



# PRE AND POST-MERGER ANALYSIS OF OPERATIONAL EFFICIENCY OF BANK OF BARODA

<sup>1</sup>Akansha Tandon, <sup>2</sup>Dr. Himanshu Srivastava

<sup>1</sup>Research Scholar, <sup>2</sup>Assistant Professor

<sup>1</sup>Department of Commerce and Business Administration, University of Allahabad, Prayagraj, India

**Abstract:** Businesses face intense competition in the global economy. Diverse corporate sectors have expressed interest in mergers as a means of meeting public demand. Bringing together two or more businesses into a single legal entity is referred to as a merger. The banking industry experiences mergers just like other industries. The government reorganized the banking industry through mergers and integration into the global financial system to satisfy the expectations of such a broad customer base. On September 17, 2018, the Indian government announced the merger of Bank of Baroda, Vijaya Bank, and Dena Bank, which became effective on April 1, 2019. The current study compares the operational effectiveness of the Bank of Baroda before and after the integration of Vijaya and Dena Bank. Different operational efficiencies ratios, such as interest income to total funds, net interest income to total funds, non-interest income to total funds, operating expenses to total funds, profit before provisions to total funds, net profit to total funds, loan turnover, total income to capital employed, interest incurred to capital employed, and total assets turnover ratios, have been used to conduct the comparative study. This has been accomplished by conducting a 'student t-test'. At this point, the research shows that there has been an insignificant change in the Bank of Baroda's operational effectiveness as a result of the merger.

**Keywords-** Merger, Operational Efficiency, Operational efficiency ratios, and Student t-Test.

## Introduction

*"Banks are to the economy what the heart is to the human body. They cycle necessary capital through the whole, and they are barely noticed until pressure, necessity, or crises."*

*-Hendrith Smith*

Banks are essential to the nation's economic and financial stability. It offers the public a wide range of services like currency issuance, netting, payment settlement, money generation, lending, etc. But in today's era, many banking operations leaders experience a tug-of-war as they try to provide cost savings while the needs of the customers rise. And they face intense competition from both traditional rivals and digital disruptors as they attempt to satisfy these two requirements. Lean, process digitization, robotics, and, in certain cases, advanced analytics are some of the technologies that banks have implemented to address these issues. The goal is to reduce operational costs while also giving clients an experience that is comparable to that of fin-techs. As a result, banking executives commonly consider mergers and acquisitions as opportunities to upgrade basic technology and build up digital capabilities to better serve their clients and boost the scalability and resilience of their organization. M&As not only help in enhancing the digital capabilities and clientele of the acquirer bank but also aids in the upgradation of human resources. This human element should not be overlooked or minimized because an acquisition or merger offers the chance to strengthen the top management team or sales team of the bank. The performance difference between the most profitable banks in the world and the least profitable banks is growing, according to the most recent statistics from McKinsey Panorama (**Miklos Dietz, 2022**). While geography and business models still distinguish leaders from followers in the banking industry, operational excellence has recently become an increasingly significant factor underpinning outperformance.

Operational efficiency is the ability or method of getting the most out of the resources at hand. It is the term used to describe the mix of labour, resources, equipment, and capital used to provide the greatest output. It is generally acknowledged that banks' productivity has a significant impact on the economy's productivity. The relative effectiveness of banks is something that all of the participants—including regulators, clients, managers, and stakeholders—are interested in. Ineffective banks are seen from the regulator's perspective as a huge failure. The economy's productivity is correlated with the strength of the banks. The entire payment system is in danger if the financial sector collapses. Only when the banks effectively route customer money to their claimed advantage can customers feel secure with their deposits. (**Miklos Dietz, 2022**)

As a result, mergers and acquisitions in the Indian banking sector have grown in popularity across the country. In the banking industry, mergers and acquisitions are mostly motivated by recovering financial fortunes. Mergers and acquisitions are seen as a reasonably quick and efficient method for breaking into new markets and incorporating technological developments. Also, banks can expand their businesses significantly while also lowering their charge to a manageable level i.e. operationally efficient with the aid of mergers and acquisitions in the banking industry. Thus, it is imperative to gauge the impact of the merger on the operational efficiency of the banks. (**Sethi, 2021**)

This study compares the Bank of Baroda's operational effectiveness before and after Vijaya and Dena Bank merged with it. The comparative study was conducted using a variety of operational efficiency ratios, including interest income to total funds, net interest income to total funds, non-interest income to total funds, operating expenses to total funds, profit before provisions to total funds, net profit to total funds, loan turnover, total income to capital employed, interest incurred to capital employed, and total assets turnover ratios. The operational or managerial efficiency ratio is a financial measure that companies use to assess how effectively

management controls their use of working capital or other resources. An efficiency ratio, in theory, examines how well a corporation uses its assets and liabilities.

## Review of Literature

**(Bhayani, 2006):** Using CAMEL characteristics, the researcher looked at four well-known private sector banks: ICICI, HDFC, UTI, and IDBI. The IDBI and UTI were determined to have risen in profitability and efficiency, with the former performing best and the latter coming in second.

**(Singla, 2008):** It has been discovered that management is essential to the expansion of the banking sector. Sixteen banks were included in the sample for the investigation. The study's six-year time frame (2001–2006) and sample size were both taken from the bank index. The study's conclusions showed that the banks' profitability was respectable when compared to prior years. The majority of the information was gathered from public and secondary sources. The profitability of the banks was examined using their annual reports.

**(Lahoti, 2016):** The research paper's goal is to examine the benefits and motivations behind mergers and acquisitions. According to the author, corporate restructuring is now done through mergers and acquisitions to take advantage of economies of scale. Additionally, it aids in boosting market share, lowering business risk, and gaining an advantage over rivals. Additionally, it encourages organizations to diversify and improve management to create synergy and value.

**(Kotnal, 2016):** The author concluded that SBI's performance has not much improved since the merger. The merger primarily served the needs of the general public. By gathering secondary data such as "Gross Profit Margin, Operating Profit Margin, Return on Capital Employed, Return on Equity, and Debt Equity Ratio," the researcher used the probabilistic judgmental sampling technique.

**(Banu, 2019):** To assess the operational performance, short-term liquidity, solvency, and profitability of the Indian banking system, the study analyses banks from the private, public, and foreign sectors. The cash-deposit ratio and credit-deposit ratio are the ratios that are used to measure liquidity. Net interest margin and investment-deposit ratios are used to gauge the solvency of banks. Ratios relating to equity, advances, and investments are used to determine the profitability return on assets. The results demonstrate a strong correlation between public, private, and foreign banks in the areas of return on equity, return on investments, return on assets, and return on advances on the profitability position. Further, both the credit-to-deposit ratio and the cash-to-deposit ratio are beneficial to the banks' short-term liquidity. But neither the net interest margin nor the investment ratios show any effect on the solvency of the three banking sectors.

(Kaushik Ghosh, 2021): To provide institutions and managers involved in merger and acquisition agreements with useful policy recommendations, the paper aims to summarize the numerous institutional regulations regarding M&A in India. This essay reviews the Report of the Company Law Expert Committee on Mergers and Acquisitions, which was released by the Ministry of Corporate Affairs (MCA). 34 points have been condensed in the M&A paper by MCA and can be grouped into five categories: structure and objective, implementation, potential benefits, potential constraints, and proposed remedies. In light of the Structure, Conduct, and Performance (SCP) paradigm, these are further examined.

## Objective of the study

The objective of an organization's policy is to strengthen and preserve its competitive edge. Banks can increase their operations significantly and cut their charge to a reasonable level with the aid of M&A in the banking industry. Consequently, banks become operationally efficient with the help of mergers and acquisitions. Hence, the current study seeks to ascertain the operational efficiency of the Bank of Baroda by comparing the managerial efficiency ratios before and after the merger of the Bank.

## Research Methodology

The following methodologies have been used while conducting the research:

- Secondary data from the Bank's annual reports and the website moneycontrol.com served as the foundation for the study.
- To ascertain the impact of a merger on the Bank's operational effectiveness and test the theory, different efficiency ratios have been considered.
- Efficiency ratio means have been determined for the two years both before and after the merger's completion. After that, the means were contrasted and assessed using a "t-Test" with a 5% level of significance.

## Research Hypothesis

The following hypothesis has been made to gauge how a merger will affect the Bank of Baroda's operational effectiveness:

**H<sub>0</sub>:** There is no significant difference between the pre and post-merger operational efficiency of the Bank of Baroda.

**H<sub>1</sub>:** There is a significant difference between the pre and post-merger operational efficiency of the Bank of Baroda.

## Data Analysis and Interpretation

Key efficiency ratios have been used to evaluate the managerial effectiveness of the bank both before and after the merger. The "Student t-Test" was used in the study to test hypotheses.

To compare the means of the two groups, a statistical test is performed. Key managerial efficiency ratios for the two years before and after the merger have been compared with this goal in mind. The profile of the management efficiency ratios before and after the merger is shown in Table 1.

TABLE 1

**PROFILE OF PRE AND POST MERGER MANAGEMENT EFFICIENCY RATIOS**

MANAGEMENT EFFICIENCY RATIOS	PRE-MERGER		POST-MERGER	
	As on 31/3/2017	As on 31/3/2018	As on 31/3/2019	As on 31/3/2020
Interest Income/ Total Funds	6.18	6.17	6.63	7.84
Net Interest Income/ Total Funds	1.98	2.19	2.46	2.83
Non Interest Income/ Total Funds	0.99	0.94	0.84	1.06
Interest Expended/ Total Funds	4.20	3.98	4.17	5.01
Operating Expense/ Total Funds	2.53	3.41	3.09	3.91
Profit Before Provisions/ Total Funds	0.36	(0.39)	0.09	(0.19)
Net Profit/ Total Funds	(1.04)	(2.44)	(1.65)	(2.16)
Loans Turnover	0.11	0.11	0.11	0.13
Total Income/ Capital Employed (%)	7.17	7.11	7.47	8.90
Interest Expended/ Capital Employed (%)	4.20	3.98	4.17	5.01
Total Assets Turnover Ratios	0.06	0.06	0.07	0.08

Source: <https://www.moneycontrol.com>

The mean and standard deviation of the management efficiency ratios have been evaluated and are displayed in Table 2 after being split into pre- and post-merger periods. The "t-Value" is then calculated using the formula below.

$$\text{t-Value (Table value)} = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{N_1} + \frac{s_2^2}{N_2}}}$$

where,

$x_1$  and  $x_2$  are the observed mean of two sample sizes.

$s_1$  and  $s_2$  are the observed standard deviation of two sample sizes.

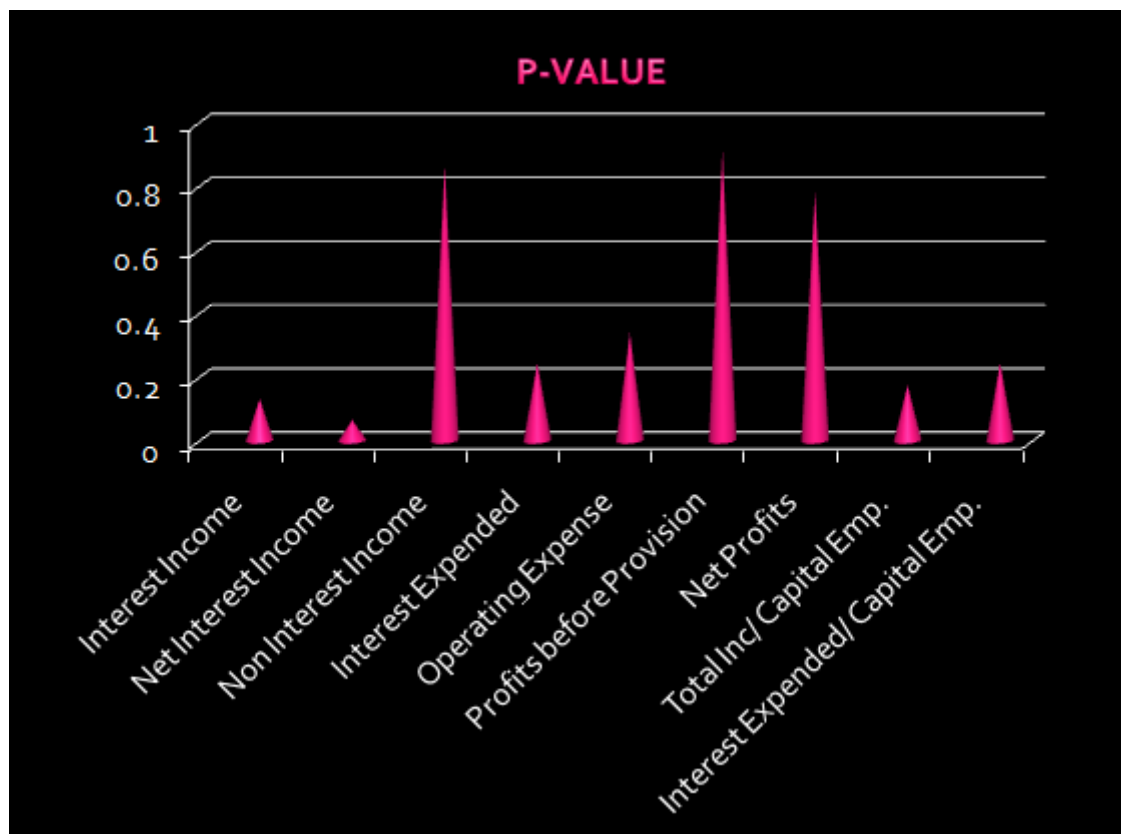
$N_1$  and  $N_2$  are the two sample sizes.

**TABLE 2: Sample Statistics and t-Test Results**

Management Efficiency Ratios	Mean		Standard Deviation		t-value
	Pre-merger	Post-merger	Pre-merger	Post-merger	
Interest Income/ Total Funds	6.175	7.235	0.005	0.605	2.478
Net Interest Income/ Total Funds	2.085	2.645	0.105	0.185	3.723
Non Interest Income/ Total Funds	0.965	0.95	0.025	0.11	(0.188)
Interest Expended/ Total Funds	4.09	4.59	0.11	0.42	1.629
Operating Expense/ Total Funds	2.97	3.5	0.44	0.41	1.246
Profit Before Provisions/ Total Funds	(0.015)	(0.05)	0.375	0.14	(0.124)
Net Profit/ Total Funds	(1.74)	(1.905)	0.7	0.255	(0.313)
Loans Turnover	0.11	0.12	0	0.01	-
Total Income/ Capital Employed (%)	7.14	8.185	0.03	0.715	2.005
Interest Expended/ Capital Employed (%)	4.09	4.59	0.11	0.42	1.629
Total Assets Turnover Ratios	0.06	0.075	0	0.005	-

Source: Author's own compilation

After assessing the “t-Value”, the p-Value (Probable value) has been calculated using the t-distribution table. The P-Value (significance level) is a measure of the probability that an observed difference could have occurred just by random chance. If the p-value is less than a certain value (here it is 5% or 0.05) then the null hypothesis is rejected.



Source: Author's own compilation

The above graph shows the p-value distribution of the various key managerial efficiency ratios. In the present case, all the efficiency ratios have a value greater than 0.05 or 5%. This means that the alternate hypothesis has been rejected and the null hypothesis has been accepted. Thus, it can be deduced that there is no significant impact of the merger on the managerial efficiency of the Bank of Baroda.

## Conclusion

In the modern Indian banking system, banks played an undeniably relentless role. It's not just commendable; it's also adorable. The existence of a smooth flow of trade both locally and internationally depends on the effectiveness of the banks. Piecemeal productivity increases won't significantly affect banks' bottom lines in the current environment. They must rigorously implement a whole set of levers across the entire cost base of their business.

In a nutshell, it can be said that the operational efficiency of the Bank of Baroda has not been impacted by the merger of Vijaya and Dena Bank. As a result, the Null Hypothesis might be regarded to have been confirmed. It claims that the merger has had little to no effect on the Bank of Baroda's operational effectiveness. Since only two years were taken into account for the current study, it is too early to draw any firm conclusions. Long-term synergistic effects will undoubtedly be produced, causing the Bank to work better and with greater efficiency.

**REFERENCES:**

- Banu, M. (2019). Operational Efficiency of Indian Banking Sector- A Comparative Analysis. *International Journal on Emerging Technologies* , Volume- 10(3):45-50.
- Bhayani, S. J. (November, 2006). Performance of New Indian Private Sector Banks: A Comparative Study. *The IUP Journal of Management Research*, Volume 5(11):53-70.
- Kaushik Ghosh, M. M. (2021). *Review of Company Law on Merger and Acquisition in India Using SCP Paradigm*. Five Shades of Emerging Business Cases, Eliva Press.
- Kotnal, D. J. (2016). The Economic Impact of Merger and Acquisition on Profitability of SBI. *International Journal of Applied Research*, Volume 2, Issue 7, Part L.
- Lahoti, D. J. (2016). An Experiential Study of Mergers And Acquisitions in Indian Banking Sector. *PARIPEX- Indian Journal of Research*, Volume 5: Issue 4.
- Miklos Dietz, A. K. (2022, November 4). Retrieved April 20, 2023, from Mckinsey.com: <https://www.mckinsey.com>
- Sethi, P. (2021, September 21). Retrieved April 20, 2013, from ipleaders: <https://blog.ipleaders.in>
- Singla, H. K. (2008). Financial Performance of Banks in India. *The IUP Journal of Bank Management*, Volume 0(1):50-62.

**Websites:**

- <https://eitechindia.com/company/bank-of-baroda-87>
- [https://en.wikipedia.org/wiki/Bank\\_of\\_Baroda](https://en.wikipedia.org/wiki/Bank_of_Baroda)
- <https://www.bankofbaroda.in>
- <https://www.moneycontrol.com>
- <https://www.iosrjournals.org/iosr-jhss/papers/Vol.27-issue4/Ser-3/H2704036272.pdf>
- <https://www.mckinsey.com/industries/financial-services/our-insights/banking-matters/a-recipe-for-banking-operations-efficiency>
- <https://blog.ipleaders.in/mergers-and-acquisitions-in-india-and-its-effect-on-the-operating-efficiency-of-an-acquiring-company/>