriptive and analytical research design. Different criteria, such as ROA, ROE, EPS, profit margin, capital sufficiency, asset quality, liquidity, and debt-to-equity ratios, were used to evaluate the performance of commercial banks. Pre-merger performance was compared to post-merger performance using a paired sample t-test to determine whether there was a significant difference between the two. This analysis found that after the merger of the banks, returns on assets, earnings per share, profit margins, and liquidity increased dramatically. After the merger, return on equity, asset quality, debt-to-equity ratio, and capital adequacy ratio all declined. After the merger, the ratio of total nonperforming assets to total loans and advances went down, which means that the value of the banks' performing assets went up.

Research Framework

The following conceptual framework serves as the basis for this investigation. The framework demonstrates that the pre-merger ratios of the sampled banks are compared with those of the post-merger period. The Conceptual Framework of the study is mentioned below:

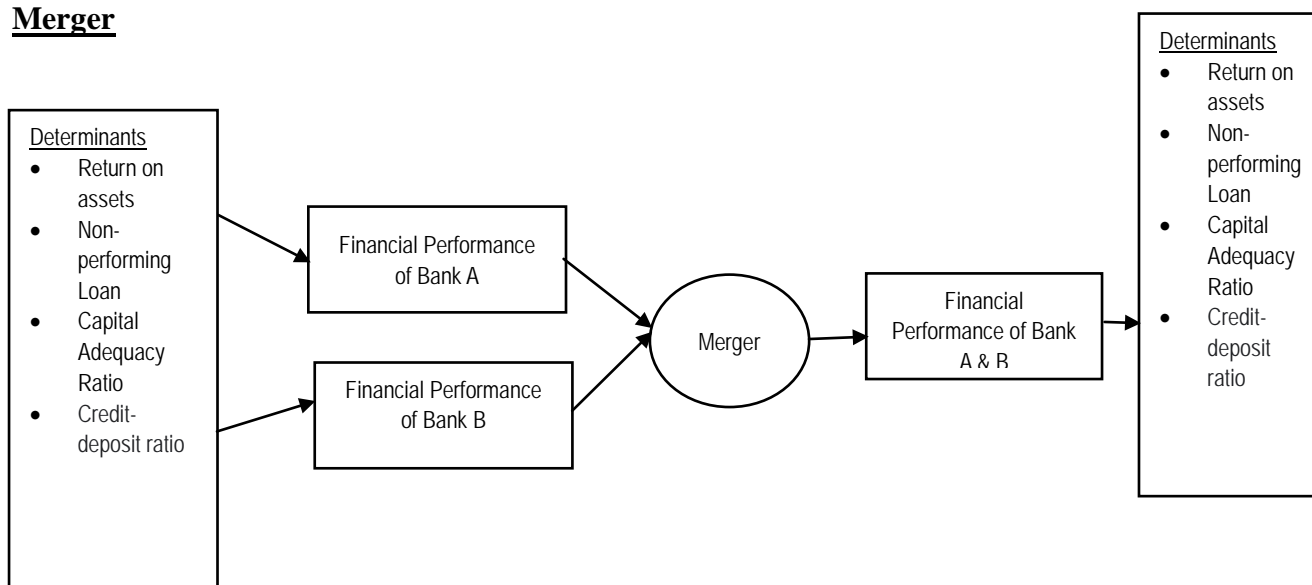**Pre- Merger**   **Post-Merger**

Figure: The conceptual framework

Introduction to Variables

Return on Assets (ROA) - The Return on Assets ratio calculates the dollar amount of profit generated per rupee in the property. Overall profit margin as a percentage of total assets is the ratio that this metric measures. Net income divided by average total assets yields returns on assets. This metric measures how effectively banks are able to turn their resources into income. A stronger indicator of a company's health is a higher ratio.

Non- Performing Loan (NPL) - Loans that have defaulted or are on the verge of default are known as Non-Performing Loans (NPLs), but there is a disagreement on what constitutes an NPL on a global scale (Bholat et al., 2016). Any bank or other financial institution with a high NPLR is likely to have a higher degree of credit risk (Kauko 2012; Akinlo & Emmanuel 2014).

Capital Adequacy Ratio (CAR) - The ratio of a bank's capital to its risk-weighted assets is known as its capital adequacy. The capital adequacy ratio (or CAR) is a key metric for governing financial health. It is the bank's capital position that provides some assurance to depositors that they will be compensated if a failure occurs. The capital adequacy is extracted from the annual report which is calculated as the ratio of regulatory capital (tier I + tier II) to total risk-weighted assets.

Credit-Deposit Ratio (CDR) - In banking parlance, the CD ratio refers to the credit-deposit ratio. It indicates how much of the deposits banks have received have been converted into loans. If the ratio is excessively high, it indicates that the bank may not have sufficient liquidity to meet any unforeseen fund needs. If the ratio is too low, though, the bank may not be making as much as it could.

III. RESEARCH METHODOLOGY

Research Design: This study examined the influence of mergers on the financial performance of commercial banks using both descriptive and analytical research methods. Descriptive research employs survey techniques of various types, as well as comparative and correlational techniques. In contrast, in analytical research, the researcher must employ facts or information that are already available and analyze them to evaluate the material critically.

Data Collection Procedure: This study relies on secondary sources of data. Annual bank reports were used to collect the financial and accounting data of two commercial banks before and after a

merger of nine years to analyze the impact of the merger on the banks' financial performance. Return on Assets (ROA), Non-Performing Loan (NPL), Capital Adequacy Ratio (CAR), and Credit-Deposit Ratio (CDR) are the primary metrics gathered.

Table 1: BFIs taken as Sample for the Study

Name of BFI (after the merger)	Bidder BFI	Merged BFIs	Date of Merger
Macchapuchhre Bank	Macchapuchhre Bank	Standard Finance	2012-07-09
NIC Asia Bank Nepal	Industrial and Commerce Bank	Bank of Asia	2013-06-30

Model Specification

The model is based on the principle of multiple linear regression. Here is the model's general equation: $Y = \beta 0 + \beta * X + \varepsilon$

Here, Y is the dependent variable, $\beta 0$ is constant, β is the coefficient of the explanatory variable, X is the explanatory variable and ε is the error term. Similarly, we begin with the following model to analyze the bank's performance using the aforementioned model.

$ROA_{PM} = \beta 0 + \beta 1 * NPL + \beta 2 * CAR + \beta 3 * CDR + \varepsilon$…………………………… (1)

$ROA_{POM} = \beta 0 + \beta 1 * NPL + \beta 2 * CAR + \beta 3 * CDR + \varepsilon$…………………………. (2)

ROA: Return on Assets

NPL: Non-Performing Loans

CAR: Capital Adequacy Ratio

CDR: Credit Deposit Ratio

ε: error term

PM: Pre- Merger

POM: Post Merger

$\beta 0$: constant (intercept)

$\beta 1, \beta 2, \beta 3$: Slope representing the degree that bank performance changes as the independent variable changes by one-unit variable.

IV. RESULTS AND ANALYSIS

Descriptive Analysis

Descriptive statistics describe the data quantitatively about the characteristics of data among the selected variables. Under descriptive statistics, the mean and standard deviation of all the selected variables are computed. The table below gives the minimum, maximum, mean and standard deviation for each variable in the pre and post-merger period for descriptive analysis. There is a lower deviation in the CAR, CDR, and NPL of the BFIs and a larger deviation in the ROA in the both pre and post-merger period as shown in table 2 and table 3.

Table 2: Descriptive Statistics of Pre-Merger Financial Ratios

	Minimum	Maximum	Mean	Std. Deviation
ROA	-.0383	.0234	.010083	.0119465
NPL	.0000	.1045	.017457	.0227685
CAR	.0835	.2475	.136574	.0362979
CDR	.6838	.9224	.829257	.0621178

Table 2 depicts that ROA ranges from -.0383 to .0234 with a mean of .010083 and a standard deviation of .0119465. NPL ranges from .0000 to .1045 with a mean of .017457 and a standard deviation of .0227685. Similarly, CAR ranges from .0835 to .2475 with a mean of .136574 and a standard deviation of .0362979. Likewise, CDR ranges from .6838 to .9224 with a mean of .829257 and a standard deviation of .0621178.

Table 3: Descriptive Statistics of Post-Merger Financial Ratios

	Minimum	Maximum	Mean	Std. Deviation
ROA	.0016	.0189	.012961	.0048372
NPL	.0000	.0666	.010606	.0164225
CAR	.1063	.2380	.142594	.0308969

CDR				
	.7462	.8978	.843806	.0440825

Table 3 depicts that ROA ranges from .0016 to .0189 with a mean of .012961 and a standard deviation of .0048372. NPL ranges from .0000 to .0666 with a mean of .010606 and a standard deviation of .0164225. Similarly, CAR ranges from .1063 to .2380 with a mean of .142594 and a standard deviation of .0308969. Likewise, CDR ranges from .7462 to .8978 with a mean of .843806 and a standard deviation of .0440825.

Inferential Analysis

On the basis of the information contained in the data matrix provided by the sample, inferential analysis is used to draw conclusions about the population's characteristics.

Table 4: Result of Paired t-test of Variables

Ratio		Mean	Standard Deviation	t- value	P- value
ROA	Pre	.010250	.0133641	1.028	.318
	Post	.012961	.0048372		
NPL	Pre	.019183	.0242948	-1.380	.185
	Post	.010606	.0164225		
CAR	Pre	.131078	.0344877	.910	.376
	Post	.142594	.0308969		
CDR	Pre	.820472	.0646850	1.330	.201
	Post	.803806	.0440825		

In Table 4, the merger of the two sample banks, the comparison between pre and post-performance is shown. The mean value of ROA has increased from 1.025% to 1.296% with a t-value of 1.028 which shows significant improvement in the ROA after the merger. NPL to total loan ratio has decreased from 1.91% TO 1.06% with a t-value of -1.380. CAR has increased from 13.10% to 14.25 % with a t-value of .910, and the C/D ratio has significantly decreased from 82.04% to 80.38% with a t-value of 1.330.

The above calculation shows that all variables are not significant, so null is accepted and the alternate hypothesis is rejected that there are no significant changes in ROA, NPL, CAR, and CDR by the merger of BFIs.

Correlation Analysis

The purpose of correlation analysis is to determine the direction and strength of the relationship between a set of variables. Using the Karl Pearson correlation coefficient, we have explained the link between the dependent variable and independent factors. The correlation coefficient value ranges from -1 to 1. When the correlation coefficient is exactly -1, the variables are said to have a perfect negative correlation. In contrast, the variables are said to have a perfect positive correlation when the correlation coefficient equals precisely +1.

Table 5: Coefficient Correlations of Pre-Merger

	ROA	NPL	CAR	CDR
ROA	1			
NPL	-.795**	1		
CAR	.229	-.324	1	
CDR	.472*	-.729**	.566**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The aforementioned table shows that there is a positive correlation, or a positive significant association, between the dependent and independent variables (ROA, CAR, and CDR). If the values of all important independent factors rise, then the values of ROA rise as well, and vice versa. The value of ROA drops when the value of NPL increases, and vice versa. This is because there is a negative correlation between NPL and ROA.

Table 6: Coefficient Correlations of Post-Merger

	ROA	NPL	CAR	CDR
ROA	1			
NPL	-.685**	1		
CAR	.163	.211	1	
CDR	.698**	-.514*	.269	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The aforementioned table shows that there is a positive correlation, or a positive significant association, between the dependent and independent variables (ROA, CAR, and CDR). If the values of all important independent factors rise, then the values of ROA rise as well, and vice versa. The value of ROA drops when the value of NPL increases, and vice versa. This is because there is a negative correlation between NPL and ROA.

Regression Model

The study used a multiple regression model to determine the influence of independent variables on the dependent variable. The dependent variable was the performance of the pre-merger banks and post-merger banks in terms of ROA, NPL, CAR, and CD ratio.

Table 7: Regression Analysis of Pre-Merger

Dependent Variable: ROA

Method: Least Squares

Included observations: 18

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	.061	.034	1.761	.094
NPL	-.513	.104	-4.938	.000
CAR	.023	.054	.434	.669
CDR	-.054	.044	-1.238	.231

Multiple R	.813
R-squared	.661
Adjusted R-squared	.607
S.E. of regression	.0074902
F-statistic	12.322
Prob (F-statistic)	.000

The R-value 0.813 shown in Table 7 indicates a high degree of correlation. This implies that there is a connection between the independent variables and the dependent variable making this study valid. The R-squared value is 66.1 percent, meaning that 66.1 percent of the dependent variable can be predicted by the independent variables (NPL, CAR, and CDR) and the remaining percent can be

explained by additional factors not included in this study. The whole model is statistically significant since the F test is significant at a level of significance of 5%. NPL, CAR, and CDR were used as predictors to regress the dependent variable ROA. We reject the null hypothesis since NPL has P-values that are less than 5% of the level of significance, indicating that NPL has an impact on the dependent variable. The p-value for CAR and CDR, on the other hand, is greater than the level of significance of 5%, indicating that we accept the null hypothesis, which states that these two independent variables have no impact on the dependent variable. Moreover, the table also depicts that every unit change in NPL will result in a -.513 unit change in ROA. Similarly, every unit change in CAR will result in a .023 unit change in ROA. Likewise, every unit change in CDR will result in a -.054 unit change in ROA.

Table 8: Regression Analysis of Post-Merger

Dependent Variable: ROA

Method: Least Squares

Included observations: 18

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-.025	.018	-1.377	.190
NPL	-.154	.060	-2.587	.022
CAR	.027	.028	.941	.363
CDR	.042	.023	1.869	.083

Multiple R	.809
R-squared	.654
Adjusted R-squared	.580
S.E. of regression	.0031357
F-statistic	8.819
Prob(F-statistic)	.002

The R-value 0.809 shown in Table 8 indicates a high degree of correlation. This implies that there is a connection between the independent variables and the dependent variable making this study valid. The R-squared value is 65.4 percent, meaning that 65.4 percent of the dependent variable can be predicted by the independent variables (NPL, CAR, and CDR) and the remaining percent can be explained by additional factors not included in this study. The whole model is statistically

significant since the F test is significant at a level of significance of 5%. NPL, CAR, and CDR were used as predictors to regress the dependent variable ROA. We reject the null hypothesis since NPL has P-values that are less than 5% of the level of significance and CDR have P-values that are less than 10% of the level of significance, indicating that NPL and CDR have an impact on the dependent variable. The p-value for CAR, on the other hand, is greater than the level of significance of 5%, indicating that we accept the null hypothesis, which states that CAR has no impact on the dependent variable. Moreover, the table also depicts that every unit change in NPL will result in a -.154 unit change in ROA. Similarly, every unit change in CAR will result in a .027 unit change in ROA. Likewise, every unit change in CDR will result in a .042 unit change in ROA.

V. CONCLUSION AND RECOMMENDATION

According to the results of this research, a merger is one of the most effective tools for a commercial bank, as all of the institution's financial performance ratios have increased after the merger. Most ratios of operating performance show a substantial change between before and after the merger; this change may be an improvement or a decline, depending on the ratio. Further regression analysis reveals that NPL have a significant negative impact on ROA across all selected independent variables (operating ratios), and their significance does not differ significantly between the pre-and post-merger periods. Alternatively, CAR has a negligible effect both before and after the merger. There is strong evidence that CDR has a positive effect on banks' financial performance in the years following a merger.

The financial health and stability of the merging entities before the merger are crucial to the success or failure of the merger. The study also mentions that, in the current climate, BFIs must merge to meet their capital requirements and maintain financial stability; thus, Mergers and Acquisitions should be done out of necessity rather than being forced into it. Mergers are hardly silver bullets that will solve all of the market's problems, though. Additionally, before implementing the merger, the banking institutions should do a sufficient evaluation to identify the proper partners. However, the scope of this research is restricted to a small subset of financial institutions over a very short period (nine years), with only four financial ratios taken into account. As a second suggestion, it is suggested that in the future, researchers study the effects of mergers by including the recently merged BFIs and taking into account more than just swap ratios.

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