



Impact of mergers and acquisitions on the profitability, liquidity and assets quality of selected Banks in India

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Abstract

The study emphasized on the assessment of measuring the impact of mergers and acquisitions on the three research variables of profitability, liquidity and asset quality during four years of pre (2017-2020) and four years of post (2021-2024) M&A period of four selected banks (PNB, UBI, CB and IB) in India. The study examined the hypothesis by adopting the t-test two sample assuming unequal variation. The statistical evidence provided that M&A shows significant impact on the profitability and liquidity. On the contrast, the study found insignificant effect of M&A on the asset quality of banking sector in India. In overall, the study suggests need further extensive research on assessing the performance of banks during post M&A across the variables, banks and countries.

JEL Codes: G21, G30 & G34

Keywords: Mergers & acquisitions, banking sector, liquidity and profitability and asset quality

Introduction

The proliferation of Mergers and Acquisition (M&A) in banking sector is global phenomenon. Exclusively, in emerging countries M&A often driven by the policy with aim of promoting financial stability with restructuring of banking sector, Hussain Muhammad *et al* (2019) ^[6]. The mergers and acquisitions emerged as major way of restructuring corporate structuring where banking industry in India also experienced merger waves leading to the emergence of very large banks and financial institution. The mergers and acquisition result into significant structural changes in ownership, financial and capital and organizational Colić, Snežana *et al* (2024) ^[4]. The merging in banking sector is in the form of two or more banks become as one bank and work under new bank name (Zelenović & Babić, 2018) ^[14]. The acquisition of banks refers to takeover of one or two small banks by a large and financially strong bank. As per the banking theory and practices three major models of mergers and acquisitions are observed. In the first model two or more small banks merged into one as a new bank. In second model large and financially strong bank acquire the small bank. In the third model two or more large banks emerged one new bank.

In India the idea of restructuring banking sector was started with recommendation of Narasimham committee report in 1991. This was made with an intension of strengthen of Indian banking sector and to meet forth coming challenging. Thereafter, in India numerous mergers took place both in public and private sector banks. In India, Banking regulation Act 1949 and competition Act 2002 deals with mergers and acquisition in banking sector. The mergers in banking sector in India is driven by the leveraging the synergies result from M&A, promote stability in banking and financial sector, facing competitions, enjoy large scale of operation, increase risk bearing capability, growth in business, avoid weak banks etc.

Since 2000 NPA in banking sector started climbing and emerged as significant problem to entire banking sector by the end of 2014. Then BJP government entered in ruling the government and started cleaning the weak balance sheet in

11 public sector by adopting Prompt Action Framework (PCA) first time in India. This included technical writing off its NPA by allocating huge provisions out of profits. As result by the end of 2020 many banks balance sheets cleaned up NPA and improved assets quality. Thereafter, small banks and weak banks were merged others banks. Indian bank sector comprises of 12 public sector, 21 private sector and 44 foreign banks, 12 small fiancé banks. The total deposits grew with more than double rate during last seven years i.e. from 1180 USD billion in 2016 to 2452 USD billion in 2024 (IBEF).

Review of Literature: Colić, Snežana *et al* (2024) ^[4] analyzed the impact of bank mergers on the profitability of the six banks in Republic Serbia for the period of 2018-22. The study used ROA, ROE and NIM as profitability indicators and revealed significant improvement during post mergers period. Hussain Muhammad *et al* (2019) ^[6] examined the financial performance of banking sector during pre and post M&A 2014-15. Sufi (2004) ^[13] study revealed the fact that M&A leads to fruitful result for small organizations than larger organizations, as they later may pose greater difficulty for management. Resti (1998) study supported that M&A result in significant uptrend in profitability and efficiency due to economies of large scale and improvement in resources. S. Sasikala & Sudha (2024) ^[9] observed significant improvement in assets quality of SBI banks through drop in NPA during post-merger period. Sinha & Jain (2015) ^[12] study observed significant positive effect on the potential gains from M&A in the case of SBI. In the similar line Kumar (2013) ^[10] study supported significant improvement in all selected operational and financial parameters during post M&A period in case of Bharath overseas bank and Indian overseas bank.

Irfan Afza and Yusuf (2012) investigated the impact of M&A on efficiency of cost and profitability in Pakistan banking sector during 1998-2006 and revealed the significant positive impact on cost and insignificant improvement on profitability. Besides, Abbas *et al.* (2014) ^[11] study also supported insignificant impact on mergers in

banking sector on the profitability, efficiency, leverage, and liquidity. Similar result observed the study of Beccalli and Frantz (2009) ^[10] post M&A banking operations were result in slight deterioration in profit efficiency and with a significant increase in cost efficiency. Haider *et al.* (2015) ^[7] study observed insignificant improvement of profitability, liquidity, leverage, capital adequacy, and size of small set of six bidder banks. Badrelin & Khalhoefer (2009) examined the effect of M&A on profitability of banking sector in Egypt and revealed that no clear evidence of effect. Shaban *et al.* (2019) ^[11] examined the impact M&A on banks performance (Jordan) with liking period of time and observed declined performance in first two years, but, gradual expansion in the subsequent years. This is attributed to the difficulties in managing the increased volume of assets after the M&A. Irfan Shakoor *et al.* (2014) ^[8] measured M&A impact on baking sector in four parameters. The study observed positive effect on liquidity negative impact on profitability, solvency, and investment performance.

Research Problem

The role of banking sectors in economic development is very significant by converting savings into investment activities (Mordi, 2002) which also leads to creation of wealth by facilitating capital formation, enhancing economic growth and development. (Dogarawa, 2011) ^[5]. It is observed from the above literature study that few studies observed positive impact of M&A on the banking sector Colić, Snežana *et al.* (2024) ^[4], Hussain Muhammad *et al.* (2019) ^[6], & Kumar (2013) ^[10]. In contrast some studies reported negative result Irfan Afza and Yusuf (2012), Badrelin & Khalhoefer (2009) & Haider *et al.* (2015) ^[7] and few studies revealed mixed result. Therefore, the exact impact of M&A in banking is still unsolved issues in banking sector, where present study emphasized. In India, recently many banks which undergone into PCA framework

was implemented in 2014 which result in technical write off of NPA and therefore after many banks merged. The present study is to explore whether there is a significant or insignificant impact on the performance of banks after the M&A.

Objectives of the Study: The present study is aimed to examine the impact of Mergers and Acquisition on the profitability, liquidity and asset quality of selected banks in India

Research Hypothesis

- H₁:** There is significant impact of M&A on the profitability of selected banks in India
- H₂:** There is significant impact of M&A on the liquidity of selected banks in India
- H₃:** There is significant impact of M&A on the asset quality of selected banks in India

Research Methodology

The present study an empirical research study focused on the examination of post merges and Acquisitions of selected banks for the period of eight years, which covers four years pre-M&A period 2016-17 to 2019-2020- and four-years post M&A period 2020-21 to 2023-24. The pre and post M&A on the bank performance is measured in three parameters i.e. profitability (NIM, Operating profit and Net Profit), Liquidity (high liquid assets) and Assets quality (GNPA, NNPA and Provisions). The study measured the impact of M&A on selected variables through using T- test two sample assuming unequal variance. The selected banks comprise of PNB where UBI and OBC merged, UBI bank where Andhra and corporation banks merged, Canara bank (CB) where Syndicated bank merged and Indian bank where Allahabad Bank. These mergers took effect from 1st April 2020.

Data of Mergers of Selected Banks in India

Banks	Banks	W.E. F
United Bank of India	Punjab National Bank (PNB)	April 1, 2020
Oriental Bank of Commerce		
Andhra Bank, corporation Bank	Union Bank of India (UBI)	April 1, 2020
Syndicate Bank		
Allahabad Bank	Canara bank (CB)	April 1, 2020
	Indian Bank (IB)	April 1, 2020

Source: RBI

Table 1: Profitability analysis of selected banks during pre and post merger (Rs Cr)

Bank Name	Before Merger					After Merger					Increases/Decrease (%)	T-test value P Values-Two tail
	2016-17	2017-18	2018-19	2019-20	AVG	2020-21	2021-22	2022-23	2023-24	AVG		
Net Interest Margin												
PNB	14993	14922	17156	17437	16127	30546	28694	34,492	40083	33454	107.44	0.00286
UBI	8903	9305	10215	11437	9965	24668	27786	32765	36570	30447	205.54	0.00224
CB	9872	12163	14478	13124	12409	24103	26384	31435	36566	29622	138.71	0.00420
IB	5146	6263	7018	7606	6508	15666	16728	20225	23274	18973	191.53	0.00212
AVG	9729	10663	12217	12401	11252	23746	24898	29729	34123	28124	149.95	0.00640
Operating Profit												
PNB	14565	10294	12995	14738	13148	22159	20762	22529	24931	22595	71.85	0.00070
UBI	7430	7640	7521	9181	7943	19667	21873	25467	28211	23805	199.70	0.00213
CB	8914	9548	10591	9360	9603	19689	23089	27716	29413	24977	160.10	0.00478
IB	4000	5000	4558	6498	5014	10966	12717	15270	16840	13948	178.18	0.00243
AVG	8727	8121	8916	9944	8927	18120	19610	22746	24849	21331	138.95	0.00418
Net Profit												

PNB	1324	-12283	-9975	336	-5149	2022	3457	2507	8245	4058	21.19	0.07107
UBI	555	-5247	-2947	-2898	-2634	2906	5232	8433	13648	7555	186.83	0.01760
CB	1122	-4222	347	-2236	-1247	2558	5678	10603	14554	8348	569.45	0.03029
IB	1406	1259	488	753	977	3005	3945	5282	8063	5074	619.34	0.03539
AVG	1102	-5123	-3022	-1011	-2013	2623	4578	6706	11128	6259	210.93	0.01462

Source: RBI Annual Report

Note: T test – Two sample Assuming unequal variance

Table 2: Liquidity analysis of selected banks during pre and post merger (Rs Cr)

	Before Merger					After Merger					Increases/ Decrease (%)	T-test value P Values- Two tail
	2016-17	2017-18	2018-19	2019-20	AVG	2020-21	2021-22	2022-23	2023-24	AVG		
Cash in Hand												
PNB	2098	2105	1854	2746	2201	3478	3492	3713	3553	3559	61.70	0.00637
UBI	1031	1290	1247	2004	1393	3782	3782	2839	2276	3170	127.57	0.00887
CB	1846	2649	3204	4598	3074	4400	4071	3914	3361	3937	28.07	0.23583
IB	319	500	1031	1006	714	1658	1962	1242	1304	1542	115.97	0.01507
Avg	1323.5	1636	1834	2588.5	1845	3329.5	3326.75	2927	2623.5	3052	65.42	0.01286
Cash with RBI												
PNB	23112	26684	30275	35652	28931	40481	82245	74464	61772	64741	123.78	0.01965
UBI	15490	19726	19549	18114	18220	34099	42331	47415	50622	43617	139.39	0.00650
CB	18076	19451	26715	17972	20554	38711	47532	51074	67706	51256	149.37	0.00874
IB	2939	10002	10671	4730	7086	25887	56592	31450	31398	36332	412.73	0.02632
Avg	14904	18966	21803	19117	18698	34795	57175	51101	52875	48987	161.99	0.00404
Bank Balances												
PNB	41122	37619	30959	17595	31824	39890	46881	53875	42939	45896	44.22	0.06609
UBI	16122	16379	14724	14688	15479	16976	17976	30615	38507	26018	68.09	0.13634
CB	32527	22092	25497	16021	24035	52598	58068	42873	41667	48802	103.05	0.00321
IB	195	2425	6086	6080	3696	14991	21349	12430	7414	14046	280.03	0.03313
Avg	22492	19629	19317	13596	18759	31114	36069	34948	32632	33691	79.60	0.00100
Money and shot call notice												
PNB	22000	29054	12200	20000	20814	27500	29.00	23058	23136	18431	-11.45	0.75152
UBI	180	12045	7525	20300	10013	29554	55411	31280	34512	37689	276.40	0.01293
CB	6376	5721	10737	29679	13128	82698	72383	43562	44099	60686	362.26	0.00884
IB	768	1.00	2232	2109	1278	8929	12.00	5010	1997	3987	211.97	0.27136
Avg	7331	11705	8174	18022	11308	37170	31959	25728	25936	30198	167.05	0.00209

Source: RBI Annual Report 2017-2024

Note: T test – Two sample Assuming unequal variance

Table 3: Asset quality analysis of selected banks during pre and post merger (Rs Cr)

	Before Merger					After Merger					Increases/ Decrease	T-test value P Values- Two tail
	2016-17	2017-18	2018-19	2019-20	AVG	2020-21	2021-22	2022-23	2023-24	AVG		
Gross Non-Performing Assets												
PNB	55370	86620	78473	73479	73486	104423	92448	77328	56343	82636	12.45	0.49046
UBI	33712	49370	48729	49085	45224	89788	79587	60987	43097	68365	51.17	0.10345
CB	34202	47468	39224	37041	39484	60288	55652	46159	40605	50676	28.35	0.08828
IB	9865	11990	13353	14150	12340	38455	35214	28179	21106	30739	149.10	0.01897
AVG	33287	48862	44945	43439	42634	73239	65725	53163	40288	58104	36.29	0.12402
Net Non-Performing Assets												
PNB	32702	48684	30038	27219	34661	38576	34909	22585	6799	25717	-25.80	0.34781
UBI	18832	24326	20332	17303	20198	27280	24303	12927	8990	18375	-9.03	0.71500
CB	21648	28542	22955	18250	22849	24442	18668	14349	11823	17321	-24.19	0.16481
IB	5606	5960	6793	6184	6136	12271	8847	4043	2223	6846	11.57	0.77756
AVG	19697	26878	20030	17239	20961	25642	21682	13476	7459	17065	-18.59	0.44257
Provision												
PNB	12704	24453	24434	14464	19014	16838	9056	15902	12345	13535	-28.82	0.19085
UBI	2537	4655	6032	13500	6681	11435	9304	13596	5585	9980	49.38	0.19085
CB	7438	14883	12723	10655	11425	0	9848	9737	9005	7148	-37.44	0.19085
IB	2077	3473	3616	4336	3376	7318	8447	6516	3653	6484	92.06	0.19085
AVG	6189	11866	11701	10739	10124	8898	9164	11438	7647	9287	-8.27	0.19085

Source: RBI Annual Report 2017-2024

Note: T test – Two sample Assuming unequal variance

Discussion on Result

In the study first objective is focused on the measures the pre and post profitability analysis of selected banks in three bottom line parameters such as NIM, operating profit and Net Profit (See table 01). The study observed, average NIM

of UBI is climbed by 205.54% during post M&A period followed by IB 191.53%, CB 138.71% and PNB only 107.44%. In overall, average NIM of all selected banks surged by 149.95% during post M&A period. Similarly, the

operating profit of UBI is climbed by an average of 199.70% during post M&A period followed by IB 178.18%, CB 160.10% and PNB only 71.85%. In overall, average operating profit of all selected banks surged by 138.95 % during post M&A period. In another parameter i.e. net profit, the study observed post M&A period highest of 619.34 % rise in Indian bank, followed by 569.45% rise in CB, 186.83 % rise in UBI and lowest rate is observed in the case of PNB i.e. 21.19 as compared to pre-M&A period. In overall, the average net profit of four selected banks net profit climbed by 210.93% during post M&A period. The study observed turnaround in three out of four banks during post M&A where huge loss during pre-M&A period turned into huge profits during post M&A.

The liquidity is second research variable assessed in the study, in the parameters of high liquid assets such as Cash in hand, cash with RBI, bank balances & money and short call notice (See table 02). The study observed that, average cash in hand of UBI rose with highest of 127.57%, followed by IB 115.975, PNB's 61.70% and at lowest rate of 28.07 % in the case of CB during post M&A period. During the same period average cash in hand of four banks rose by 65.42%. Similarly, average cash balances with RBI of all four banks during post M&A period rose by 161.99 %. The bank analyses witnessed highest rise of 412.73% in IB cash balances with RBI, followed by 149.37% of CB, 139.39% of UBI and 123.78% of PNB. The third parameter is bank balances. The study evidence for significant improvement in average bank balances during post M&A i.e. increased by 79.60%. The average bank balances of IB increased by highest of 280.03%, CB is 103.05 %, UBI's is 68.09 and lowest of 44.22% in the case of PNB. The last parameter is money and short call notice. The study observed that, during post M&A average money and short call notice of four banks rose by 167.0 %. The bank wise observation reveals that, 362.26 rose in Canara bank, 276.40% rose in the case of UBI, 211.97 % rose in the case of IB and decline by -11.45 % in the case of PNB.

The assets quality is third research variable which measured in the parameters of Gross Non-performing Assets, Net Non-Performing Assets and Provisions (See table 03). The study found that, the average GNPA of four selected banks increased by 36.29 % during post-merger period. The bank wise analysis revealed that highest rise in GNPA of IB i.e. 149.10% followed by 51.175 % of UBI, 28.35 of CB and lowest of 12.45 % in the case of PNB. Similarly, the study found that, the average NNPA of four selected banks declined by -18.59 % during post-merger period. The bank wise analysis revealed that highest decline in NNPA of PNB i.e. -25.80% followed by -24.19 % of CB, -11.57 of IB and lowest of -9.03 % in the case of UBI. Similarly, the average provisions of four selected banks declined by -8.27 % during post-merger period. The bank wise analysis revealed mixed result that decline in provision of PNB i.e. -25.80% and CB by -37.44 %, in contrast, increase in provision of UBI by 49.38% and IB by 92.06%.

Hypothesis Test Result

The hypothesis is examined the significant impact of M&A on three research variables such as profitability, liquidity and asset quality across the company. The study used t-test two sample assuming unequal variation. The first hypothesis result support that P values are less than standard value of 0.05 across the research variables (NIM, OP and NP) and

across the banks during post M&A period, (except Net Profit of PNB where P value > 0.05). In overall the statistical report suggests to accept first alternative hypothesis that "significant impact of M&A on the profitability of selected banks in India". Similarly, the P values of average liquidity variables is less than standard value of 0.005 in the case of our sub-variables cash in hand, 0.01286, cash with RBI 0.00404, bank balances 0.00100, money and short call notice 0.00209, which indicates acceptance of second alternative hypothesis i.e. significant impact of M&A on the liquidity of selected banks in India. However, the study observed insignificant impact across the banks and research variables. The third research variable is asset quality. The average p value is > than standard value 0.05 in three sub variables which suggest rejection of third alternative hypothesis and acceptance of null hypothesis. This implies insignificant impact of M&A on the asset quality of selected banks (except in the case of IB, GNPA where P value is >0.05 which indicates significant effect). However, in overall, t-test result proved the significant impact of M&A on the profitability and liquidity and insignificant impact on the asset quality, the study observed variation in effect across the banks. The study suggests that, impact of M&A on the bank's performance is heterogeneous in nature.

Conclusion

The study emphasized on the assessment of measuring the impact of mergers and acquisitions on the three research variables of profitability, liquidity and asset quality during pre and post M&A period of four selected banks in India. The study examined the hypothesis by adopting the t-test two sample assuming unequal variation. The statistical evidence provided that M&A shows significant impact on the profitability and liquidity which are similar to the result of Colić, Snežana et (2024) ^[4], Hussain Muhammad et al (2019) ^[6], Badrelin & Kahlhoefer (2009) & Kumar (2013) ^[10]. On the contrast, the study found insignificant effect of M&A on the asset quality of banking sector where result is similar to the outcome of mixed result Shaban et al. (2019) ^[11] & Irfan Shakoor et al. (2014) ^[8]. In overall, the study suggests need further extensive research on assessing the performance of banks during post M&A across the variables, banks and countries.

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