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A Study on Impact of Merger & Demerger of Banks in India with Special Reference to Public & Private Banks

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Abstract - This research aimed to examine how bank Merger & Demerger in India have affected the operations and finances of the bank. It has also been determined how mergers affect the wealth of acquiring banks in the short and long term. Public and private sector acquirer banks' performance after mergers has also been examined. This investigation relies on secondary sources of information. Statistics such as the mean, standard deviation, ratio analysis, paired sample t-test, Shapiro-Wilk test, Corrado Rank test, DEA analysis, EVA analysis, and Event Study analysis have been used to examine the data. Our research compared the financial health of both firms before and after their 2015-16 demerger. To determine whether or not the demergers had a material effect on the financial performance of the firms involved, a sample paired t-test was conducted. After using the aforementioned statistical method, As stand-ins for actual financial performance, we considered such metrics as return on investment (ROI), return on net worth (RONW), and earnings per share (EPS).

Keywords - Demerger, ROI, RONW, EPS, Indian Banking Sector, Mergers and Acquisitions

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INTRODUCTION

It's possible for a firm to expand both internally and outside. Internal growth occurs when a firm naturally develops via the acquisition of additional resources, the use of cutting-edge technologies, and the launch of innovative new product lines. Yet, corporate combinations allow for external growth via the purchase of an existing corporation. Mergers, acquisitions, amalgamations, and takeovers are all examples of these merged entities. As a result, these mergers and acquisitions are playing a crucial part in the expansion of the world's most successful businesses. As a means of entering new markets and growing existing ones, mergers and acquisitions have proven to be crucial. When two or more businesses combine into a single corporation, this is called a merger. One way to look at it is as the joining together of two businesses. When one corporation purchases the voting stock of another, it is called an acquisition or a takeover (Kar, 2006). Acquisitions are not the same as mergers. When two firms join forces to create a single entity, this is known as a merger. When one corporation buys out another, it is called an acquisition.

Mergers and acquisitions have not been able to pass unnoticed by the Indian banking industry. Banks in India have been merging and buying one other out since far before the country's independence. In 1770, the Bank of Hindustan opened, marking the beginning of India's modern financial system. Eventually, the British East India Company chartered more financial institutions such the Bank of Bombay (1840), Founded in 1840, the Bank of Madras and the Bank of Calcutta (1843). The Imperial Bank of India was founded in 1921 as a merger of the banks of the British, French, and Indian presidencies. Its name was changed to the State Bank of India in 1955. Hence, the phenomena of mergers and acquisitions has been ongoing in the Indian banking industry for a considerable amount of time. Also, in 1959, SBI bought the state-owned banks of eight former princely states. Several troubled financial institutions were merged or shut down as a result of the Travancore Cochin Banking Inquiry Commission's findings and recommendations. As a result, there were fewer commercial banks than there were people. From 1961 through 1969, the Reserve Bank of India forced the merger of 36 underperforming banks into larger, more stable institutions.

LITERATURE REVIEW

Ray J. (2018) There were 160 people that signed up. The results show that public and private sector banks have quite different levels of client loyalty.

Customers are more loyal to private banks than they are to open-sector banks. Client happiness is affected by administration quality indicators including availability of resources, speed of service, consistency, reliability, assurance, and empathy. It has been shown that the compassion measurement has the lowest association to customer happiness, whereas the significant quality evaluation is the highest predictor of customer loyalty. Bangladeshi bank regulators and other interested parties might use the study's results to evaluate bank management and formulate a plan to better serve current clients in a fiercely competitive market.

H. Hennayake (2017) Quality of administration is the key distinction. Many studies have examined how the quality of service provided to retail consumers affects the likelihood that they would return. While this highlights the need for further study in this area, it also reveals both human and non-human aspects of perceived administration quality have received less attention than they should have, particularly in the context of provincial monetary setups and their effect on customer loyalty. The major purpose of this research was to investigate the effects of several saw benefit quality criteria on customer satisfaction in a setting similar to that which is suggested for exploratory research. Data was acquired from a representative sample of 210 residents of the Puttlam District. The applied system was constructed using a descriptive method, and ad hoc theories were developed when required. Data collection and categorization followed standard research practices, with SPSS 20 utilized for statistical analysis. We put our theories to the test with the use of correlation and regression analysis. Human-related elements in perceived administration quality were shown to have the greatest impact on customer loyalty, with reliability and responsiveness coming in a close second.

Vershinina o. (2017) Experimentation is necessary since the theory makes use of SEVQUAL measurements, the Profit-chain model, and ISO benchmarks. A quantitative approach in the form of a need survey was used. More than a hundred bank customers participated in the survey. Results suggest customer loyalty is more than anticipated but still below par. The bank should emphasize consumer loyalty to its staff and take further steps to enhance management quality. Programs to better serve customers and train staff, and the use of cutting-edge features are all recommended.

Patel H. and DesaiIndian M. (2016) The focus of this study is to examine the factors that contribute to a company's success in retaining loyal customers, client faithfulness, and the degree of maintenance associated with banks in the city of Surat. Experts have also worked to separate the impact of statistical elements on bank selection. Three hundred and fifty participants were surveyed using a non-probability examination strategy. The findings suggest a link between happy customers and continued loyalty to their bank. The analyst looked through the descriptive study. Data was acquired from both mandatory and elective sources to complete the investigation. The analyst has used research methodology to compile crucial data. The survey makes use of a 5-point Likert scale for responses. The expert welcomed the private inquiry, and in this pilot research, the analyst collected 30 tests, 15 from customers of the public sector bank and 15 from customers of the private sector bank. Analysts use the Cronbach Alpha test to ensure the consistency of their data.

Gatari E. (2016) Data was collected by a self-reported survey, and a non-likelihood helpful examined approach was used to evaluate the 135 respondents. Expressive inquiry was used to deconstruct data about the customers' financial circumstances. The levels of happiness among happy and unhappy customers were compared using the Mann-Whitney test. The results show that Standard Chartered Bank has a satisfied customer base overall. Client satisfaction with Time's quality and service, as measured by nonparametric measures, is high. According to the results of the study, Standard Chartered Bank is urged to maintain the high quality of its financial services. To achieve this, the bank must have standardized quality control and confirmation methods, as well as a robust monitoring and evaluation system for the quality of the administration.

RESEARCH METHODOLOGY

Secondary data for this study was culled from a variety of sources, including annual reports from the banks under investigation, statistical tables pertaining to banks in India, reports on the state of banking in the country, RBI bulletins, the Prowess financial database maintained by the Centre for Monitoring the Indian Economy (CMIE), journals devoted to banking and finance, and banking-related websites. Secondary data is what we've used for our statistical analyses. the period of study for data collection is from the year 1997 to 2013. We obtained the business information from Capitaline Database. To determine whether or whether the 2015–2016 demergers had a material effect on the return on investment, return on net worth, and earnings per share of the corporations, we plan to use a Sample paired t-test. For consistency's sake, we'd use data from the fiscal years 2011-2012 through 2014-2015 for the pre-demerger era, and data from the fiscal years 2016-2017 through 2019-2020 for the post-demerger period. Just two firms were utilized since only two demerged in 2015 and 2016.

DATA ANALYSIS

Study Of Mergers Banks

- **Operational Performance Analysis of the Merger of Times Bank with HDFC Bank**

In Table 1, we see the results of three outputs—advances, investments, and interest income—that

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illustrate HDFC Bank's technical efficiency both before and after the merger. According to the data shown in Table, HDFC Bank's average constant returns to scale efficiency in the pre-merger period was 84.9 percent when advances were utilized as an output, and 82.8 percent after the merger. As a result, the bank's technical efficiency fell by 2.1% after the merger. In addition, HDFC Bank's average variable returns to scale efficiency was 88.9% before the merger and 82.9% after it. In the years after the merger, technical efficiency dropped by 6%. As a result, HDFC Bank's efficiency in terms of both constant and variable returns to scale did not increase after the merger. The Table also displays the bank's scale efficiency both before and after the merger. Comparing the acquiring bank's average scale efficiency before and after the merger indicates that it was 95.6% before the merger and 99.8% after. As a result, the acquiring bank's average scale efficiency increased by 4.2% in the post-merger period compared to the pre-merger period, indicating an uptick in performance. In both the pre- and post-merger eras, the bank prioritized strategies with rising returns to scale. Nonetheless, it achieved perfect scale efficiency in 2002–03, reaping the benefits of consistent returns to scale during that time period. Table 1 shows that after the merger, HDFC Bank's average scale efficiency rose but the average constant and variable returns to scale efficiency fell. Model-analysis II's makes use of investment as an outcome. According to the findings, HDFC Bank saw a rise of 5.8% in average constant returns to scale, 5.6% in average variable returns to scale, and 0.6% in average scale efficiency. This shows that HDFC Bank's technological efficiency has increased. According to this model, the bank achieved growing returns to scale before to the merger but experienced falling returns to scale after the merger. Model-III uses interest income as an output and finds that HDFC Bank's pre- and post-merger period average constant returns to scale and scale efficiency both rose by 15.2%, but average variable returns to scale did not change. Prior to the merger, the bank had growing returns to scale, reaching scale efficiency of 1.00 in 1998–1999. However, after the merger, the bank saw diminishing returns to scale. It's safe to say that following the merger, HDFC Bank became more technically efficient. The t-values, however, didn't demonstrate anything conclusive. As a result, we accept the null hypothesis that mergers have no appreciable effect on acquiring bank's operational performance.

Table 1: Technical Efficiency of HDFC Bank in the Pre- and Post-merger Period (Merger of Times Bank with HDFC Bank)

Model-I Output: Advances	Pre-merger			Post-merger			
	Years	Efficiency	Mean	Years	Efficiency	Mean	t-value
crste	1996-97	0.929		2000-01	0.751		
	1997-98	0.726		2001-02	0.733	0.828	0.256
	1998-99	0.893	0.849	2002-03	1.000		
vrste	1996-97	1.000		2000-01	0.754		
	1997-98	0.753	0.889	2001-02	0.734	0.829	0.619
	1998-99	0.916		2002-03	1.000		
scale	1996-97	0.929irs		2000-01	0.996irs		
	1997-98	0.964irs	0.956	2001-02	0.999irs	0.998	3.229
	1998-99	0.974irs		2002-03	1.000crs		

Model-I Output: Advances	Pre-merger			Post-merger			
	Years	Efficiency	Mean	Years	Efficiency	Mean	t-value
crste	1996-97	0.892		2000-01	0.876		
	1997-98	0.731	0.847	2001-02	0.978	0.905	-0.614
	1998-99	0.918		2002-03	0.862		
vrste	1996-97	1.000		2000-01	0.887		
	1997-98	0.769	0.906	2001-02	1.000	0.962	-0.567
	1998-99	0.949		2002-03	1.000		
scale	1996-97	0.892irs		2000-01	0.988drs		
	1997-98	0.951irs	0.937	2001-02	0.978drs	0.943	-0.096
	1998-99	0.968irs		2002-03	0.862drs		

Model-III Output: Interest Income	Pre-merger			Post-merger			
	Years	Efficiency	Mean	Years	Efficiency	Mean	t-value
crste	1996-97	0.011		2000-01	0.851		
	1997-98	0.866	0.626	2001-02	0.765	0.778	0.438
	1998-99	1.000		2002-03	0.718		
vrste	1996-97	1.000		2000-01	1.000		
	1997-98	1.000	1.000	2001-02	1.000	1.000	-
	1998-99	1.000		2002-03	1.000		
scale	1996-97	0.011irs		2000-01	0.851drs		
	1997-98	0.866irs	0.626	2001-02	0.765drs	0.778	0.438
	1998-99	1.000crs		2002-03	0.718drs		

- **Operational Performance Analysis of the Merger of Bank of Madura with ICICI Bank**

Table 2 details ICICI Bank's technical efficiency both before and after the merger. With a t-value of -4.202, Model-I reveals that the bank's average constant returns to scale efficiency increased by 48.8 percent, while the bank's average variable returns to scale efficiency increased by 44.7 percent. Also, the bank saw a 13.2% increase in its average scale efficiency. The Table shows that the bank had an upward trend in scale efficiency before the merger. After the merger, the bank had consistent returns to scale in 2001–2002, but losses to scale in 2002–2003. In addition, Using investment as an output in Model-II led to increases of 31.4%, 29.2%, and 7.0% in the bank's average constant returns to scale, variable returns to scale, and scale efficiency, respectively. ICICI Bank had rising returns to scale before the merger as a result of its size. In the post-merger era, however, it achieved constant returns to scale in

2001-02 (when the percentage rise in output was the same as the percentage increase in input) and falling returns to scale in 2002-03 and 2003-04. The bank's efficiency increased by 17.2%, 5.2%, and 14.9%, respectively, in the post-merger period, as measured by the average constant returns to scale, average variable returns to scale, and average scale efficiency using interest income as an output model. The bank saw rising returns to scale before the merger, and rising, stable, and falling returns to scale in the years after the merger. The t-values were not statistically significant, hence the findings indicated that the merger had increased the bank's technical efficiency. Thus, we agree with the theory.

Table 2: Mean Technical Efficiency of ICICI Bank in the Pre- and Post-merger Period (Merger of Bank of Madura with ICICI Bank)

Model-I Output: Advances	Pre-merger			Post-merger			
	Years	Efficiency	Mean	Years	Efficiency	Mean	t-value
	1997-98	0.286		2001-02	1.000		
	1998-99	0.234	0.256	2002-03	0.653	0.744	
crste	1999-00	0.250		2003-04	0.580		
	1997-98	1.000		2001-02	1.000		
	1998-99	0.322	0.538	2002-03	0.957	0.985	-1.991
vrste	1999-00	0.292		2003-04	1.000		
	1997-98	0.286irs.		2001-02	1.000crs		
	1998-99	0.725irs.	0.622	2002-03	0.683drs	0.754	-0.442
scale	1999-00	0.856irs.		2003-04	0.580drs		

Model-I Output: Advances	Pre-merger			Post-merger			
	Years	Efficiency	Mean	Years	Efficiency	Mean	t-value
	1997-98	0.340		2001-02	1.000		
	1998-99	0.415	0.383	2002-03	0.570	0.697	-1.817
crste	1999-00	0.395		2003-04	0.523		
	1997-98	1.000		2001-02	1.000		
	1998-99	0.557	0.671	2002-03	0.890	0.963	-1.846
vrste	1999-00	0.456		2003-04	1.000		
	1997-98	0.340irs		2001-02	1.000crs.		
	1998-99	0.746irs	0.651	2002-03	0.640drs.	0.721	-0.231
scale	1999-00	0.867irs		2003-04	0.523drs.		

Model-I Output: Advances	Pre-merger			Post-merger			
	Years	Efficiency	Mean	Years	Efficiency	Mean	t-value
	1997-98	0.573		2001-02	0.398		
	1998-99	0.525	0.535	2002-03	1.000	0.707	-0.910
crste	1999-00	0.507		2003-04	0.723		
	1997-98	1.000		2001-02	0.405		
	1998-99	0.636	0.732	2002-03	1.000	0.784	-0.161
vrste	1999-00	0.562		2003-04	0.949		
	1997-98	0.573irs		2001-02	0.984irs		
	1998-99	0.826irs	0.766	2002-03	1.000crs	0.915	-0.933
scale	1999-00	0.901irs		2003-04	0.762drs		

Study Of Demergers Banks

Below is a description of the hypotheses for the paired sample t test:

1) Arvind LTD.

Table 3: ROI

	BEFORE	AFTER
Mean	9.83	13.4525
Variance	12.36166667	3.229958333
Observations	4	4
P(T<=t) two-tail	0.064286427	
t Critical two-tail	3.182446305	

As the p-value is larger than 0.05, we may conclude that there is NO statistically significant difference between our two variables. (p >.05).

0.064286427 > 0.05, Not Significant

Table 4: RONW

	BEFORE	AFTER
Mean	16.685	7.1875
Variance	31.6305	6.031158333
Observations	4	4
P(T<=t) two-tail	0.03286613	
t Critical two-tail	3.182446305	

A quick glance at the aforementioned table reveals We may infer that there is a statistically significant difference between our two variables since the p-value is less than 0.05 (p .05).

0.03286613 < 0.05, Significant

Table 5: EPS

	BEFORE	AFTER
Mean	13.3625	9.15
Variance	8.863158333	15.66526667
Observations	4	4
P(T<=t) two-tail	0.183555655	
t Critical two-tail	3.182446305	

We may deduce from the above table that there is NO statistically significant difference between our two variables since the p-value is greater than 0.05 (p >.05).

0.183555655 > 0.05, Not Significant

2) Balkrishna Industries Ltd.

Table 6: ROI

	BEFORE	AFTER
Mean	11.86	24.2625
Variance	0.5022	3.604558333
Observations	4	4
P(T<=t) two-tail	0.002037346	
t Critical two-tail	3.182446305	

A quick glance at the aforementioned table reveals We may infer that there is a statistically significant difference between our two variables since the p-value is less than 0.05 (p < .05).

0.002037346 < 0.05, Significant

Table 7: RONW

	BEFORE	AFTER
Mean	23.565	18.505
Variance	3.642766667	2.400966667
Observations	4	4
P(T<=t) two-tail	0.040860381	
t Critical two-tail	3.182446305	

A quick glance at the aforementioned table reveals We may infer that there is a statistically significant difference between our two variables since the p-value is less than 0.05 ($p < 0.05$).

0.040860381 < 0.05, Significant

Table 8: EPS

	BEFORE	AFTER
Mean	40.4175	41.2
Variance	110.778425	33.15333333
Observations	4	4
P(T<=t) two-tail	0.851251211	
t Critical two-tail	3.182446305	

We may deduce from the above table that there is NO statistically significant difference between our two variables since the p-value is greater than 0.05 ($p >.05$).

0.851251211 > 0.05, Not Significant

CONCLUSION

Nedungadi Bank Ltd.'s merger with Punjab National Bank was the sole notable exception; following the merger, both banks' financial situations improved dramatically. Certain bank mergers improved earnings, according to the study; they include the mergers of HDFC Bank and Times Bank, ICICI Bank and Bank of Madura, ICICI Ltd. and Bank of Rajasthan, and Bank of Baroda (merger with Banaras State Bank). We drew a number of clear findings from our research on the effects of spin-off in 2015–16. To demonstrate how spin-offs and demergers may affect a company's return on investment, return on net worth, and earnings per share, this study employs a simple statistical technique known as the sample paired t-test. To arrive at a reasonable conclusion, we needed to learn how the sample paired t-test is implemented and analyzed.

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