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A COMPARATIVE STUDY ON FINANCIAL PERFORMANCE OF SBI IN THE PRE AND POST MERGER PERIODS USING CAMELS RATING MODEL

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Abstrak

Tujuan inti dari penelitian ini bertujuan untuk membandingkan kinerja State Bank of India melalui model CAMELS selama periode sebelum dan sesudah merger dengan lima perusahaan asosiasinya. Periode penelitian meliputi tahun 2012 hingga 2022. Data yang digunakan berasal dari sumber sekunder dalam penelitian ini. Perbandingan tersebut dilakukan berdasarkan parameter kecukupan modal, kualitas aset, kualitas manajemen, kualitas laba, likuiditas dan sensitivitas terhadap risiko pasar. Data dianalisis dengan menggunakan uji Paired sample t-test dan juga rating CAMELS pada penelitian ini. Hasil penelitian menunjukkan bahwa kompetensi keuangan SBI meningkat pada periode pasca merger. Namun perlu diperhatikan kualitas likuiditas dari total pinjaman terhadap total simpanan (L1). Kualitas likuiditas dalam hal aset yang beredar terhadap total aset (L2) dan sensitivitas terhadap pasar sangat baik dalam peringkat CAMELS. Dari enam parameter CAMELS, kualitas manajemen dan kualitas likuiditas dalam hal total pinjaman terhadap total simpanan (L1) ditemukan signifikan pada periode pasca merger. Studi tersebut menyimpulkan bahwa kualitas laba SBI pasca merger membaik namun likuiditas tidak. Jadi manajemen harus cermat dalam mengelola aset likuid.

Abstract

The core objective of the study aims to compare the performance of State Bank of India through CAMELS model during the pre and post merger periods with five of its associates. The study period covers 2012 to 2022. Data from secondary sources were used in this study. The comparison is made on the basis of the parameters like capital adequacy, asset quality, management quality, earning quality, liquidity and sensitivity to market risk. Data is analysed by using Paired sample t-test and also CAMELS ratings in the present study. The outcomes of the study reveals that SBI's financial competency is improving post merger periods. But attention is required in liquidity quality in terms of total loans to total deposits (L1). Liquidity quality in terms of circulating assets to total assets (L2) and sensitivity to market are excellent in CAMELS ranking. Out of six parameters in CAMELS, management quality and liquidity quality in terms of total loans to total deposits (L1) are found to be significant in the post merger period. The study concluded that post-merger SBI's earnings quality is improved but liquidity did not. So management should be meticulous with managing liquid assets.

Introduction

Banks are viewed as the engine of the contemporary economy. Banks do not produce wealth; however, they play a crucial role in the creation, transfer and dispersion of wealth.

Indian banking has witnessed several horizontal mergers and takeovers, and these mergers and takeovers are as old as its history. Before the formation of a central bank for India, all the functions of a central bank were done by the Imperial Bank. Later it became State Bank of India. Imperial Bank was formed by merging Bank of Bengal, Bank of Calcutta and Bank of Madras. Aftermath of merger and acquisition would results wide business base and large economies of scale. In the Indian banking context, acquisition is used as a tool to improve and strengthen the performance of banks and bail out weak banks. Purpose also changes from time to time. It took place in the 1990s, i.e. the post-liberalisation period, to compete with major players. In the 2010s, mergers and acquisitions took place to reorganize and reorganize our banking industry. After the rearmost banking merger, public sector banks in India confined to a number of twelve instead of twenty seven PSBs. This phenomenon of high mergers and acquisitions during a particular period is often called merger mania.

This study mainly focuses on the merger of SBI with its five associate banks namely 'State Bank of Jaipur, Bikaner, Mysore, Travancore, Hyderabad and Patiala' based on Camels model. This model was developed in the United States by the National Credit Union Administration (NCUA) to analyze the strength of financial institutions and rate them accordingly. During the formulation of this model, only "Camel" was there and "S" was added later after many reviews made by the Federal Financial Institution Examination Council (FFIEC). Based on rates, ranks are assigned to financial institution from 1 to 5 points. Point one (low rank) indicates good performance and point 5 (high rank) indicates poor performance. The performance of SBI during the pre-merger and post-merger eras has also been compared using a paired sample t-test. Numerical figures taken from SBI's consolidated balance sheet have been studied in order to fairly compare the pre- and post-merger periods.

Review of Literature

The following studies give insights into the merger and acquisitions of Indian banks and the analysis is done by various researchers.

Prasad (2011)¹ entitled "Mergers and Acquisition in the Indian Banking Sector: An Analytical Study" attempted to evaluate the financial performance of the commercial banks pre and post merger during the period of 1994 to 2009 and post merger performance by using Data Envelopment Analysis. Post merger mean Return on asset showed and mean Return on equity slightly improved. Technical Efficiency (TE) model of DEA analysis reveals that gigantic bank mergers produce more technical efficiencies compared to small mergers. As far as scale efficiency was concerned, banks shows an improvement after merger and in India, bank mergers have not had a substantial influence on cost and profit efficiencies.

Khan (2012)² attempted to evaluate the pre and post merger performance in terms of 'gross profit margin, net profit margin, operating profit margin, return on capital employed, return on equity and debt equity ratio' in their article entitled "Merger and Acquisitions (M & AS) in the Indian banking sector in post liberalization regime". The entire basis for this investigation is secondary data. A comparison between 'pre merger (3 months) and post merger (3 months) of Nedungadi Bank with Punjab National Bank and HDFC Bank with Centurion Bank' is done using percentage and paired sample t-test. The results of the analysis show that mergers and acquisitions improve banks' performance and banks also gain synergy after mergers.

Kaur and Singh (2016)³ found that number of employees, branches, income, income per branch, income per employee is increased. The higher deposit per employee ratio and advances per employee ratio reveals the productivity of employees. To determine the financial productivity pre and post merger, paired sample t test is carried out. This article titled "Bank Merger Motivations and Post Merger Productivity" disclosed that when branch size increases, the growth rate of Return on Assets decreases.

Maity and Sahu (2017)⁴ in their study titled "Pre- merger performance measures of State Bank of India and its associate banks using Data Envelopment Analysis" attempted to analyze the financial efficiency of SBI and its five subsidiaries during the period of April 2011 to March 2016 with the help of DEA model. The researchers' uses 'deposits, advances and total income as output variables and number of branches, number of ATMs, total assets of banks and gross non-performing assets are input variables'. SBI and its four associates except State Bank of Mysore found to be efficient. The SBM have scale efficiency (SE) score is less than 1. They concluded that the merger will helps to reduce the unhealthy competition among SBI and its associates.

Patel (2018)⁵ analysed the comparative position of long term profitability and financial performance of 'Bank of Baroda, Oriental Bank of Commerce, IDBI Bank, Indian Overseas Bank and State Bank of India' during the period of 2003-2004 to 2013- 2014 in the article named "Pre & Post - Merger Financial Performance: An Indian Perspective". The secondary data of five years pre and five years post merger terms are analysed by using various kind of accounting parameters and paired t test. 'Business per employee, earnings per share, net profit margin, profit per employee, return on assets, return on equity, and yield on investments' are the variables used for this particular study. Indian Overseas Bank, IDBI Bank, Bank of Baroda, and Oriental Bank of Commerce have had a adverse effect on the majority of the variables and a favourable effect on other variables. State Bank of India had a positive effect on post merger. The business per employee and profit per employee of all banks have increased after the mergers as a result of making the best use of human resources.

Jeyalakshmi and Rani (2020)⁶ attempted to analyse weather customers or staff will be affected by the amalgamation of public sector banks with the help of both primary as well as secondary data. A sample of fifty customers and fifty employees of merging banks were selected by using convenience sampling method. From the analysis of this article titled "Merger and Consolidation of Indian Public Sector Banks - An Analysis", it can be concluded that the correlation between staff's perception

and PSB's merger and amalgamation and customer's perception and PSB's merger and amalgamation is positive. Apart from that, the outcome of independent sample t test indicates that there is significant difference between staff's perception and customer's perception towards merger and amalgamation of PSB's in India.

Paul and Majumdar (2020)⁷ conducted a descriptive study named "A Study on Recent Wave of Mergers in Public Sector Banks in India" and examined the impact of mergers of nationalised bank on customers satisfaction and its impact on the competency and financial wellbeing of the bank. This study conducted by acquiring both primary and secondary data. A number of thirty customers were selected as sample by using convenient sampling method. As per the results of percentage analysis, both the bank employees and customers opined that the banks operational performance and profit improved after merger, but the merger wouldn't help to improve the technology of banks.

Kashyap (2021)⁸ titled "Merger and Acquisition in Indian Banking Sector: A case Study of Bank of Baroda" tried to study the effects of mega- merger on Bank of Baroda and its performance pre and post merger in terms of number of bank branches, customers, operating income and expenditure, operating profit and net profit, NPA, capital and liabilities, by using percentage analysis. All are showing an upward trend.

Mukeshkumar (2021)⁹ examined the effect of mergers on the financial performance of banks with special reference to Indian Bank, Punjab National Bank, Union Bank Canara Bank and Bank of Baroda. Results of paired sample t test of accounting ratios such as net profit ratio, operating profit ratio, earnings ratio, return on assets, return on equity, earnings to share, return on capital, debt to equity, and asset turnover ratio. CASA ratio reveals that only few banks like Canara Bank, Union Bank of India and Punjab National Bank have made satisfactory changes in profit ratio. This article titled "A Study of Mergers and Acquisitions in the Indian Banking Sector" demonstrated that weaker banks in the banking sector can strengthen their financial position by joining forces with larger and stronger banks.

Sharma (2022)¹⁰ predicted the right and wrongness of amalgamation in an article entitled "Public Sector Banks Amalgamation in India: An Empirical Evidence". For analysis, the amalgamation of public sector banks for the period 2005 to 2020 was considered for the analysis. For constructing econometric regression model; profit, expenses, income and gross and net non- performing assets are taken as dependent variable and bank deposit, capital and assets taken as independent variable. This study concluded that as the asset size is increases the level of non-performing assets in public sector banks were decrease. PSBs' investment, income and profitability have improved post-merger. On the other hand, costs increase due to higher cost of attracting deposits.

Research Gap

A number of studies have been done on acquisitions and mergers in the banking industry in India. Previous studies provide conceptual insights based on published data of RBI and related banks. Most of them focused on the period when mergers and acquisitions took place and analysis is based on accounting ratios. Here an attempt would be made to specifically study the most recent merger of State

Bank of India with its subsidiaries. An event window of -5 and +5 years is taken for the study.

Statement of the problem

A sound banking sector is critical to the health of a country's economy. A nation's trade, industry and agriculture depend heavily on finance, and banks are the engines that pump finance into the roots of the economy. Consequently, the growth of banking is intrinsically linked to the development of a country. Banks today should not be seen as moneylenders but as leaders in the development process. They are essential in mobilizing investments and disbursing credit to many economic sectors.

Although banks are standalone institutions, their monetary relevance links each institution not only nationally but also globally. The Great Depression in 1930, the financial crisis in 2007, and the global recession in 2023 all occurred in the United States, but the tide of the crisis struck every nation's economy. That means, every economy in the world is particularly related to the financial system. Hence, the competition is universal today. In light of this, the Government of India has tried to strengthen our banking system by merging weak public sector banks with other strong banks. Finance Minister Nirmala Sitharaman has said that mergers and acquisitions will transform India's banks into a global sized one (www.ndtv.com, 2019). Apart from this, the merger will help increase operational efficiency and reduce costs. (www.economictimes.com, 2017).

As an agent of the RBI, merge of SBI with its associates has prominence in the chapter of mergers and takeovers of Indian banking affairs. Even pre and post merger periods, SBI remains the largest public sector bank in India and among top 50 in the world. In this scenario it is worth to analyse the position of SBI. This idea raises the following questions:

1. Are there any changes in the performance of SBI between pre and post merger periods?

Objectives of the study

- To examine the performance of SBI based on CAMELS model in the pre and post merger periods

Hypotheses

H₀₁: There is no significant difference in the performance of SBI between the pre and post merger periods

Research Methodology

An analytical design is used for the current study and it is purely based on secondary information gathered from the official website of SBI and money control. Data collected for the period of 2012 to 2022. CAMELS ratings and paired sample t - test are used to analyse the data.

Analysis & Interpretation

For analysing SBI's data for the last ten years, six CAMELS ratios were used. 'Capital adequacy ratio (CAR) is the ratio between Tier I and Tier II capital to Risk

weighted assets. Asset quality ratio indicates the relationship between Net NPA to Net advances. Management quality expresses the ratio between Management expenses to Total income. Earning quality includes both Return on assets and Return on equity. Return on assets means the ratio between Net profit upon total assets and Return on equity means Net profit upon Own capital. Liquidity quality is the expression of Total loans to Total deposits (L1) and Circulating assets to Total assets. Finally sensitivity to market is the ratio between Total securities to Total assets'.

Table 1. CAMELS Model of SBI in the Pre and Post merger periods For the year 2012 - 2013 to 2021-2022

Year	Capital Adequacy Ratio	Asset Quality Ratio	Management Quality Ratio	Earning Quality Ratio		Liquidity Quality Ratio		Sensitivity to Market Ratio
				ROA	ROE	L ₁	L ₂	
Pre Merger								
2012-2013	12.92	2	26.33	0.88	27.49	85.57	70.85	0.0032
2013-2014	12.96	3	27.92	0.65	20.89	85.82	97.00	0.0031
2014-2015	12	2	28.70	0.70	25.48	82.42	96.16	0.0027
2015-2016	13.12	4	27.17	0.48	19.11	82.98	90.43	0.025
2016-2017	13.11	4	29.22	0.10	4.41	72.96	92.80	0.023
Mean	12.82	3	27.86	0.56	19.47	81.95	89.45	0.01
SD	0.46	1	1.15	0.29	9.07	5.25	10.72	0.01
CV	0.03	0.33	0.04	0.52	0.46	0.06	0.11	1.01
CAGR	0.002	0.14	0.02	-0.36	-0.36	-0.03	1.47	0.483
Post Merger								
2017-2018	12.60	6	31.63	-0.24	-9.96	72.00	92.33	0.024
2018-2019	12.72	3	34.71	-0.19	-8.56	75.72	91.85	0.022
2019-2020	13.13	2	35.80	0.27	12.81	72.51	91.88	0.021
2020-2021	13.74	2	39.03	0.43	23.57	67.30	91.69	0.018
2021-2022	13.85	1	42.84	0.81	48.70	68.35	92.69	0.016
Mean	13.20	2.8	36.80	0.22	13.31	71.18	92.08	0.02
SD	0.57	1.92	4.29	0.44	24.38	3.39	0.41	0.00
CV	0.04	0.68	0.11	2.04	1.83	0.04	0.00	0.16
CAGR	0.69	-0.30	1.12	-2.27	-2.37	-0.01	0.00	-0.077

Source: (Computed data)

The above table 2 exhibits that the analysis of CAMELS ratios of SBI in the pre and post merger periods. During the pre merger period circulating assets to total assets (L2) ratio shows the highest mean value of 89.45 followed by total loans to total deposits (L1) ratio with the mean value of 81.95. Sensitivity to market risk shows the lowest mean value of 0.0114 followed by net profit to total assets (ROA) with a mean value of 0.56. In the post merger period the circulating assets to total assets (L2) ratio shows the highest mean value of 92.08 followed by total loans to total deposits (L1) ratio with the mean value of 71.18. Sensitivity to market risk shows the lowest mean value of 0.02 followed by net profit to total assets (ROA) with a mean value of 0.22.

It is concluded that by the study period of SBI capital adequacy, management quality, liquidity in terms of circulating assets to total assets (L2) and sensitivity to market risk has increased more than the pre merger period but asset quality, earning quality both in terms of return on asset and return on equity, liquidity in terms of total loans to total deposits (L1) is not improved in the post merger.

Table 2. Composite ratings of SBI based on CAMELS model

Year	Capital Adequacy	Asset Quality	Management Quality	Earning Quality		Liquidity Quality		Sensitivity to Market	Total Ratings	Ranks
				ROA	ROE	L ₁	L ₂			
Pre Merger										
2012- 2013	2	2	2	2	1	5	1	1	16	2
2013- 2014	2	3	2	3	2	5	1	1	19	4
2014- 2015	2	2	2	2	1	5	1	1	16	2
2015- 2016	2	4	2	3	2	5	1	1	20	5
Post Merger										
2016- 2017	2	4	2	5	5	4	1	1	24	6
2017- 2018	2	5	2	5	5	4	1	1	25	7
2018- 2019	2	3	3	5	5	4	1	1	24	6
2019- 2020	2	2	3	4	3	4	1	1	20	5
2020- 2021	2	2	4	3	1	3	1	1	17	3
2021- 2022	2	1	4	2	1	3	1	1	15	1

Source: (Computed data)

The above table 2 demonstrates the ranks based on table 1. During the pre merger period 2012- 2013 and 2014- 2015 ranked as 2. These two years ranked as well in the pre merger period. Then the worst rank is in the year 2016- 2017 as 6

followed by 2015-2016 as 5 and 2013- 2014 ranked as 4. In the post merger period the highest rank is 1 secured in the year 2021- 2022 followed by 2020- 2021 as 3. The worst rank is happened in the year 2017- 2018 as 7 followed by 2018- 2019 as 6 and 2019- 2020 ranked as 5.

From this it is concluded that the positive effects of merger and acquisition started to reveal in the last two years of post merger periods. Study the difference in the performance of SBI between the pre and post merger periods

H₀₁: There is no significant difference in the performance of SBI between the pre and post merger periods

Table 3. Performance of SBI based on CAMELS model during pre and post merger periods

			Mean	Std. Deviation	t- value	Sig. (P Value)
Capital Adequacy		Pre	12.8220	.4680	1.355	0.247
		Post	13.2080	.5720		
Asset Quality		Pre	3.00	1.000	.167	0.876
		Post	2.80	1.924		
Management Quality		Pre	27.86	1.159	5.419	.006*
		Post	36.74	4.370		
Earnings Quality	ROA	Pre	.5620	.2949	1.080	.341
		Post	.2160	.4399		
	ROE	Pre	19.47	9.074	.424	.693
		Post	13.31	24.38		
Liquidity Quality	L1	Pre	81.95	5.24	5.715	.005*
		Post	71.17	3.39		
	L2	Pre	89.44	10.72	.543	.616
		Post	92.08	.4120		
Sensitivity		Pre	.0114	.0115	1.361	.245
		Post	.0202	.0031		

Source: Calculated data

* Denotes Significance level at 5% level

From the above table 3 elucidates that, since the P values of management and liquidity quality (L1) is significant at 5 per cent level. Hence, the null hypothesis is rejected. Therefore, It is concluded that there is significant difference in management quality and liquidity in terms of total loans to total deposits (L1) of SBI between the pre and post merger periods.

Findings and Suggestions

1. As per CAMELS parameters SBI gets its best rank during 2021 to 2022. After merger its overall ratings began to improve year after year. The bank management should concentrate on management quality and liquidity quality to enhance its performance to get better ratings.
2. After the merger of SBI with its five associates nothing has improved except the quality of management. Liquidity quality in terms of total loans to total assets is reduced; this demonstrates that liquidity decreases as the size of the bank increases. So a competent management team should be very careful about liquidity management. Otherwise the day-to-day operations of the bank will be affected.

Conclusion

The above study titled "A comparative study on financial performance of SBI in the pre and post merger periods using camels rating model" compares the performance and strength of SBI during pre and post merger periods (2012 to 2022). The objective of this merger is to enhance the operational capability of SBI (www.economictimes.com, 2017) through synergy in operations. Government of India expected that, this combined synergy would reduce the operational cost and accelerate the financial performance.

In this circumstance this study is made an attempt to rate the financial strength of SBI by using international rating system CAMELS model. The results disclose that, the performance of SBI in an optimistic path. But careful attention is needed when it comes to liquidity. Otherwise banks find it difficult to meet their obligations on time. The merger and acquisition of SBI will be a milestone in the pursuit of the Indradhanush Action Plan for PSBs.

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