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An Insight into Banking Sector Mergers and Acquisition-BRICS Nations

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ABSTRACT

The banking and financial services (BFSI) sector is one of the most crucial areas in any economy. It is fastest growing and the listed players in this space has given high returns to the investors over the last decade. Commercial banks in the Indian context have witnessed radical changes in terms of enormous progression in off-balance sheet risk management of financial assets, regulatory amendments, NPA recognition norms, significant consolidation of the financial sector and introduction of e-commerce norms and online banking. In this context, Indian economy is similar to the other economies of BRICS countries. These countries are emerging economies with higher GDPs and undertaking various reforms to boost the consumption, transparency and business needs. So, it is pertinent to evaluate the M&A activities that have taken in India and other BRICS countries and comparing the same. This paper analyses the M&A that have taken place in India and other BRICS countries based on certain fundamental parameters which are based on regulatory requirements, profitability and overall returns on investments. The results of these tests indicate that there is insignificant change in most of parameters during post-merger phase. Further, other parameters showed a negative effect of merger on acquirer during post-merger period.

Keywords: Mergers and Acquisitions, BRICS, Financial Performance, Banking Sector
JEL Classifications: G34, G21

1. INTRODUCTION

Expanding business activities by way of organic or inorganic mode is an essential decision in terms of survival of business in today's world. In this context, mergers and acquisitions are one of the possible ways which can provide the expansion to the companies at a faster pace. Having said this, possible synergies arising from mergers and acquisitions is a much-debated issue in today's world. Certain theories which are based on efficiency and dominant market share argue in favour of mergers whereas most of the theories (especially in recent context) vote against the mergers due to agency cost, lack of integration and the cost paid for acquiring the firm.

In India, the service sector plays a significant role in terms of economic growth. The heterogeneous sector contributes ~60% of the gross domestic product (GDP) of India. Banking sector has been, over the years, is one of the top performers in terms of boosting the economic growth as well as in terms of the returns in the stock markets. However, recently, the sector has witnessed a down run due various issues, including governance and non-performing assets (NPA). Further, to resolve the issues especially in public sector banks, as recently as in August 2019, the Government of India (GOI) announced mergers of ten public sector banks into four banks, bringing down the total PSUs from 27 to 12. In this context, it pertinent to scrutinize the effects of M&As on banking sector and the effects it has on the merged entity in terms of its operations. Rationale for undertaking restructuring in the form of M&A has been provided below (Figure 1):

Indian economy is very similar with other BRICS countries (i.e. Brazil, Russia, China and South Africa). India is a growth engine in overall Asian economy so as the other BRICS countries in their respective continents. India's GDP growth rate for last 5 years ranged between 5% and 8% p.a. similar to the GDP growth rate other BRICS countries. India is a developing economy and moving towards more transparent eco-system. Various reforms have been made by India such as introduction of goods and services tax, making the approval process for business faster etc. These reforms are in similar to the reforms that have implemented in Brazil and China which has undertaken various measures to improve the business environment and transparency.

These countries have different regulatory system for banking sector, however, there is close resemblance in terms of the economic structure of these countries. These countries are called as fast-growing economies which are challenging the developed economies across the world. Therefore, research paper have tried to analyze brownfield expansion undertaken by the banks in these countries and related the results with the wealth created by Indian banks.

1.2. Indian Mergers

In India, service sector plays an important role and contributes approximately 60% of the GDP. The financial services sector (which includes banks) have major pie of the service sector output and hence is one of the important components of the economy. The sector has outperformed all the other sectors in terms of performance and is the fundamental to the growth of an economy. The growth story of the banking industry is expected to continue despite the recent downturn in economic growth indicators and NPA issues faced by the industry as the downturn is cyclical and the economy is expected to revive over a period of time given the strong fundamentals of Indian economy.

Following Figure 2 provides the outline of banking sector in Indian Context:

In this backdrop, M&As play an imperative role in shaping the economy especially in the context of banking sector. M&A activities have seen huge rise in numbers after the LPG Policy implemented in 1991 and various reforms that were implemented in terms of sector limits for Foreign Direct Investments (FDI).

M&As have been carried out in Indian sectors for variety of reasons which include, reviving the weak banks, operational efficiencies, market expansion, consolidation of the sector etc. Analyzing the past mergers of banking sector in India, provides an insight that they took place to protect the interests of weak bank customers, but later some mergers also took place voluntarily in the post-liberalization time for other reasons. The fastest growing Indian economy, has maintained its leadership, despite the global financial crisis that took place in 2008. The primary growth drivers of India are domestic consumption and investments. During the period 2005-2015, 19 mergers took place in India. Entire data relating to these mergers and the other BRICS countries have been in the Data Analysis section.

2. LITERATURE REVIEW

The banking sector has been analyzed from many perspectives especially in terms of acquisitions and mergers. Various studies have analyzed the impression of M&As on financial parameters such as profitability, return on investment/assets, stock prices

Figure 1: Business choices and drivers

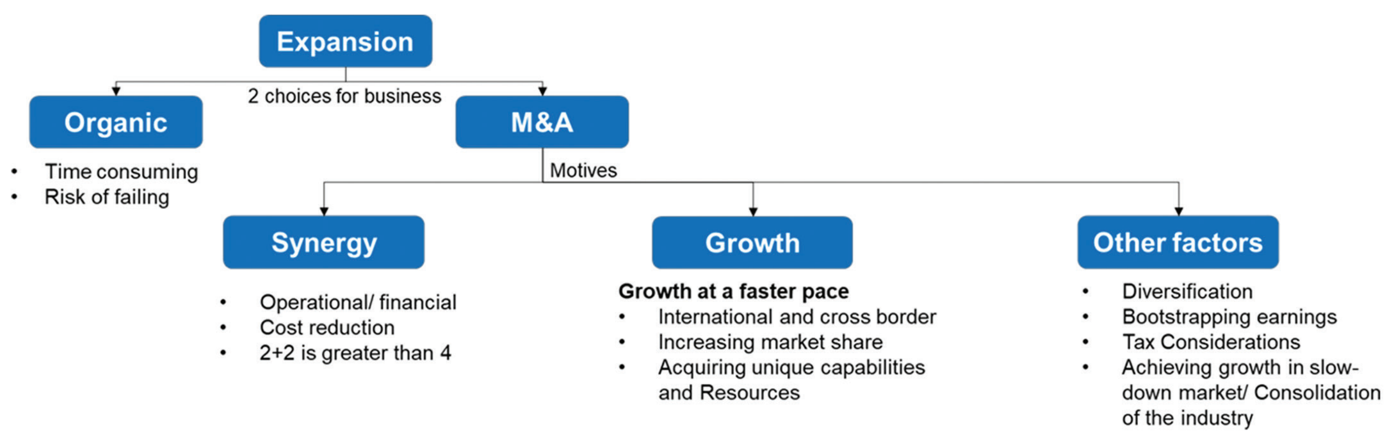
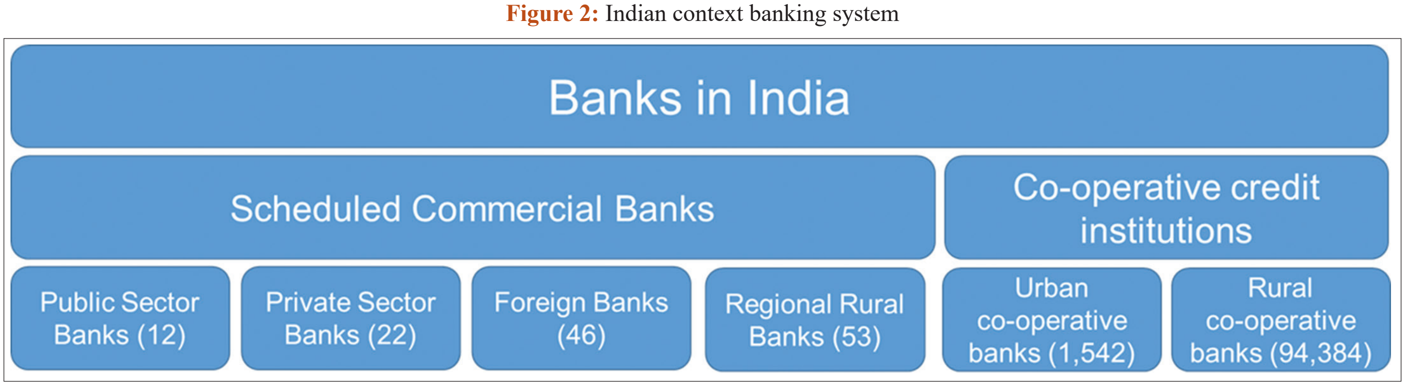


Figure 2: Indian context banking system



etc. Past research reflects that mergers and acquisitions at banks have produced combination of positive and negative results in performance of these banks during after merger period.

Mehta and Kakani (2006) through their study came to a conclusion that merger strategy is imperious for the state to create large banks. The motives behind the merger and acquisitions in the Indian banking sector that have taken place post 2000 was highlighted by Revathy (2011). In the study conducted by Kumar and Kuriakose (2010) an attempt was made to access the strategic and financial similarities of both public and private sector banks. They concluded that although private banks were in favour of voluntary restructuring but public banks were reluctant to do so. A study with regard to merger and acquisitions in the Indian banking industry post liberalization was done by Dutta and Dawn (2012) who critically examined the reasons for mergers and analyzed whether the mergers attained success of not. Shobhana and Deepa (2012) in their study with respect to six selected mergers of Indian banks tried to determine the shareholder's value creation consequent to merger announcements during the post liberalization period. They concluded that shareholder's wealth declined when the securities were more prone to market risk, and when the market risk of the public and private sector banks were same as that of the benchmark portfolio, there was an increase in the shareholder's wealth. Ramakrishnan (2010) in his study with respect to companies listed in BSE, found that on an average, only the shareholders of the acquired firm appear to enjoy significant wealth gains. Ghosh and Dutta (2015) analysis the M&As undertaken in the BFSI sector using certain ratios. These ratios include, CAR (i.e. capital adequacy ratio), human capital return on investment, ROCE (i.e. return on capital employed), EPS (earning per share) and changes in loans and advances post-merger period. The period analyzed under this research was from 2000 to 2010 based on the data for 10 mergers that have taken place. The finding of their analysis was that there was no significant change in the performance of the Indian banks during post-merger period. Dr. (Mrs.) Athma and Bhavani (January, 2018) has done analysis of the M&As in respect of HDFC Bank and State Bank of India (SBI). The paper analyses the merger of HDFC Bank with Centurion Bank and SBI with State Bank of Sourastra. The analysis was on the following parameters in respect of pre and post-merger period:

a. Deposits/employee and per branch
b. Advanced/employee and per branch
c. Profits/employee and per branch
d. Productivity ratio/employee and per branch.

The conclusion of the aforesaid study was that in both the cases, overall growth was observed in key parameters.

Further, as discussed above, the event study was conducted in Anand and Singh (2008), to analyze the impact of share price movement due to merger announcements. It scrutinized 5 mergers in the Indian banking sector which includes banks like ICICI, HDFC, Oriental Bank of Commerce and Centurian Bank. They concluded the merger announcements in the Indian banking industry have positive and significant shareholder wealth effect for bidder and target banks.

3. OBJECTIVE

The basic rationale of undertaking a merger can be questioned in a scenario where the performance of the merged entity does not show any enhancements, as anticipated at the time of the merger, in the long run. Hence, the rationale of the study is to analyse the M&A that has taken place in India and other BRICS countries. The paper tries to scrutinize whether mergers in banking sector have led to the enhancement in performance of acquirer bank or whether the same has deteriorated over a period.

The study analyses the pre and post effect of merger in case of acquirer in Indian context. Further, the analysis is done how Indian acquirers have performed in comparison with the other BRICS countries' acquirers in the banking industry. Given the similar nature of the economies, the study tries to identify whether Indian banks have performed better than the other BRICS counter-parts.

BRICS countries have different regulatory system for banking sector, however, there is close resemblance in terms of the economic structure of these countries. These countries are often called as fast-growing economies challenging the developed economies. They are the fastest growing largest economies. BRICS countries have large populations and vast territories. BRICS countries over the past decade have majorly contributed to the GDP growth of the world. Also, according to certain economists, BRICS countries are expected to overtake G7 countries by the year 2027.

Further, BRICS countries believe:
- In the establishment of sustainable peace and improving the transparency in the respective countries
- In the robust commitment to international law and implementation of the same
- That development and security are closely interlinked.

The approach of BRICS countries coincides on global issues international economic and financial situation, reform of the Bretton Woods Institutions, trade protectionism, climate change and food and energy security.

Given the aforesaid backdrop, the investigation of the study is to understand the pre-merger and post-merger effect on the acquirer in terms of various parameters as listed in methodology section. These factors have been designed to analyze the profitability, meeting of regulatory requirements, changes in share prices (underlying the market capitalization), return of assets and capital, ratio of non-performing assets (NPA). Therefore, these factors provide a holistic approach to analyze the performance of acquired company. Further, given the similarities between India and other BRICS countries, the result of the study could provide an insight into whether the pattern of result is similar in Indian context or they differ in other BRICS countries. That could give an insight into whether the merger activities in these countries are carried out in certain different manner. The analysis proposes to also undertake study mergers that have taken place in BRICS countries (except India) to evaluate their overall impact.

The paper proposes to analyze the mergers in these countries and provide an insight into the variations that have taken place in the fundamentals of the banks. These insights can be used by managers of the BFSI sector before taking any decision in respect of mergers or acquisitions.

4. RESEARCH GAP

There are various papers published which attempts to analyze the mergers and acquisitions. Further, specific analysis is conducted to analyze the effect of brownfield expansion undertaken by banks. As stated above, in Ghosh and Dutta (2015) the analysis of certain parameters of acquirer was undertaken in the banking sector for the period 2000-2010.

However, these studies do not analyze the M&As that has happened in Indian banking sector and comparison of the same with the M&A of other BRICS countries. Further, they have not tried to attempt in any factor that has an impact on mergers undertaken in these countries. The study has not been undertaken to evaluate the mergers on the basis of the various parameters as cited above. The research in this paper is conducted for the period of 3 years pre and post-merger, each. The reason for selecting the 3 year period is that the impact of merger has to be assessed for long-term period. Often, the integration in terms of culture and merger takes more than years to fructify. Therefore, the assumption underlying the 3 years period is that the merger has been integrated and the synergy effect will be shown in the parameters that have been considered will be reflected.

Further, there have been other studies which tried to capture the event study i.e. the effect of merger on the share price of the companies and the effect of the announcement of merger on acquirer and acquire. However, the current study does not take into consideration the immediate impact of the announcement on mergers and only considers the long-term impact (i.e. period of 3 years) on the merger. Therefore, the same is not an event study but analysis of various parameters over the long-term period.

5. METHODOLOGY

As stated above, this study analyses mergers and acquisition undertaken in BRICS countries (including India) during the period 2005-2015. The changes in the performance heights/levels of the banks in the post-merger period have been compared with the pre-merger phase by use of selected financial parameters. The analysis undertaken from acquirer's perspective and data for the study has been taken from Bloomberg terminal.

Below mentioned parameters have been chosen to evaluate the pre and post-merger effects on the banks:
- Growth rate in market capitalization
- CAR (i.e. capital adequacy ratio)
- ROC (i.e. return on capital)
- ROA (i.e. return on assets)
- NPA (i.e. NPA/assets) ratio
- Efficiency ratio
- NIM (i.e. net interest margin)
- OM (i.e. operating margin)
- PTM (i.e. pre-tax margin)
- NM (i.e. net margin)
- AP/BV (i.e. average price to book value ratio).

Following is the null hypothesis for the tests which are conducted:

H_0: There is insignificant difference/change in the specific parameter for a given country during the pre-merger and post-merger period.

H1: There is a significant difference/change in the specific parameter for a given country during the pre-merger and post-merger period.

The study have conducted Kolmogorov-Smirnov test to check the normality of the data. Given that are only 19 data points, the results showed that the data was not normally distributed. Therefore, the study have undertaken Wilcoxon Paired Sign-Rank Test to compare the results at a 95% confidence interval.

The confidence interval of 95% is considered as the data could have high variance due to mergers that have been considered over the period of 10 years. Therefore, higher confidence interval of 10 years may not show the appropriate result. Further, the samples in each of the countries do not exceed ~30 and hence, higher confidence interval may not provide desired output.

6. DATA ANALYSIS AND FINDINGS

The data collected from Bloomberg terminal was used for the purpose of statistical analysis. The study attempts to analyze the fundamental factors of the banks during post-merger period and accordingly, null and alternate hypothesis have been defined. The analysis tries to find out whether there was any impact, negative or positive in post-merger period of the acquirer banks. Further, Kolmogorov-Smirnov test was conducted to check the normality of the data. Based on the results of normality, the paired t-test was performed with a 95% confidence level for parameters and the Wilcoxon Paired Test was calculated for factors that do not follow the normal distribution[1].

6.1. Mergers in Case of Indian Banks

During 2005-2015, 19 mergers have happened in the banking sector in India and the same are listed below (i.e. Table 1). Analysis of these banks have been undertaken in ensuing paras.

6.2. Data Analysis and Results

As depicted in the Table 2, there was insignificant change in majority of the ratios during pre-merger and post-merger period. However, 3 ratios viz. return on capital (ROC), return on assets (ROA) and net margin ratio (NM) has decreased substantially. Therefore, there is no positive impact of merger on acquired bank basis the analysis undertaken for 3 years period.

1 Given that the data for evaluating the mergers were less, Wilcoxon Test has been applied in most of the cases.

Table 1: Merger of Indian Banks

Sr. No	Announce date	Completion date	Target name	Acquirer name	Announced total value (USD Mn)
1	February 23, 2008	July 16, 2008	Centurion Bank of Punjab Ltd	HDFC Bank Ltd	2816.64
2	November 20, 2014	September 2, 2015	ING Vysya Bank Ltd	Kotak Mahindra Bank Ltd	1214.63
3	April 10, 2015	July 27, 2015	Diamond and Jewellery financing business/India	IndusInd Bank Ltd	658.83
4	May 18, 2010	August 24, 2010	Bank of Rajasthan Ltd	ICICI Bank Ltd	542.63
5	December 9, 2006	April 19, 2007	Sangli Bank Ltd	ICICI Bank Ltd	67.15
6	February 14, 2006	March 31, 2007	Bharat Overseas Bank Ltd	Indian Overseas Bank	38.44
7	October 29, 2009	December 13, 2010	Tengri Bank JSC	Punjab National Bank	N/A
8	June 1, 2009	June 1, 2009	Nepal SBI Bank Ltd	State Bank of India	N/A
9	November 1, 2012	November 1, 2012	Stock Holding Corp of India Ltd	IDBI Bank Ltd	N/A
10	September 3, 2013	September 3, 2013	Bank of India Indonesia Tbk PT	SBI	N/A
11	June 22, 2007	June 22, 2007	Bank of India Indonesia Tbk PT	Bank of India	N/A
12	January 25, 2006	January 25, 2006	Ganesh Bank of Kurundwad Ltd	Federal Bank Ltd	N/A
13	November 7, 2005	November 7, 2005	Giro Commercial Bank Ltd	SBI	N/A
14	November 7, 2005	November 7, 2005	Bank IndoMonex PT	SBI	N/A
15	November 7, 2005	December 15, 2006	Bank IndoMonex PT	SBI	N/A
16	May 19, 2005	May 19, 2005	Investitsionno-Kreditny Bank	ICICI Bank Ltd	N/A
17	February 3, 2005	February 3, 2005	SBI Mauritius Ltd	SBI	N/A
18	July 15, 2008	November 25, 2008	SBI Mauritius Ltd	SBI	N/A
19	August 14, 2008	August 14, 2008	State Bank of Saurashtra	SBI	N/A

Merger of Bank of Punjab and Lord Krishna Bank with Centurion Bank of Punjab Ltd has not been considered in the aforesaid list as Centurion Bank of Punjab Ltd was taken over by HDFC Bank within 2 years of the acquisition

Table 2: Results of Indian Banks

Parameter	Mean (pre) (%)	Mean (post) (%)	P-value	Result	Remarks
Growth rate in market capitalization	36.36	22.52	0.053	Can't reject Null hypothesis	There is insignificant difference in growth rate of market capitalization in post-merger period
Cap. adequacy ratio	13.35	14.19	0.198	Can't reject null hypothesis	No significant difference in capital adequacy ratio in post-merger period
Return on capital (ROC)	7.03	5.46	0.016	Reject null hypothesis	There is significant difference in ROC in post-merger period. ROC has gone down during the same period
Return on assets (ROA)	1.18	1.01	0.022	Reject null hypothesis	There is significant difference in ROA in post-merger period. ROA has gone down during the same period
NPA ratio (i.e. NPA/assets)	1.41	1.74	0.314	Can't reject Null hypothesis	There is insignificant difference in NPA ratio in post-merger period
Efficiency ratio	56.70	55.88	0.717	Can't reject null hypothesis	There is insignificant difference in efficiency ratio in post-merger period
Net interest margin (NIM)	3.20	2.99	0.147	Can't reject null hypothesis	There is insignificant difference in NIM in post-merger period
Operating margin (OM)	31.77	28.35	0.064	Can't reject null hypothesis	There is insignificant difference in operating margin in post-merger period
Net margin (NM)	23.30	19.88	0.030	Reject null hypothesis	There is significant difference in net margin in post-merger period. NM has gone down during the same period
Pre-tax margin	32.59	28.47	0.053	Can't reject null hypothesis	There is insignificant difference in pre-tax margin in post-merger period
Average price to book value ratio	1.91	2.06	0.295	Cannot reject null hypothesis	There is insignificant difference in average price to book value ratio in post-merger period

6.3. Mergers in Case of Chinese Banks

During the period 2005-2015, 19 mergers happened in the banking sector in China and the same are listed below (i.e. Table 3). Analysis of these banks have been undertaken in ensuing paras.

6.4. Data Analysis and Results

As depicted in the Table 4, there was insignificant change in majority of the ratios during pre-merger and post-merger period. However, 3 ratios viz. capital adequacy ratio, efficiency ratio and price to book value ratio has shown substantial deviations in the pre and post period. The Capital Adequacy ratio has been improved while the other two ratios has declined in the post-merger period. Therefore, there is no substantial impact of merger on acquired bank basis the analysis undertaken for 3 years period in China.

6.5. Mergers in Case of Brazilian Banks

During the period 2005-2015, 20 mergers happened in the banking sector in Brazil and the same are listed below (i.e. Table 5). Analysis of these banks have been undertaken in ensuing paras.

6.6. Data Analysis and Results

As depicted in the Table 6, there is a significant change in pre and post-merger ratios in Brazil. The majority of the ratios have been deteriorated post-merger and therefore, based on the aforesaid

Table 3: Mergers of Chinese Banks

Sr. No	Announcement date	Completion date	Target name	Acquirer name	Announced total value (USD Mn)
1	September 2, 2010	August 5, 2011	Ping An Bank Co Ltd/Old	Ping An Bank Co Ltd	2816.64
2	June 2, 2008	January 16, 2009	CMB Wing Lung Bank Ltd	China Merchants Bank Co Ltd	1214.63
3	August 10, 2010	December 21, 2010	Industrial and Commercial Bank of China Asia Ltd	Industrial and Commercial Bank of China Ltd	658.83
4	June 2, 2008	September 30, 2008	CMB Wing Lung Bank Ltd	China Merchants Bank Co Ltd	542.63
5	August 24, 2006	December 29, 2006	China Construction Bank Asia Corp Ltd	China Construction Bank Corp	67.15
6	December 23, 2014	August 27, 2015	CITIC International Financial Holdings Ltd	China CITIC Bank Corp Ltd	38.44
7	May 8, 2009	October 23, 2009	CITIC International Financial Holdings Ltd	China CITIC Bank Corp Ltd	N/A
8	January 29, 2014	February 1, 2015	ICBC Standard Bank PLC	Industrial and Commercial Bank of China Ltd	N/A
9	October 31, 2013	September 1, 2014	China Construction Bank Brasil Banco Multiplo SA	China Construction Bank Corp	N/A
10	8/5/2011	12/4/2012	Standard Investments SA SGFCI/ Argentina,Inversora Diagonal SA,Industrial and Commercial Bank of China Argentina SA	Industrial and Commercial Bank of China Ltd (ICBC Ltd)	N/A
11	August 29, 2006	January 29, 2008	Seng Heng Bank Ltd	ICBC Ltd	N/A
12	August 29, 2007	January 28, 2008	Seng Heng Bank Ltd	ICBC Ltd	N/A
13	April 29, 2014	May 22, 2015	ICBC Turkey Bank AS	ICBC Ltd	N/A
14	October 28, 2010	July 19, 2012	ICBC-AXA Assurance Co Ltd	ICBC Ltd	N/A
15	January 24, 2011	July 6, 2012	Industrial and Commercial Bank of China USA NA	ICBC Ltd	N/A
16	July 16, 2015	August 21, 2015	ICBC Turkey Bank AS	ICBC Ltd	N/A
17	January 19, 2012	August 18, 2012	Ping An Bank Co Ltd/Old	Ping An Bank Co Ltd	N/A
18	December 4, 2012	November 30, 2012	Standard Investments SA SGFCI/ Argentina,Inversora Diagonal SA,Industrial and Commercial Bank of China Argentina SA	ICBC Ltd	N/A
19	December 31, 2006	September 28, 2007	Bank ICBC Indonesia PT	ICBC Ltd	N/A

Table 4: Results of Chinese Banks

Parameter	Mean (pre) (%)	Mean (post) (%)	P-value	Result	Remarks
Growth rate in market capitalization	7.14	1.88	0.658	Can't reject null hypothesis	There is insignificant difference in growth rate of market capitalization in post-merger period
Cap. adequacy ratio	12.44	12.96	0.004	Reject null hypothesis	There is a significant difference in CAR. The ratio has improved during post-merger period
Ret. on capital (ROC)	7.26	6.63	0.107	Can't reject null hypothesis	There is insignificant difference in ROC in post-merger period
Ret. on assets (ROA)	1.20	1.22	0.968	Can't reject null hypothesis	There is insignificant difference in ROA in post-merger period
NPA ratio (i.e. NPA/ assets)	1.11	0.765	0.171	Can't reject null hypothesis	There is insignificant difference in NPA ratio in post-merger period
Efficiency Ratio	40.46	37.32	0.001	Reject null hypothesis	There is a significant difference in efficiency ratio in post-merger period
Net interest margin (NIM)	3.08	2.93	0.147	Can't reject null hypothesis	There is insignificant difference in NIM in post-merger period
Operating margin (OM)	49.07	49.71	0.872	Can't reject null hypothesis	There is insignificant difference in operating margin in post-merger period
Net margin (NM)	36.72	37.84	0.968	Can't reject null hypothesis	There is significant difference in net margin in post-merger period. NM has gone down during the same period
Pre-tax margin	48.73	49.14	0.99	Can't reject null hypothesis	There is insignificant difference in pre-tax margin in post-merger period
Average price to book value ratio	2.56	1.64	0.00	Reject null hypothesis	There is significant difference in average price to book value ratio in post-merger period

Table 5: Merger of Brazilian Banks

Sr. No	Announcement date	Completion date	Target name	Acquirer name	Announced total value (USD Mn)
1	November 3, 2008	March 31, 2009	Unibanco Holdings SA e Previdencia	Itau Unibanco Holding SA	11699.59
2	November 21, 2008	March 17, 2009	Banco Nossa Caixa SA	Banco do Brasil SA	2191.1
3	May 2, 2006	August 8, 2006	Bank of America Brasil Ltda/Old	Itau Unibanco Holding SA	2171.82
4	May 14, 2013	December 23, 2013	CitiFinancial Promotora de Negocios e Cobranca SA,Banco Citicard SA	Itau Unibanco Holding SA	1377.58
5	June 5, 2009	November 25, 2009	Banco ibi SA Banco Multiplo, ibi Corretora de Seguros Ltda, ibi Promotora de Vendas Ltda, ibi Participacoes Ltda	Banco Bradesco SA	716.63
6	August 9, 2006	September 1, 2006	Bancboston ops/Chile	Itau Unibanco Holding SA	650
7	May 23, 2011	May 23, 2011	Banco do Estado do Rio de Janeiro SA	Banco Bradesco SA	626.8
8	April 21, 2010	April 12, 2011	Banco Patagonia SA	Banco do Brasil SA	480.22
9	January 22, 2009	April 9, 2010	Banco Nossa Caixa SA	Banco do Brasil SA	410.59
10	January 24, 2007	August 1, 2007	Banco Bradesco Financiamentos SA	Banco Bradesco SA	376.12
11	December 21, 2005	December 21, 2005	Banco do Estado do Ceara SA – BEC	Banco Bradesco SA	303.74
12	September 12, 2008	February 27, 2009	Banco Estado de Santa Catarina SA	Banco do Brasil SA	294.73
13	November 28, 2006	November 28, 2006	Bank Boston Trust Co Ltd, Bank Boston International	Itau Unibanco Holding SA	155
14	June 26, 2013	November 5, 2013	Banco Intercap SA	Banco Indusval SA	49.16
15	November 30, 2011	May 22, 2012	Banco do Estado do Rio de Janeiro SA	Banco Bradesco SA	25.46
16	November 11, 2008	November 11, 2009	Banco do Estado do Piaui SA	Banco do Brasil SA	19.59
17	April 25, 2011	January 19, 2012	Banco do Brasil Americas	Banco do Brasil SA	6
18	September 29, 2011	December 31, 2011	Retail Banking Business/Chile	Itau Unibanco Holding SA	N/A
19	June 28, 2013	June 28, 2013	Retail business/Uruguay	Itau Unibanco Holding SA	N/A
20	December 12, 2014	December 1, 2015	Daycoval Leasing-Banco Multiplo SA	Banco Daycoval SA	N/A

Table 6: Results of Brazilian Banks

Parameter	Mean (pre) (%)	Mean (post) (%)	P-value	Result	Remarks
Growth rate in market capitalization	15.17	2.47	0.025	Reject null hypothesis	There is a significant difference in growth rate of market capitalization in post-merger period. The same has deteriorated
Cap. Adequacy Ratio	16.84	15.82	0.033	Reject null hypothesis	There is a significant difference in CAR. The ratio has deteriorated during post-merger period
Ret. on Capital (ROC)	4.99	2.89	0.00	Reject null hypothesis	There is a significant difference in ROC in post-merger period. The same has deteriorated
Ret. on assets (ROA)	1.83	1.32	0.00	Reject null hypothesis	There is a significant difference in ROA in post-merger period. The same has deteriorated
NPA ratio	2.51	3.35	0.079	Can't reject null hypothesis	There is insignificant difference in NPA ratio in post-merger period
Efficiency ratio	62.02	66.26	0.823	Can't reject null hypothesis	There is a significant difference in efficiency ratio in post-merger period
Net interest margin (NIM)	7.31	6.34	0.019	Reject null hypothesis	There is a significant change in NIM in post- merger period
Operating margin (OM)	18.38	12.29	0.033	Reject null hypothesis	There is a significant difference in operating margin in post-merger period
Net margin (NM)	14.49	11.31	0.135	Can't reject null hypothesis	There is insignificant difference in net margin in post-merger period
Pre-tax margin	19.04	13.79	0.048	Reject null hypothesis	There is a significant difference in pre-tax margin in post-merger period
Average price to book value ratio	2.38	1.89	0.001	Reject null hypothesis	There is significant difference in average price to book value ratio in post-merger period

empirical evidence, it can be concluded that the merger has substantial negative effect on Brazilian banks. Except NPA Ratio, Efficiency ratio and Net Margin Ratio, all the ratios considered have deteriorated in post-merger period.

6.7. Mergers in Case of Russian Banks

During 2005-2015, 28 mergers happened in the banking sector in Russia and the same are listed below (i.e. Table 7). Analysis of these banks have been undertaken in ensuing paras.

6.8. Data Analysis and Results

As depicted in the Table 8, there was insignificant change in majority of the ratios during pre and post-merger period. However, 2 ratios viz. Net Interest Margin and average price to book value ratio has shown substantial changes in the pre and post merger period. Both the ratios have declined in the post-merger period. Therefore, there is no substantial impact of merger on acquired bank basis the analysis undertaken for 3 years period in Russia.

Table 7: Merger of Russian Banks

Sr. No	Announcement date	Completion date	Target name	Acquirer name	Announced total value (USD Mn)
1	June 8, 2012	September 28, 2012	DenizBank AS	Sberbank of Russia PJSC	3542.52
2	April 11, 2011	November 7, 2013	Trans Credit Bank OAO	VTB Bank PJSC	972.94
3	September 8, 2011	February 15, 2012	Sberbank Europe AG	Sberbank of Russia PJSC	898.61
4	April 14, 2008	October 30, 2008	Bank VTB North-West	VTB Bank PJSC	326.47
5	November 15, 2007	December 29, 2007	Bank VTB North-West	VTB Bank PJSC	248.25
6	February 25, 2011	February 25, 2011	BM Bank AO	VTB Bank PJSC	247.09
7	September 5, 2012	September 5, 2012	Cetelem Bank LLC	Sberbank of Russia PJSC	157.97
8	June 5, 2007	December 27, 2007	Sberbank of Russia JSC	Sberbank of Russia PJSC	150
9	December 23, 2011	December 23, 2011	Sberbank Switzerland AG	Sberbank of Russia PJSC	80.47
10	January 23, 2014	February 11, 2014	IKB Evropejskij Bank ZAO	Bank St Petersburg PJSC	18.31
11	December 10, 2009	December 14, 2009	BPS-Sberbank OJSC	Sberbank of Russia PJSC	0
12	July 20, 2011	July 15, 2011	Trans Credit Bank OAO	VTB Bank PJSC	N/A
13	February 13, 2009	February 13, 2009	Dalcombank	MTS-Bank PAO	N/A
14	May 5, 2012	April 30, 2012	Bezhitsa Bank JSC	VTB Bank PJSC	N/A
15	May 18, 2012	May 18, 2012	Rossiyskiy Natsionalny Kommercheskiy Bank OJSC	BM Bank AO	N/A
16	April 22, 2013	April 22, 2013	Korporativny Torgovy Bank	VTB Bank PJSC	N/A
17	February 21, 2012	February 21, 2012	Rossiyskiy Natsionalny Kommercheskiy Bank OJSC	BM Bank AO	N/A
18	January 18, 2011	July 1, 2011	Banque Societe Generale Vostok,Delta Credit Bank JSC,Rusfinans Bank OOO	Rosbank PJSC	N/A
19	July 10, 2015	December 31, 2015	Pervyi Obiedineonnyi Bank OAO	Promsvyazbank PJSC	N/A
20	July 16, 2010	July 16, 2010	Novosibirsk Municipal Bank AO	Khanty-Mansiysk bank Otkritie PAO	N/A
21	July 25, 2006	July 25, 2006	SB Sberbank JSC	Sberbank of Russia PJSC	N/A
22	October 7, 2013	December 31, 2013	Certain Russian assets	VTB Bank PJSC	N/A
23	February 14, 2014	February 14, 2014	Bashprombank OAO	UralSib Bank PJSC	N/A
24	December 22, 2006	December 22, 2006	Uralvneshtorgbank OAO	Binbank PAO	N/A
25	July 4, 2008	December 9, 2008	VTB Bank Azerbaijan OJSC	VTB Bank PJSC	N/A
26	February 22, 2008	May 2, 2008	Bezhitsa Bank JSC	BM Bank AO	N/A
27	October 7, 2008	October 6, 2008	Bezhitsa Bank JSC	BM Bank AO	N/A
28	November 10, 2008	January 11, 2009	Potentsial Bank OOO	CB Solidarnost OJSC	N/A

6.9. Mergers in South Africa

During the period 2005-2015, 11 mergers happened in the banking sector in India and the same are listed below (i.e. Table 9). Analysis of these banks have been undertaken in ensuing paras.

6.10. Data Analysis and Results

As depicted in the Table 10, there was insignificant change in majority of the ratios during pre and post-merger period. However, 2 ratios viz. capital adequacy ratio and return on capital has shown substantial changes in the pre and post M&A period. Capital adequacy ratio has improved whereas return of capital has decreased substantially during the post-merger period. Therefore, there is no substantial impact of merger on acquired bank basis the analysis undertaken for 3 years period in South Africa.

6.11. Combined BRICS Countries (Excluding India)

Analysis has been undertaken for all the mergers undertaken between the period 2005 and 2015 in all BRICS countries excluding India. In this case, paired t test has been applied for evaluating the results. Following (i.e. Table 11) is the summary of results:

There was insignificant change in majority of the ratios. However, 4 ratios as highlighted above have deteriorated during post-merger period.

6.12. Summary of the Analysis

As can be seen from the above summary (i.e. Table 12), in all the countries except Brazil, there is no substantial effect on various parameters of the merged banks. In Brazil, however, majority of the ratios have deteriorated as compared with the pre-merger period. Capital adequacy ratio has shown positive effect in respect of China and South African Banks.

As depicted in the above table, following ratios have shown deterioration in the context of all the BRICS countries (excluding India) has been deteriorated:

Table 8: Results of Russian Banks

Parameter	Mean (pre) (%)	Mean (post) (%)	P-value	Result	Remarks
Growth rate in market capitalization	0.06	0.07	0.58	Can't reject null hypothesis	There is insignificant difference in growth rate of market capitalization in post-merger period
Cap. Adequacy ratio	15.92	15.11	0.19	Can't reject Null Hypothesis	There is insignificant difference in CAR during post-merger period
Ret. on capital (ROC)	3.93	0.57	0.59	Can't reject Null Hypothesis	There is insignificant difference in ROC in post-merger period
Ret. on assets (ROA)	1.12	0.40	0.23	Can't reject Null Hypothesis	There is insignificant difference in ROA in post-merger period
NPA ratio (i.e. NPA/assets)	4.94	6.29	0.90	Can't reject Null Hypothesis	There is insignificant difference in NPA ratio in post-merger period
Efficiency ratio	41.05	39.38	0.60	Can't reject Null Hypothesis	There is insignificant difference in efficiency ratio in post-merger period
Net interest Margin (NIM)	5.73	4.77	0.00	Reject null hypothesis	There is a significant difference in NIM in post-merger period. NIM has deteriorated in post-merger period
Operating margin (OM)	30.31	22.56	0.70	Can't reject Null Hypothesis	There is no significant difference in operating margin in post-merger period
Net margin (NM)	14.61	5.92	0.51	Can't reject Null Hypothesis	There is insignificant difference in net margin in post-merger period
Pre-tax margin	19.84	8.15	0.31	Can't reject Null Hypothesis	There is insignificant difference in pre-tax margin in post-merger period
Average price to book value ratio	1.89	1.21	0.00	Reject null hypothesis	There is significant difference in average price to book value ratio in post-merger period

Table 9: Mergers of Russian Banks

Sr. No	Announcement date	Completion date	Target name	Acquirer name	Announced total value (USD Mn)
1	November 21, 2006	August 20, 2007	Stanbic IBTC Holdings PLC	Standard Bank Group Ltd	400
2	August 14, 2009	March 12, 2010	IBL Asset Finance and Services Pty Ltd	Nedbank Group Ltd	220.28
3	December 22, 2005	January 1, 2006	South African Branch Business	Absa Group Ltd	90.7
4	October 25, 2007	October 31, 2007	Old Mutual Bank	Nedbank Group Ltd	21.31
5	March 19, 2008	November 14, 2008	Meeg Bank Ltd	Absa Group Ltd	11.02
6	September 12, 2011	September 12, 2011	Finance Bank Zambia Ltd	FirstRand Ltd	N/A
7	June 18, 2010	June 18, 2010	Capital Hill Corporate Finance	Sasfin Holdings Ltd	N/A
8	May 15, 2009	June 1, 2009	Nedbank Private Wealth Jersey Ltd	Nedbank Group Ltd	N/A
9	May 15, 2009	June 1, 2009	BoE Private Bank	Nedbank Group Ltd	N/A
10	May 31, 2005	May 31, 2005	ING's Argentine unit	Standard Bank Group Ltd	N/A
11	November 30, 2006	November 30, 2006	Banco Desenvolvimiento e Comercio	FirstRand Ltd	N/A

Table 10: Results of Russian Banks

Parameter	Mean (pre) (%)	Mean (post) (%)	P-value	Result	Remarks
Growth rate in market capitalization	0.17	0.08	0.29	Can't reject null hypothesis	There is insignificant difference in growth rate of market capitalization in post-merger period
Cap. adequacy ratio	13.34	15.38	0.01	Reject null hypothesis	There is a significant difference in CAR. The ratio has improved during post-merger period
Ret. on capital (ROC)	12.28	8.31	0.02	Can't reject Null Hypothesis	There is insignificant difference in ROC in post-merger period
Ret. on assets (ROA)	1.68	1.35	0.13	Can't reject Null Hypothesis	There is insignificant difference in ROA in post-merger period
NPA ratio (i.e. NPA/ assets)	1.89	2.86	0.13	Can't reject Null Hypothesis	There is insignificant difference in NPA ratio in post-merger period
Efficiency ratio	58.78	59.31	0.59	Reject null hypothesis	There is a significant difference in efficiency ratio in post-merger period
Net interest margin (NIM)	4.51	4.12	0.53	Can't reject Null Hypothesis	There is insignificant difference in NIM in post-merger period
Operating margin (OM)	31.99	27.73	0.10	Can't reject Null Hypothesis	There is insignificant difference in operating margin in post-merger period
Net margin (NM)	22.62	20.43	0.06	Can't reject Null Hypothesis	There is significant difference in net margin in post-merger period. NM has gone down during the same period
Pre-tax margin	32.27	28.32	0.06	Can't reject Null Hypothesis	There is insignificant difference in pre-tax margin in post-merger period
Average price to book value ratio	2.12	1.8	0.29	Reject null hypothesis	There is significant difference in average price to book value ratio in post-merger period

Table 11: Combined BRICS results (excluding India)

Parameter	Mean (pre) (%)	Mean (post) (%)	P-value	Result	Remarks
Growth rate in Market Capitalization	10.20	4.99	0.247	Can't reject Null Hypothesis	There is insignificant difference in growth rate of market capitalization in post-merger period
Cap. Adequacy Ratio	14.87	14.86	0.962	Can't reject Null Hypothesis	There is insignificant difference in CAR during post-merger period
Ret. on Capital (ROC)	6.19	3.85	0.002	Reject null hypothesis	There is a significant difference in ROC in post-merger period
Ret. on assets (ROA)	1.39	0.95	0.032	Reject null hypothesis	There is a significant difference in ROA in post-merger period
NPA Ratio (i.e. NPA/ Assets)	2.93	3.67	0.096	Can't reject Null Hypothesis	There is insignificant difference in NPA ratio in post-merger period
Efficiency ratio	48.54	48.13	0.826	Can't reject Null Hypothesis	There is insignificant difference in efficiency ratio in post-merger period
Net interest margin	5.26	4.62	0.001	Reject null hypothesis	There is a significant difference in NIM in post-merger period
Operating margin	32.23	27.85	0.141	Can't reject null hypothesis	There is insignificant difference in operating margin in post-merger period
Net margin	21.11	17.08	0.136	Can't reject null hypothesis	There is insignificant difference in net margin in post-merger period
Pre-tax margin	28.47	23.02	0.080	Can't reject Null Hypothesis	There is insignificant difference in pre-tax margin in post-merger period
Average price to book value ratio	2.22	1.59	0.00	Reject null hypothesis	There is significant difference in average price to book value ratio in post merger period

6.13. Capital Adequacy Ratio (CAR) and Return on Capital (ROC)

Basel III norms state that the CAR should be 8% (i.e. CAR is ratio of capital to risk weighted assets). As provided in the aforesaid table, the mean CAR is much higher than 8 but has decreased over the periods post-merger substantially. One of the most important reason in this context is managing the NPAs due to which risk weighted assets have increased leading to decrease in the ratio. The NPAs of post-merger period has increased leading to higher provision/ providing for loss assets thereby, decreasing the return on capital of the banks substantially. The same is the case with Brazil and South Africa as is the case with India. Further, some of the mergers are stemming out of the regulator and hence, this is one of the factors which explains the rationale for decrease in the aforesaid ratios.

6.14. Net Interest Margin

Net Interest Margin for Brazil and Russia has shown negative effect substantially. This is because of the cost of funds have increased and the net spread between the interest has decreased. This is more so

Table 12: Summary of the analysis

Parameter	India	China	Brazil	Russia	South Africa	Combined BRICS
Growth rate in market capitalization	No effect	No effect	Negative effect	No effect	No effect	No effect
Cap. adequacy ratio	No effect	Positive effect	Negative effect	No effect	Positive effect	Negative effect
Ret. on capital (ROC)	Negative effect	No effect	Negative effect	No effect	Negative effect	Negative effect
Ret. on assets (ROA)	Negative effect	No effect	Negative effect	No effect	No effect	No effect
NPA ratio (i.e. NPA/Assets)	No effect	No effect	No effect	No effect	No effect	No effect
Efficiency Ratio	No effect	Positive effect	No effect	No effect	No effect	No effect
Net interest margin (NIM)	No effect	No effect	Negative effect	Negative effect	No effect	Negative effect
Operating margin (OM)	No effect	No effect	Negative effect	No effect	No effect	No effect
Net margin (NM)	Negative effect	No effect	No effect	No effect	No effect	No effect
Pre-tax margin	No effect	No effect	Negative effect	No effect	No effect	No effect
Average price to book value ratio	No effect	Negative effect	Negative effect	Negative effect	No effect	Negative effect

relevant where the economic uncertainties and unstable environment which existed in Brazil and Russia. Further, both the countries faced the issue of higher economic growth during the period under consideration leading to drop in interest margins of the banks as overall corporates in these countries have not performed well.

6.15. Average Price to Book Value

Given the adverse ROC and Net interest margin ratio and the challenges faced by the economies in terms of growth, average price to book value of the banks have fallen in merged entities. Further, this decrease is attributable to the mergers of state-controlled banks merging with others in different territories initiated by the regulator/government.

7. CONCLUSION

This paper studied various parameters that can verify whether the merger in Indian and BRICS countries can be concluded as a success. The parameters chosen were fundamental to the performance of the bank. Banking sector is fundamentally different from other sectors in terms of its business operations. It operates under the asset light model and its assets and revenue source includes loans and advances that it has made against the liabilities which are in the form of deposits from the customers, corporates etc. Further, it is highly regulated by the regulator (i.e. RBI) and hence, the parameters chosen for analyzing banking sector are different from the parameters that are otherwise chosen for analyzing any other industry. The parameters are chosen from the perspective that analysis of all the BRICS countries can be undertaken.

To check on the regulatory aspect, capital adequacy ratio has been considered. To understand the increase in real share price, growth in market price is evaluated. Further, to check the returns on capital and assets, ROC and ROA are analyzed. NPA ratio has been evaluated to understand the increase/ decrease in NPAs of the merged entity during post-merger period. Profitability ratios such as operating margin, net interest margin (NIM), pre-tax margins and net margins are considered. All of these ratios encompass the operations of banks and considers regulatory, profitability and return on investment aspects.

The mergers that have happened during 2005-2015 has been analyzed. Further, period of 3 years pre-merger and post-merger was considered for the evaluation.

As stated in the aforesaid table (i.e. Table 12), in the Indian context, return on capital (ROC), return on assets (ROA) and net margin had shown substantial negative impact. All the other parameters were fairly constant and did not show a significant change.

However, in the context of BRICS countries, on a combined study of 4 factors showed the significant degrade in the post-merger period viz. CAR, ROC, net interest margin and average price to book value. Brazil, as a standalone country has performed worst in terms of post-merger performance of banking sector.

The aforesaid conclusion will be beneficial for the bankers who are proposing to undertake mergers and acquisition. Basis the empirical evidence and analysis of the data from 2005 to 2015, it can be concluded that the synergies especially in the form of cost savings which are attributable to banking sector cannot be realized in actual scenario though they could be seen at the time of taking the decision of merger. This is supported by the fact that all the BRICS countries have shown no significant impact on net margins. In fact, India's mergers have shown negative impact on the same. Therefore, it is difficult to realize the synergies that were forecasted at the time of mergers. This also can be concluded from the results that NPA ratio has shown no impact in pre and post-merger period which shows that the negative impact, if any, due to merger is not due to the bad asset quality which is being taken over. This is a positive conclusion which is in favour of mergers as at least the asset quality has not been deteriorated which further means that the reporting of the assets on balance sheet is reasonably fair for the period under consideration.

Therefore, on a whole, managers can look at the Brazilian mergers and can look at the situation which should not be applied/the rationale for mergers should not be used/implementation of the merger should not be done in the similar way. Further, the analysis largely provides that the overall effect of the merger has not a substantial impact and therefore, whenever, managers are valuing the banking company, they should be conservative in terms of synergies that they will be valuing. Therefore, higher premium, over and above the intrinsic value is a danger sign for the managers.

Another use of the study is to analyze whether the company should do an M&A or should undertake a greenfield expansion.

In this respect, the costs in relation to greenfield expansion can be estimated with reasonability and are under the control of the management. However, the cost paid for acquiring a company in real sense is not only the purchase price but also the integration expenses which acquirer has to undertake. In this context, there is no substantial improvement over the pre-merger period fundamentals and hence, all the managers have to look at the target in a skeptical manner and should look at the worst-case scenario before undertaking mergers.

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