CHAPTER 4
FINANCIAL PERFORMANCE ANALYSIS

4.1 Introduction

The backbone of any robust economy may be found in its banking institutions. However, banking institutions worldwide are extremely vulnerable because they rely on their customers' confidence, their reputation as a whole, and most significantly, the risky use of leverage. However unlikely it may seem, bank failures may and do occur, and the failure of even a single bank can set off a widespread economic crisis. That's why the Central Bank needs to keep a close eye on financial institutions at all times to gauge their risk profile and overall stability. That's why it's so important to keep an eye on the changes taking place in the financial system because it affects every other sector of the economy. M&A in the banking sector are such changes that require attention. When attempting to determine whether or not the merger was successful, the financial component is one of the most critical determining factors.

This chapter deals primarily with the first objective of the study, i.e., to analyze and compare the pre-merger and post-merger Financial Performance of Banks involved in the Merger of 2020. To evaluate the pre-merger and post-merger financial performance of anchor banks, paired t test has been used. Data from four years, i.e., 2 years before the merger (Financial year 2018-19 and 2019-20) and 2 years after the merger (Financial year 2020-21 and 2021-22) were analyzed.

To assess the financial performance CAMEL Model has been used. The CAMEL model is a widely acknowledged international rating framework employed by bank regulators to assess and categorize the overall financial health of a bank. It was recommended by the Basel Committee on Banking Supervision of the Bank of International Settlements (BIS) in 1988. It consists of five parameters as the acronym suggests, i.e., Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity. Banking institutions around the globe are measured against these standards to assess their operational effectiveness, financial health, and adherence to applicable regulations. Later in 1997, a sixth variable, Sensitivity to market risk, was added to the model, officially naming it the CAMELS Model. However, many developing nations continue to use

CAMEL instead of CAMEL model when assessing the performance of financial institutions. The studies that have used the CAMEL model to analyze the financial performance of banks have been discussed in detail in Section 2.1 of Chapter 2.

This chapter is sub-divided into seven parts. The first part (Section 4.1) provides an introduction to the chapter. The second part analyses the financial performance of anchor banks in terms of the capital adequacy parameter of the CAMEL Model (Section 4.2). The third section (Section 4.3) analyses the asset quality of anchor banks. The fourth part (Section 4.4) presents the pre-post financial performance of banks on management efficiency parameter. The fifth part (Section 4.5) deals with the earning ability of banks. The sixth section (Section 4.6) analyses the performance of anchor banks based on liquidity parameter. Each of these analyses is pre and post-merger. The last part (Section 4.7) summarises the chapter.

4.2 Capital Adequacy

The first parameter of the CAMEL model is Capital adequacy. Capital adequacy of a financial institution is an essential measure of its soundness. It is an indication of the health of the bank and of the management's preparedness to raise capital if necessary. For a bank, having adequate capital is crucial in maintaining the trust of its stakeholders and warding off insolvency. Four financial ratios namely capital adequacy ratio, debt-equity ratio, total advances to total assets ratio, and total equity to total assets ratio are used to measure capital adequacy.

4.2.1 Capital Adequacy Ratio (CAR):

The CAR is the safety net that prevents banks from going under, shields them from the effects of excessive leverage and bankruptcy. "It is calculated by dividing the total capital of Tier I and Tier II by the risk weighted assets" (Madura, 2008). The RBI requires Indian banks to keep a 9% Capital to Risk-Weighted Assets Ratio (CRAR) as per BASEL Norms, whereas PSBs need to maintain the ratio at 12%[1]. Investments in equity and free reserves make up Tier-I capital. Subordinate debt with a maturity of five to seven years, revaluation reserves, hybrid debt capital instruments, undisclosed

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[1] Source: RBI Master Circular No. DBR.No.BP.BC.1/21.06.201/2015-16 dated July 1, 2015

reserves, and cumulative perpetual preference shares make up Tier-II capital[1]. In order to evaluate the CAR of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in CAR of anchor banks before and after the merger.*

H_1: *There exists significant difference in CAR of anchor banks before and after the merger.*

Table 4.1(a) Capital Adequacy Ratio of all anchor banks taken together

Capital Adequacy Ratio	Time period	Mean	P value
All anchor banks taken together	Before merger	12.67	0.143
	After merger	14.52	

As shown in Table 4.1(a), the means of all the banks taken together were well above the recommended 9% level both before and after the merger. The mean CAR was high after the merger compared to before the merger. However, as the significance value is more than 0.05, we do not have enough evidence to reject the null hypothesis, i.e., there does not exist significant difference before and after the merger with respect to capital adequacy ratio.

Table 4.1(b) Capital Adequacy Ratio of individual anchor banks

Capital Adequacy Ratio	Time period	Mean	P value
Case 1 PNB	Before merger	11.93	0.450
	After merger	14.41	
Case 2 Canara Bank	Before merger	12.77	**0.008**
	After merger	**14.04**	
Case 3 Union Bank	Before merger	12.29	0.228
	After merger	13.54	
Case 4 Indian Bank	Before merger	13.66	**0.012**
	After merger	**16.12**	

An in-depth analysis of individual banks was performed (Table 4.1(b)). Similar results were found as CAR of all the four banks was higher after the merger. However, as per t test, significant difference in the values before and after merger was found in the two cases only. i.e., Case 2 (Canara Bank) and Case 4 (Indian Bank).

4.2.2. Debt Equity Ratio:

A bank's Debt Equity Ratio quantifies "the percentage of the firm's assets that are financed by debt in relation to equity" (Agarwal, 2017). It is a measurement of the

amount of financial leverage that a bank possesses. "It is calculated as the proportion of total borrowings, deposits and other liabilities to Equity, which includes equity capital and reserves & surplus" (Kemal, 2011). As the ratio rises, the safety net for banks' depositors and creditors thins.

In order to evaluate the Debt-Equity Ratio of anchor banks, the hypothesis framed was –
H_0: There exists no difference in Debt-Equity Ratio of anchor banks before and after the merger.
H_1: There exists significant difference in Debt-Equity Ratio of anchor banks before and after the merger.

Table 4.2(a) Debt Equity Ratio of all anchor banks taken together

Debt Equity Ratio	Time period	Mean	P value
All anchor banks taken together	Before merger	15.45	0.916
	After merger	15.36	

As can be seen in Table 4.2(a), the mean debt-equity ratio of all four anchor banks taken together was slightly higher before the merger as compared to the value seen after the merger. However, as the significance value is more than 0.05, we do not have enough evidence to reject the null hypothesis, i.e., there does not exist significant difference before and after merger with respect to debt-equity ratio of anchor banks.

Table 4.2(b) Debt Equity Ratio of individual anchor banks

Debt Equity Ratio	Time period	Mean	P value
Case 1 PNB	Before merger	14.31	0.583
	After merger	12.81	
Case 2 Canara Bank	Before merger	17.81	0.281
	After merger	18.07	
Case 3 Union Bank	Before merger	16.47	0.663
	After merger	15.72	
Case 4 Indian Bank	Before merger	13.22	0.098
	After merger	14.83	

With regard to individual analysis of anchor banks (Table 4.2(b)), it was seen that in half of the four merger cases, debt-equity ratio was lower post-merger. In the remaining two merger cases, i.e., Case 2 (Canara Bank) and Case 4(Indian Bank), the ratio was higher

post-merger. However, in all four anchor banks, as the significance value is more than 0.05, we do not have enough evidence to reject the null hypothesis. Hence, there does not exist significant difference before and after merger with respect to debt-equity ratio of anchor banks individually.

4.2.3. Total Advances to Total Assets Ratio:

Total Advances to Total Assets Ratio is a crucial factor in determining how aggressively banks lend. Strict lending standards, as indicated by this ratio, are associated with increased bank profitability. The said ratio is calculated as total advances to total assets (Abdulwahab and Ganguly, 2017). "Receivables are included in the total advances and the total value of assets does not include the value of assets after their revaluation" (Agarwal, 2017).

In order to evaluate the Total Advances to Total Assets Ratio of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in Total Advances to Total Assets Ratio of anchor banks before and after the merger.*

H_1: *There exists significant difference in Total Advances to Total Assets Ratio of anchor banks before and after the merger.*

Table 4.3(a) Advances to Assets Ratio of all anchor banks taken together

Advances to Assets Ratio	Time period	Mean	P value
All anchor banks taken together	Before merger	60.39	0.213
	After merger	56.06	

As shown in Table 4.3(a), the mean advances to assets ratio of the four anchor banks taken together was higher before the merger as compared to the values seen after the merger. However, as the significance value is more than 0.05, we do not have enough evidence to reject the null hypothesis, i.e., there does not exist significant difference before and after merger with respect to advances to assets ratio of anchor banks.

Table 4.3(b) Advances to Assets Ratio of Individual Anchor Banks

Advances to Assets Ratio	Time period	Mean	P value
Case 1 PNB	Before merger	57.96	0.343
	After merger	54.43	

Case 2 Canara Bank	Before merger	60.63	0.267
	After merger	56.36	
Case 3 Union Bank	Before merger	58.65	0.307
	After merger	55.40	
Case 4 Indian Bank	Before merger	**64.33**	**0.029**
	After merger	58.04	

An in-depth analysis of individual banks was performed (Table 4.3(b)). Similar results were found as advances to assets ratio of all four banks was higher before the merger. However, as per paired t test, significant difference in the values before and after merger was found in Case 4 only i.e., Indian Bank, as the p value is less than 0.05.

4.2.4. Total Equity to Total Assets Ratio:

The Equity to Asset Ratio is a specific measurement of "a company's equity in relation to its total assets" Agarwal (2017). The ratio reveals how much of the company's assets are funded by equity. If a corporation has a high ratio of equity to assets, it indicates that it has a strong financial footing and can repay its debts.

In order to evaluate the Total Equity to Total Assets Ratio of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in Total Equity to Total Assets Ratio of anchor banks before and after the merger.*

H_1: *There exists significant difference in Total Equity to Total Assets Ratio of anchor banks before and after the merger.*

Table 4.4(a) Equity to Assets Ratio of all anchor banks taken together

Equity to Assets Ratio	Time period	Mean	P value
All anchor banks taken together	Before merger	6.18	0.967
	After merger	6.20	

As shown in Table 4.4(a), the mean equity to assets ratio of the anchor banks taken together was slightly higher after the merger as compared to the values seen before the merger. However, as the significance value is more than 0.05, we do not have enough evidence to reject the null hypothesis, i.e., there does not exist significant difference before and after merger with respect to equity to assets ratio of anchor banks.

Table 4.4(b) Equity to Assets Ratio of individual anchor banks

Equity to Assets Ratio	Time period	Mean	P value
Case 1 PNB	Before merger	6.64	0.610
	After merger	7.23	
Case 2 Canara Bank	Before merger	5.32	0.278
	After merger	5.24	
Case 3 Union Bank	Before merger	5.75	0.687
	After merger	5.98	
Case 4 Indian Bank	Before merger	7.03	0.067
	After merger	6.32	

With regard to individual analysis of anchor banks (Table 4.4(b)), it was revealed that in half of the four merger cases, equity to assets ratio was lower post-merger. In the remaining two merger cases, i.e., Case 1 (PNB) and Case 3(Union Bank), the ratio was higher post-merger. However, in all four anchor banks, as the significance value is more than 0.05, we do not have enough evidence to reject the null hypothesis. Hence, there does not exist significant difference before and after merger with respect to equity to assets ratio of anchor banks individually.

Table 4.5 Summary table – Financial ratios of Capital Adequacy parameter

Ratio	PNB	Canara	Union	Indian
Capital adequacy ratio	✗	✓	✗	✓
Debt-equity ratio	✗	✗	✗	✗
Advances to assets ratio	✗	✗	✗	**O**
Total equity to assets ratio	✗	✗	✗	✗

(Compiled by the researcher)

✗ indicates no significant change post-merger

✓ indicates significant positive change post-merger

O indicates significant negative change post-merger

Capital adequacy has been measured by incorporating four financial ratios (Table 4.5). All the studied anchor banks maintained the minimum recommended figure for CAR throughout the studied period. Moreover, an increase in CAR was seen after the merger. However, significant positive change post-merger was found in two cases only, i.e., Canara Bank and Indian Bank. In half of the studied merger cases, the mean debt-equity ratio decreased after the merger but not significantly. Advances as a proportion to assets decreased in three out of four cases, implying cutting down on lending after merger or

target banks' low lending activity which is now reflected post-merger. However, only in the case of Indian Bank the post-merger change was significant. In half of the cases, equity to assets ratio increased post-merger. However, the findings revealed that there exists no significant difference before and after merger for the said ratio for all the anchor banks.

5.3 Asset Quality

The quality of the bank's assets is one of the factors that are considered when evaluating the institution's overall financial health. "The level of credit risk that a bank is exposed to as a result of the nature and quality of its loans, advances, investments, and other off-balance-sheet activities is reflected in the asset quality of the bank" (Madura, 2008). Financial institutions, and banks in particular, are defined by their ability to withstand the loss of value in their assets, therefore any deterioration in asset quality poses a threat to their ability to remain solvent. This reduction in the bank's assets has a cascading impact, as losses are ultimately deducted from capital, hence affecting the bank's ability to generate money. NPA as a percentage of total assets is the basic yardstick by which asset quality is evaluated. Further, it also helps in determining the percentage of total assets that are invested. Hence, to measure asset quality four ratios namely - Net NPA to Net Advances Ratio, Total Investment to Total Assets Ratio, Net NPA to Total Assets Ratio, and Gross NPA to Gross Advances Ratio have been used.

5.3.1. Net Non-Performing Assets (NPA) to Net Advances Ratio:
This ratio quantifies "the quality of net advances and any asset on which interest has been due for more than 90 days is considered non-performing" (Srivastava and Nigam, 2010). It demonstrates the bank's true financial load. Net NPAs are computed by subtracting provisions outstanding made on doubtful and unpaid debts at the end of the financial year from the gross NPAs.

In order to evaluate the Net NPA to Net Advances Ratio of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in Net NPA to Net Advances Ratio of anchor banks before and after the merger.*

H_1: *There exists significant difference in Net NPA to Net Advances Ratio of anchor banks before and after the merger.*

Table 4.6(a) Net NPA to Net Advances Ratio of all anchor banks taken together

Net NPA to Net Advances Ratio	Time period	Mean	P value
All anchor banks taken together	Before merger	**5.14**	**0.017**
	After merger	3.87	

As shown in Table 4.6(a), the mean Net NPA to Net Advances ratio of the four anchor banks taken together was higher before the merger as compared to the values seen after the merger. As the significance value is less than 0.05, we reject the null hypothesis and conclude that there exists significant difference before and after merger with respect to Net NPA to Net Advances ratio of anchor banks.

Table 4.6(b) Net NPA to Net Advances Ratio of individual anchor banks

Net NPA to Net Advances Ratio	Time period	Mean	P value
Case 1 PNB	Before merger	6.17	0.53
	After merger	5.26	
Case 2 Canara Bank	Before merger	**4.79**	**0.004**
	After merger	3.23	
Case 3 Union Bank	Before merger	6.17	0.066
	After merger	4.15	
Case 4 Indian Bank	Before merger	3.44	0.235
	After merger	2.82	

Similar results were found in the case of individual analysis (Table 4.6(b)). The net NPA to net advances ratio in all four cases was higher before the merger. However, significance value is less than 0.05 only in Case 2 (Canara Bank). Hence, there exists significant difference before and after the merger with respect to net NPA to net advances ratio in Canara Bank.

4.3.2. Total Investment to Total Assets Ratio:

Total investments comprise of investments in India (Government securities, other approved securities, shares, debentures & bonds, subsidiaries/joint ventures, and others) and investments outside India (Government securities, subsidiaries/joint ventures, and other investments)[2]. Total assets include cash in hand, balance with RBI, balance with banks, investments, advances, fixed assets, and other assets[3]. The ratio indicates how much of the bank's total assets are invested in things that don't directly contribute to the

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[2] Source: RBI Master Circular No. DBOD.BP.BC. 8/21.04.141/2013-14 dated July 1, 2013
[3] Source: RBI Database on Indian Economy

bank's main income, as opposed to being used to provide loans to customers. "It is calculated by dividing total investments made by the total assets of a firm" (Paul, 2007). A low investment-to-asset ratio is indicative of an aggressive bank, as a high ratio suggests that the bank has conservatively maintained a high cover of investment to shield against the danger of NPAs. This reduces banks' profits since interest revenue from investments is substantially lower than interest income obtained from extending credit.

In order to evaluate the Total Investment to Total Assets Ratio of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in Total Investment to Total Assets Ratio of anchor banks before and after the merger.*

H_1: *There exists significant difference in Total Investment to Total Assets Ratio of anchor banks before and after the merger.*

Table 4.7(a) Investment to Assets Ratio of all anchor banks taken together

Investment to Assets Ratio	Time period	Mean	P value
All anchor banks taken together	Before merger	25.510	0.524
	After merger	27.455	

As shown in Table 4.7(a), when comparing values before and after the merger of the four anchor banks taken together, we discovered that the mean Total Investment to Total Assets Ratio was greater after the merger. However, we do not have enough evidence to reject null hypothesis from t test results (significance value > 0.05). Hence, Total Investment to Total Assets Ratio of anchor banks before and after the merger doesn't differ significantly.

Table 4.7(b) Investment to Assets Ratio of Individual Anchor Banks

Investment to Assets Ratio	Time period	Mean	P value
Case 1 PNB	Before merger	27.51	0.580
	After merger	29.74	
Case 2 Canara Bank	Before merger	23.18	0.786
	After merger	22.83	
Case 3 Union Bank	Before merger	26.59	0.310
	After merger	30.14	
Case 4 Indian Bank	Before merger	24.73	0.533
	After merger	27.09	

After the analysis of individual banks (Table 4.7(b)), we found similar results. In the majority of banks, the investment to assets ratio was higher after merger. Only, in Case 2 (Canara Bank), the ratio was higher before merger. However, in all four anchor banks, as the significance value is more than 0.05, we do not have enough evidence to reject the null hypothesis. Hence, there does not exist significant difference before and after merger with respect to investment to asset ratio of anchor banks individually.

4.3.3. Net NPA to Total Assets Ratio:

In a scenario in which the management has not made provisions for loss on NPAs, this ratio is used to evaluate the quality of the assets. In this context, the Net NPAs are evaluated based on their percentage contribution to the overall assets. The ratio indicates the calibre of the improvements made, and hence, a lower value indicates a higher quality of advances made.

In order to evaluate the Net NPA to Total Assets Ratio of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in Net NPA to Total Assets Ratio of anchor banks before and after the merger.*

H_1: *There exists significant difference in Net NPA to Total Assets Ratio of anchor banks before and after the merger.*

Table 4.8(a) Net NPA to Total Assets Ratio of all anchor banks taken together

Net NPA to Total Assets Ratio	Time period	Mean	P value
All anchor banks taken together	Before merger	**3.085**	**0.046**
	After merger	2.155	

As shown in Table 4.8(a), the mean Net NPA to Total Assets ratio of all four anchor banks taken together was higher before the merger as compared to the values seen after the merger. As the significance value is less than 0.05, we reject the null hypothesis and conclude that there exists significant difference before and after merger with respect to Net NPA to Total Assets ratio of anchor banks.

Table 4.8(b) Net NPA to Total Assets Ratio of individual anchor banks

Net NPA to Total Assets Ratio	Time period	Mean	P value
Case 1 PNB	Before merger	3.58	0.088
	After merger	2.86	
Case 2 Canara Bank	Before merger	**2.91**	**0.049**
	After merger	1.82	
Case 3 Union Bank	Before merger	3.63	0.114
	After merger	2.30	
Case 4 Indian Bank	Before merger	2.21	0.155
	After merger	1.64	

Similar results were found in the case of individual analysis (Table 4.8(b)). The net NPA to total assets ratio in all four cases was higher before the merger. However, significance value is less than 0.05 only in Case 2 (Canara Bank). Hence, there exists significant difference before and after the merger with respect to net NPA to total assets ratio of Canara Bank.

4.3.4. Gross NPA to Gross Advances Ratio:

Assets of the firm in the form of total loans made that are NPAs as per the RBI criteria as of the date of the Balance Sheet make up Gross NPAs. "Gross NPAs are calculated as a percentage of Gross Advances in this ratio" (Bhole and Mahakud, 2011). A low ratio indicates the bank has made high-quality loans and advances.

In order to evaluate the Gross NPA to Gross Advances Ratio of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in Gross NPA to Gross Advances Ratio of anchor banks before and after the merger.*

H_1: *There exists significant difference in Gross NPA to Gross Advances Ratio of anchor banks before and after the merger.*

Table 4.9(a) Gross NPA to Gross Advances Ratio of all anchor banks taken together

Gross NPA to Gross Advances Ratio	Time period	Mean	P value
All anchor banks taken together	Before merger	11.21	0.535
	After merger	10.69	

As shown in Table 4.9(a), when comparing values before and after the merger of the four anchor banks taken together, it was seen that the mean Gross NPA to Gross Advances Ratio was greater before the merger compared to the after merger value. However, with regard to the said ratio, t test concludes that we cannot reject the null hypothesis, since the significance value is more than 0.05. Hence the mean Gross NPA to Gross Advances Ratio of anchor banks don't differ significantly before and after the merger.

Table 4.9(b) Gross NPA to Gross Advances Ratio of individual anchor banks

Gross NPA to Gross Advances Ratio	Time period	Mean	P value
Case 1 PNB	Before merger	14.85	0.171
	After merger	12.95	
Case 2 Canara Bank	Before merger	8.43	0.619
	After merger	8.22	
Case 3 Union Bank	Before merger	14.56	0.253
	After merger	12.42	
Case 4 Indian Bank	Before merger	6.99	0.164
	After merger	9.16	

The individual case analysis was done (Table 4.9(b)). It was revealed that in the majority of the cases, the gross NPA to gross advances were higher before the merger. Only in Case 4 (Indian Bank), the ratio was higher after the merger. However, there does not exist significant difference in the values of all four merger cases, before and after, with respect to the said ratio as per t test.

Table 4.10 Summary table – Financial ratios of Asset Quality parameter

Ratio	PNB	Canara	Union	Indian
Net NPA to net advances ratio	✗	**O**	✗	✗
Investments to assets ratio	✗	✗	✗	✗
Net NPA to total assets ratio	✗	**O**	✗	✗
Gross NPA to gross advances ratio	✗	✗	✗	✗

(Compiled by the researcher)

✗ indicates no significant change post-merger

✓ indicates significant positive change post-merger

O indicates significant negative change post-merger

Asset quality has been measured using four financial ratios. The Net NPA to Net Advances Ratio and Net NPA to Total Assets Ratio of the anchor banks differed between the pre and post-merger periods. The above mentioned ratios were much higher before the merger, reflecting the increasing number of bad loans that were made before the two banks merged. Furthermore, it revealed the financial strain that the anchor banks were under before the merger. Thus, we can deduce that the anchor bank's Net NPAs may have been reduced through mergers. However, the post-merger change was significant only in the case of Canara Bank. Gross NPA to Gross Advances Ratio also decreased post-merger, except Indian Bank, however, the change was not significant in all four cases. In the majority of the cases, Total Investment to Total Assets Ratio also increased post-merger. However, there does not exist significant difference post-merger as per t test.

4.4 Management Efficiency

Management Efficiency dimension reflects the top management's prowess in recognizing, quantifying, monitoring, and resolving risks confronting the financial institution. The key banking decisions are made by management based on their assessment of risk. It ensures the organization's success by defining its vision & mission and guiding it toward its objectives. Management Efficiency refers to the degree to which top management can set and maintain standards, make predictions, plan, demonstrate leadership, create new ideas, and effectively manage the organization. Policies and procedures for managing risks are used as benchmarks for efficient management. The financial ratios used in this study to measure it are Total Advances to Total Deposits Ratio, Business per Employee, Profit per Employee, Total Expenditure to Total Income Ratio, and Total Income to Total Assets Ratio.

4.4.1. Total Advances to Total Deposits Ratio:

This ratio is a vital indicator of a bank's financial soundness because it represents the percentage of a bank's core funds that are put into its primary banking activity, i.e., lending. In order to make profits and cover the interest on the deposits, advances are required. This ratio is used to assess the effectiveness of the bank's management in turning customer deposits into high-yield receivables. If the ratio is high, the bank relies heavily on deposits to fund its loans, whereas if it is low, deposits play a lesser role. The regulator does not specify a target ratio, but an extremely low percentage suggests that

the bank is not making the most of its assets. On the contrary, if the ratio is greater than a critical threshold, it shows that the bank's resources are being stretched causing an asset-liability mismatch, which in turn implies a weak balance sheet. Hence, it is essential for banks to maintain a balance and not to overstretch much. "This ratio is calculated by dividing total advances by the total deposits" (Agarwal, 2017).

In order to evaluate the Total Advances to Total Deposits Ratio of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in Total Advances to Total Deposits Ratio of anchor banks before and after the merger.*

H_1: *There exists significant difference in Total Advances to Total Deposits Ratio of anchor banks before and after the merger.*

Table 4.11(a) Total Advances to Total Deposits Ratio of all anchor banks taken together

Total Advances to Total Deposits Ratio	Time period	Mean	P value
All anchor banks taken together	Before merger	70.940	0.064
	After merger	64.210	

As shown in Table 4.11(a), when comparing values before and after the merger of anchor banks taken together, we discovered that the mean Total Advances to Total Deposits Ratio was greater before the merger compared to the after merger figures. However, with regard to the said ratio, t test concludes that we cannot reject the null hypothesis, since the significance value is more than 0.05. Hence the mean Total Advances to Total Deposits Ratio of anchor banks don't differ significantly before and after the merger.

Table 4.11(b) Total Advances to Total Deposits Ratio of individual anchor banks

Total Advances to Total Deposits Ratio	Time period	Mean	P value
Case 1 PNB	Before merger	67.41	0.199
	After merger	62.23	
Case 2 Canara Bank	Before merger	70.25	0.189
	After merger	63.99	
Case 3 Union Bank	Before merger	70.65	0.073
	After merger	64.00	
Case 4 Indian Bank	Before merger	75.46	0.116
	After merger	66.60	

After the analysis of individual banks (Table 4.11(b)), we found similar results. In all four cases of bank merger, the advances to deposits ratio were higher before the merger. However, in all four anchor banks, as the significance value is more than 0.05, we do not have enough evidence to reject the null hypothesis. Hence, there does not exist significant difference before and after merger with respect to the said ratio of anchor banks individually.

4.4.2. Business per Employee:

The business per employee ratio demonstrates employee productivity and the effectiveness of the bank's total employees in bringing in business is evaluated by this ratio. "It is calculated by dividing the company's total business by the number of people employed by the company. Here, business implies the sum of all advances and deposits made by the bank in a financial year" (Srivastava and Nigam, 2010). When the ratio of businesses to employees is high, it indicates that the bank is being managed effectively and efficiently, whereas when it is low, it might be an indication of low productivity. Indicative of efficient banking management, a high ratio is always to be desired.

In order to evaluate the Business per Employee of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in Business per Employee of anchor banks before and after the merger.*

H_1: *There exists significant difference in Business per Employee of anchor banks before and after the merger*

Table 4.12(a) Business per Employee of all anchor banks taken together

Business per Employee	Time period	Mean	P value
All anchor banks taken together	Before merger	1935.60	**0.042**
	After merger	**2042.37**	

As shown in Table 4.12(a), when comparing the combined values of the four anchor banks, before and after the merger, we discovered that the mean Business per Employee improved after the merger. As the significance value is less than 0.05, we reject the null hypothesis, i.e., there exists significant difference before and after merger with respect to Business per Employee of anchor banks.

Table 4.12(b) Business per Employee of individual anchor banks

Business per Employee	Time period	Mean	P value
Case 1 PNB	Before merger	1747.00	0.147
	After merger	1913.00	
Case 2 Canara Bank	Before merger	1734.90	0.220
	After merger	1902.50	
Case 3 Union Bank	Before merger	1942.50	**0.015**
	After merger	**1985.50**	
Case 4 Indian Bank	Before merger	2318.00	0.094
	After merger	2368.50	

An in-depth analysis of individual banks was performed (Table 4.12(b)). Similar results were found as business per employee of all four banks was higher after the merger. However, as per paired t test, significant difference in the values before and after merger was found in Case 3 only i.e., Union Bank, as p value is less than 0.05.

4.4.3. Profit per Employee:

This metric assesses how productive employees are at the branch level. It provides useful data for evaluating the branch network of a bank and its true effectiveness. It indicates the net profit made per person employed in the firm. High ratios are a strong indication of competent management.

In order to evaluate the Profit per Employee of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in Profit per Employee of anchor banks before and after the merger.*

H_1: *There exists significant difference in Profit per Employee of anchor banks before and after the merger.*

Table 4.13(a) Profit per Employee of all anchor banks taken together

Profit per Employee	Time period	Mean	P value
All anchor banks taken together	Before merger	-3.375	**0.009**
	After merger	**5.500**	

As shown in Table 4.13(a), when comparing values before and after the merger of the four anchor banks taken together, we discovered that the mean Profit per Employee improved after the merger. As the significance value is less than 0.05, we reject the null

hypothesis, i.e., there exists significant difference before and after merger with respect to Profit per Employee of anchor banks.

Table 4.13(b) Profit per Employee of individual anchor banks

Profit per Employee	Time period	Mean	P value
Case 1 PNB	Before merger	-7.00	0.389
	After merger	3.00	
Case 2 Canara Bank	Before merger	-1.50	0.386
	After merger	5.00	
Case 3 Union Bank	Before merger	-8.00	0.070
	After merger	5.50	
Case 4 Indian Bank	Before merger	3.00	0.058
	After merger	8.50	

The individual case analysis was done (Table 4.13(b)). It was revealed that in all four anchor banks, the profit per employee was higher after the merger. However, there does not exist significant difference in the values of all four merger case, before and after, with respect to the said ratio as per t test.

4.4.4. Total Expenditure to Total Income Ratio:

In order to maximize earnings, every financial institution is extremely careful with how much money it spends. Keeping an eye on costs can help the firm provide a better return to its equity shareholders. If the ratio is low, it indicates that the bank is being efficiently run and that profits will be high. Variations in the ratio might also serve as an early warning sign of trouble. In general, an increasing ratio over time indicates that expenses are growing faster than income. It is calculated by "dividing total expenditure by the total income, whereas, total income includes both interest income as well as non-interest income" (Nimalathasan, 2008).

In order to evaluate the Total Expenditure to Total Income Ratio of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in Total Expenditure to Total Income Ratio of anchor banks before and after the merger.*

H_1: *There exists significant difference in Total Expenditure to Total Income Ratio of anchor banks before and after the merger.*

Table 4.14(a) Expenditure to Income Ratio of all anchor banks taken together

Expenditure to Income Ratio	Time period	Mean	P value
All anchor banks taken together	Before merger	**103.705**	**0.018**
	After merger	93.935	

As shown in Table 4.14(a), the mean Expenditure to Income ratio of the four anchor banks taken together was higher before the merger as compared to the values seen after the merger. As the significance value is less than 0.05, we reject the null hypothesis, i.e., there exists significant difference before and after merger with respect to Expenditure to Income ratio of anchor banks.

Table 4.14(b) Expenditure to Income Ratio of individual anchor banks

Expenditure to Income Ratio	Time period	Mean	P value
Case 1 PNB	Before merger	108.23	0.356
	After merger	96.44	
Case 2 Canara Bank	Before merger	101.64	0.396
	After merger	93.27	
Case 3 Union Bank	Before merger	107.23	0.135
	After merger	92.85	
Case 4 Indian Bank	Before merger	97.71	0.082
	After merger	93.17	

After the analysis of individual banks (Table 4.14(b)), we found similar results. In all four cases of bank merger, the expenditure to income ratio was higher before the merger. However, in all four anchor banks, as the significance value is more than 0.05, we do not have enough evidence to reject the null hypothesis. Hence, there do not exist significant difference before and after merger with respect to the said ratio of anchor banks individually.

4.4.5. Total Income to Total Assets Ratio:

This ratio is also known as Asset Turnover Ratio. How quickly a bank generates income from its assets is reflected in what's called "Asset Turnover," which takes into account the bank's interest and non-interest income. It is indicative of a bank's income generating capability. If the ratio is high, it means the bank is making good use of its asset base.

In order to evaluate the Total Income to Total Assets Ratio of anchor banks, the hypothesis framed was –

H₀: There exists no difference in Total Income to Total Assets Ratio of anchor banks before and after the merger.

H₁: There exists significant difference in Total Income to Total Assets Ratio of anchor banks before and after the merger.

Table 4.15(a) Income to Assets Ratio of all anchor banks taken together

Income to Assets Ratio	Time period	Mean	P value
All anchor banks taken together	Before merger	7.715	0.315
	After merger	7.085	

As shown in Table 4.15(a), when comparing values before and after the merger of the four banks taken together, we discovered that the mean Income to Assets Ratio was slightly higher before the merger. However, t test concludes that we cannot reject the null hypothesis, since the significance value is more than 0.05. Hence, statistically the mean Income to Assets Ratio of anchor banks doesn't differ significantly before and after the merger.

Table 4.15(b) Income to Assets Ratio of individual anchor banks

Income to Assets Ratio	Time period	Mean	P value
Case 1 PNB	Before merger	7.58	0.401
	After merger	7.02	
Case 2 Canara Bank	Before merger	7.76	0.249
	After merger	7.16	
Case 3 Union Bank	Before merger	7.76	0.285
	After merger	7.12	
Case 4 Indian Bank	Before merger	7.75	0.342
	After merger	7.01	

The individual analysis of anchor banks was done (Table 4.15(b)). Similar results were found in all four cases of bank merger as the income to assets ratio were higher before the merger. However, in all four anchor banks, as the significance value is more than 0.05, we do not have enough evidence to reject the null hypothesis. Hence, there does not exist significant difference before and after merger with respect to the said ratio of anchor banks individually.

Table 4.16 Summary table – Financial ratios of Management Efficiency parameter

Ratio	PNB	Canara	Union	Indian
Advances to deposits ratio	✕	✕	✕	✕
Business per employee	✕	✕	✓	✕
Profit per employee	✕	✕	✕	✕
Expenditure to income ratio	✕	✕	✕	✕
Income to asset ratio	✕	✕	✕	✕

(Compiled by the researcher)

✕ indicates no significant change post-merger

✓ indicates significant positive change post-merger

O indicates significant negative change post-merger

Management efficiency has been measured using five financial ratios. The total advance to deposits ratio decreased after the merger implying the banks' low reliance on deposits to fund its loans. However, the change was not significant in all the four merger cases. As the amalgamating banks' operations have been absorbed into the anchor banks, the anchor banks have put forth their best efforts to turn these operations into profitable ones, as seen by rising Profits per Employee and Business per Employee ratios post-merger. Significant positive change post-merger was found in business per employee in Canara Bank. While the anchor banks' expenditures increased after the merger due to the inclusion of the target banks' expenditure, the anchor banks had successfully managed and improved their Total Expenditure to Total Income Ratio as the ratio decreased post-merger. However, no significant difference was found in Total Expenditure to Total Income Ratio as per t test results in all the cases individually. The income to asset ratio which is indicative of a bank's income generating capability decreased slightly in all four cases. However, the change was not significant.

4.5 Earnings

The bank's capacity to maintain and increase its earnings in the future is reflected in the quality of its earnings, and the quality of its earnings in turn reflects the bank's competence in the future. It's a measure of how well banks are doing financially. Profitability and shareholder return are the primary goals of any financial institution. The bank's ability to pay dividends, keep its capital levels stable, expansion and diversification opportunities, and remain competitive it all depends on the strength of its earnings. Stakeholders' faith would be bolstered by a strong profits performance.

Earnings are measured by financial ratios namely Return on Equity, Net Interest Margin (NIM), Interest Income to Total Income, and Interest Income to Total Assets.

4.5.1. Return on Equity (ROE):

ROE quantifies the profit made by the bank on the investment made by its shareholders. This ratio compares a bank's net income to its average shareholders' equity and provides insight into its profitability. In general, a greater ratio indicates that the bank is more profitable and is effectively using its equity base to generate a larger return for its investors.

In order to evaluate the ROE of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in ROE of anchor banks before and after the merger.*

H_1: *There exists significant difference in ROE of anchor banks before and after the merger.*

Table 4.17(a) ROE of all anchor banks taken together

ROE	Time period	Mean	P value
All anchor banks taken together	Before merger	-5.41	0.066
	After merger	6.315	

As shown in Table 4.17(a), the mean ROE of the four anchor banks taken together was higher after the merger as compared to the values seen before the merger. However, t test concludes that we cannot reject the null hypothesis, since the significance value is more than 0.05. Hence, statistically, the mean ROE of anchor banks don't differ significantly before and after the merger.

Table 4.17(b) ROE of individual anchor banks

ROE	Time period	Mean	P value
Case 1 PNB	Before merger	-11.30	0.416
	After merger	3.15	
Case 2 Canara Bank	Before merger	-2.47	0.344
	After merger	6.66	
Case 3 Union Bank	Before merger	-10.52	**0.024**
	After merger	**6.21**	
Case 4 Indian Bank	Before merger	2.66	**0.005**
	After merger	**9.23**	

After the analysis of individual banks (Table 4.17(b)), we found similar results. In all four cases of bank merger, the ROE was higher after the merger. However, as per t test results, significant difference in the values before and after merger were found in the two cases only. i.e., Case 3 (Union Bank) and Case 4 (Indian Bank) as p value is less than 0.05.

4.5.2. Net Interest Margin (NIM):

Banks' ability to maintain a healthy NIM is a crucial indicator of their financial performance. "As a percentage of total assets, it represents the gap between interest earned and interest expended" (Nimalathasan, 2008). It reveals the bank's capacity to maintain a favourable interest rate spread between deposits and advances.

In order to evaluate the NIM of anchor banks, the hypothesis framed was –
H_0: *There exists no difference in NIM of anchor banks before and after the merger.*
H_1: *There exists significant difference in NIM of anchor banks before and after the merger.*

Table 4.18(a) Net Interest Margin of all anchor banks taken together

NIM	Time period	Mean	P value
All anchor banks taken together	Before merger	2.245	0.359
	After merger	2.545	

As shown in Table 4.18(a), when comparing values before and after the merger of the four banks taken together, we discovered that the mean NIM was slightly higher after the merger. However, t test concludes that we cannot reject the null hypothesis, since the significance value is more than 0.05. Hence, statistically, the mean NIM of anchor banks doesn't differ significantly before and after the merger.

Table 4.18(b) NIM of individual anchor banks

NIM	Time period	Mean	P value
Case 1 PNB	Before merger	2.20	0.70
	After merger	2.38	
Case 2 Canara Bank	Before merger	2.03	0.546
	After merger	2.22	
Case 3 Union Bank	Before merger	2.13	0.372
	After merger	2.96	
Case 4 Indian Bank	Before merger	2.66	0.500
	After merger	9.23	

The individual analysis of anchor banks was done (Table 4.18(b)). Similar results were found in all four cases of bank merger as the NIM was higher after the merger. However, in all four anchor banks, as the significance value is more than 0.05, we do not have enough evidence to reject the null hypothesis. Hence, there does not exist significant difference before and after merger with respect to the said ratio of anchor banks individually.

4.5.3. Interest Income to Total Income:

This ratio assesses the percentage of a bank's income that comes from its lending activities. Banks rely heavily on interest income as a means of generating cash flow. A high ratio is preferred by banks since it indicates stable income and reflects the money the bank earns from its day-to-day activities.

In order to evaluate the Interest Income to Total Income of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in Interest Income to Total Income of anchor banks before and after the merger.*

H_1: *There exists significant difference in Interest Income to Total Income of anchor banks before and after the merger.*

Table 4.19(a) Interest Income to Total Income of all anchor banks taken together

Interest Income to Total Income	Time period	Mean	P value
All anchor banks taken together	Before merger	87.540	0.112
	After merger	84.575	

As shown in Table 4.19(a), the mean Interest Income to Total Income of all four banks taken together was higher before the merger as compared to the values seen after the merger. However, t test concludes that we cannot reject the null hypothesis, since the significance value is more than 0.05. Hence, statistically the mean Interest Income to Total Income of anchor banks don't differ significantly before and after the merger.

Table 4.19(b) Interest Income to Total Income of individual anchor banks

Interest Income to Total Income	Time period	Mean	P value
Case 1 PNB	Before merger	86.36	0.800
	After merger	86.09	
Case 2 Canara Bank	Before merger	**86.95**	**0.019**
	After merger	81.36	
Case 3 Union Bank	Before merger	88.00	0.071
	After merger	85.14	
Case 4 Indian Bank	Before merger	88.83	0.269
	After merger	85.72	

An in-depth analysis of individual banks was done (Table 4.19(b)) and we found similar results. In all four cases of bank merger, the interest income to total income was higher before the merger. However, as per t test results, significant difference in the values before and after merger was found in Case 2 only (Canara Bank) as p value is less than 0.05.

4.5.4. Interest Income to Total Assets:

This ratio assesses "the income that comes from its lending activities as a percentage of total assets in a financial year. It measures how much interest is earned in relation to the total assets of the bank" (Bhole and Mahakud, 2011).

In order to evaluate the Interest Income to Total Assets of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in Interest Income to Total Assets of anchor banks before and after the merger.*

H_1: *There exists significant difference in Interest Income to Total Assets of anchor banks before and after the merger.*

Table 4.20(a) Interest Income to Total Assets of all anchor banks taken together

Interest Income to Total Assets	Time period	Mean	P value
All anchor banks taken together	Before merger	6.995	0.207
	After merger	6.195	

As shown in Table 4.20(a), the mean Interest Income to Total Assets of all the four banks taken together was higher before the merger. However, t test concludes that we cannot reject the null hypothesis, since the significance value is more than 0.05. Hence,

statistically the mean Interest Income to Total Assets of anchor banks don't differ significantly before and after the merger.

Table 4.20(b) Interest Income to Total Assets of individual anchor banks

Interest Income to Total Assets	Time period	Mean	P value
Case 1 PNB	Before merger	6.68	0.370
	After merger	6.01	
Case 2 Canara Bank	Before merger	7.02	0.072
	After merger	6.05	
Case 3 Union Bank	Before merger	7.03	0.273
	After merger	6.33	
Case 4 Indian Bank	Before merger	7.23	0.147
	After merger	6.38	

The individual analysis of anchor banks was done (Table 4.20(b)). Similar results were found in all four cases of bank merger as the interest income to total assets was higher before the merger. However, in all four anchor banks, as the significance value is more than 0.05, we do not have enough evidence to reject the null hypothesis. Hence, there does not exist significant difference before and after merger with respect to the said ratio of anchor banks individually.

Table 4.21 Summary table – Financial ratios of Earnings parameter

Ratio	PNB	Canara	Union	Indian
ROE	✕	✕	✓	✓
NIM	✕	✕	✕	✕
Interest income to total income	✕	**O**	✕	✕
Interest income to total assets	✕	✕	✕	✕

(Compiled by the researcher)

✕ indicates no significant change post-merger

✓ indicates significant positive change post-merger

O indicates significant negative change post-merger

Earnings ability has been measured using four financial ratios. Banks were able to maintain a favourable interest rate spread between deposits and advances as indicated by the increase in the NIM after merger. However, the difference after the merger was not significant in all the cases. NIM appears to have had a favourable effect on ROE because, after the merger, anchor banks were able to efficiently mobilize deposits at a

lower rate and advance them to customers to produce better returns as against the cost of deposits. Thereby, allowing the anchor banks to generate more revenues post-merger to boost shareholder equity. Union Bank and Union Bank showed significant positive change post-merger in ROE. However, Interest Income to Total Income and Interest Income to Total Assets decreased post-merger, suggesting that banks, in the period following the merger, may have prioritized growing fee-based income over the conventional interest income generated from managing funds. Although its performance has deteriorated since the merger, suggesting the bank is placing more emphasis on non-lending activities to generate income, this ratio is indicative of income consistency and represents the bank's income from its other banking activities. However, significant difference was found in Canara Bank only in interest income to total income. Also, no significant difference exists with respect to Interest Income to Total Assets as per t test results in all four cases.

4.6 Liquidity

"The ability of a bank to meet its financial obligations as they come due is represented by liquidity" (Agarwal, 2017), the fifth and final component of the CAMEL model. Each financial institution needs to keep enough cash on hand to pay its dues on schedule. Banks need to keep their assets liquid so that they can meet the needs of their stakeholders, and to avoid a liquidity crisis, which could have a negative effect on their financial performance. The financial ratios used in this study to measure liquidity are Cash Deposit Ratio, Liquid Assets to Total Assets Ratio, and Liquid Assets to Total Deposits Ratio.

4.6.1. Cash Deposit Ratio:

This ratio analyses the bank's cash position relative to the deposits it has earned and is thus a crucial metric for liquidity analysis. Liquid assets such as cash provide a comprehensive view of the bank's liquidity position. If a bank keeps too much cash on hand without investing it, its profits quality could be jeopardized. This is why keeping a healthy cash-to-deposit ratio is so important.

In order to evaluate the Cash Deposit Ratio of anchor banks, the hypothesis framed was –

H₀: There exists no difference in Cash Deposit Ratio of anchor banks before and after the merger.

H₁: There exists significant difference in Cash Deposit Ratio of anchor banks before and after the merger.

Table 4.22(a) Cash Deposit Ratio of all anchor banks taken together

Cash Deposit Ratio	Time period	Mean	P value
All anchor banks taken together	Before merger	4.415	0.956
	After merger	4.455	

As shown in Table 4.22(a), when comparing values before and after the merger, we discovered that the mean Cash Deposit Ratio of all the four anchor banks taken together was slightly higher after the merger. However, t test concludes that we cannot reject the null hypothesis, since the significance value is more than 0.05. Hence, statistically the mean Cash Deposit Ratio of anchor banks doesn't differ significantly before and after the merger.

Table 4.22(b) Cash Deposit Ratio of individual anchor banks

Cash Deposit Ratio	Time period	Mean	P value
Case 1 PNB	Before merger	5.10	0.126
	After merger	4.45	
Case 2 Canara Bank	Before merger	4.30	0.863
	After merger	4.50	
Case 3 Union Bank	Before merger	4.73	0.507
	After merger	4.28	
Case 4 Indian Bank	Before merger	3.51	0.401
	After merger	4.58	

With regard to individual analysis of anchor banks (Table 4.22(b)), it was revealed that in half of the four merger cases, cash deposit ratio was lower post-merger. In the remaining two merger cases, i.e., Case 1 (PNB) and Case 3(Union Bank), the ratio was higher post-merger. However, in all four anchor banks, as the significance value is more than 0.05, we do not have enough evidence to reject the null hypothesis. Hence, there does not exist significant difference before and after merger with respect to cash deposit ratio of anchor banks individually.

4.6.2. Liquid Assets to Total Assets Ratio:

This ratio is defined as "the percentage of a bank's total assets that can be quickly and readily converted into cash" (Agarwal, 2017). To calculate the ratio, liquid assets are divided by the total assets. Cash in hand, deposits at the RBI and other Indian banks, deposits at foreign institutions, and money at call notice are all examples of liquid assets.

In order to evaluate the Liquid Assets to Total Assets Ratio of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in Liquid Assets to Total Assets Ratio of anchor banks before and after the merger.*

H_1: *There exists significant difference in Liquid Assets to Total Assets Ratio of anchor banks before and after the merger.*

Table 4.23(a) Liquid Assets to Total Assets Ratio of all anchor banks taken together

Liquid Assets to Total Assets Ratio	Time period	Mean	P value
All anchor banks taken together	Before merger	8.52	0.266
	After merger	10.91	

As shown in Table 4.23(a), when comparing values before and after the merger, we discovered that the mean Liquid Assets to Total Assets Ratio of the four anchor banks taken together was higher after the merger. However, t test concludes that we cannot reject the null hypothesis, since the significance value is more than 0.05. Hence, statistically the mean Liquid Assets to Total Assets Ratio of anchor banks don't differ significantly before and after the merger.

Table 4.23(b) Liquid Assets to Total Assets Ratio of individual anchor banks

Liquid Assets to Total Assets Ratio	Time period	Mean	p value
Case 1 PNB	Before merger	9.43	0.983
	After merger	9.46	
Case 2 Canara Bank	Before merger	9.47	**0.030**
	After merger	**15.15**	
Case 3 Union Bank	Before merger	9.36	0.538
	After merger	8.97	
Case 4 Indian Bank	Before merger	5.82	0.409
	After merger	10.06	

After the analysis of individual banks (Table 4.23(b)), we found similar results. In majority of banks, the liquid assets to total assets ratio were higher after merger. Only, in Case 3 (Union Bank), the ratio was higher before merger. However, significant difference, before and after the merger, with respect to the ratio was found only in Case 2 (Canara Bank) as the p value is less than 0.05.

4.6.3. Liquid Assets to Total Deposits Ratio:

The ratio shows "the proportion of deposits that are readily available in the form of cash or other liquid assets and measures the liquidity of the bank's depositors' money" (Agarwal, 2017). A greater ratio value implies that the bank is liquid, whereas a lower value indicates the opposite.

In order to evaluate the Liquid Assets to Total Deposits Ratio of anchor banks, the hypothesis framed was –

H_0: *There exists no difference in Liquid Assets to Total Deposits Ratio of anchor banks before and after the merger.*

H_1: *There exists significant difference in Liquid Assets to Total Deposits Ratio of anchor banks before and after the merger.*

Table 4.24(a) Liquid Assets to Total Deposits Ratio of all anchor banks taken together

Liquid Assets to Total Deposits Ratio	Time period	Mean	P value
All anchor banks taken together	Before merger	10.01	0.259
	After merger	12.47	

As shown in Table 4.24(a), the mean Liquid Assets to Total Deposits Ratio of the four anchor banks taken together was higher before the merger. However, t test concludes that we cannot reject the null hypothesis, since the significance value is more than 0.05. Hence, statistically the mean Liquid Assets to Total Deposits Ratio of anchor banks don't differ significantly before and after the merger.

Table 4.24(b) Liquid Assets to Total Deposits Ratio of individual anchor banks

Liquid Assets to Total Deposits Ratio	Time period	Mean	P value
Case 1 PNB	Before merger	10.97	0.894
	After merger	10.81	
Case 2 Canara Bank	Before merger	10.98	**0.039**
	After merger	**17.20**	
Case 3 Union Bank	Before merger	11.29	0.186
	After merger	10.36	
Case 4 Indian Bank	Before merger	6.81	0.400
	After merger	11.51	

With regard to individual analysis of anchor banks (Table 4.24(b)), it was revealed that in half of the four merger cases, liquid assets to total deposits ratio was lower post-merger. In the remaining two merger cases, i.e., Case 2 (Canara Bank) and Case 4(Indian Bank), the ratio was higher post-merger. However, significant difference, before and after the merger, with respect to liquid assets to total deposits ratio was found only in Case 2 (Canara Bank) as the p value is less than 0.05.

Table 4.25 Summary table – Financial ratios of Liquidity parameter

Ratio	PNB	Canara	Union	Indian
Cash deposit ratio	✗	✗	✗	✗
Liquid assets to total assets ratio	✗	✓	✗	✗
Liquid assets to total deposits ratio	✗	✓	✗	✗

(Compiled by the researcher)

✗ indicates no significant change post-merger

✓ indicates significant positive change post-merger

O indicates significant negative change post-merger

Liquidity has been measured using three financial ratios. The cash deposit ratio decreased slightly post-merger in half of the merger cases. However, the difference was not significant. Liquid Assets to Total Assets Ratio increased after merger in the majority of the cases. However, Canara Bank showed significant positive change post-merger. Liquid Assets to Total Deposits Ratio was higher in half of the four cases after the merger. Significant positive change was found only in Canara Bank post-merger.

4.7 Chapter Summary

This chapter presents the analysis of objective 1 of the study. The first objective of the study was to evaluate the financial performance of the anchor banks before and after the merger. The study used the CAMEL Model consisting of five parameters, i.e., capital adequacy, asset quality, management efficiency, earnings, and liquidity. Financial data for four years, i.e., two years before merger (2018-19 and 2019-20) and two years after the merger (2020-21 and 2021-22) has been assessed using twenty financial ratios. Both combined analyses taking the four banks together as well as individual analyses were done for the banks. An increase in capital adequacy ratio was seen after merger. Analysis of all four anchor banks taken together revealed that Net NPA to Net Advances Ratio and Net NPA to Total Assets Ratio of the anchor banks differed between the pre and post-merger periods. The above mentioned ratios were much higher before the merger, reflecting the increasing number of bad loans that were made before the two banks merged. While the anchor banks' expenditures increased after the merger due to the inclusion of the target banks' expenditure, the anchor banks had successfully managed to increase their income alongside as Total Expenditure to Total Income Ratio decreased post-merger with significant difference as per t test.