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.
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 imperative 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 Surastra. The analysis was on the following parameters in respect of pre and post-merger period:

- Deposits/employee and per branch
- Advanced/employee and per branch
- Profits/employee and per branch
- 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:
- 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:

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

\[ H_1: \text{There is a significant difference/change in the specific parameter for a given country during the pre-merger and post-merger period.} \]

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.

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.

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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, 2005 | Bank IndoMonex PT                  | SBI                            | N/A                           |
| 16     | May 19, 2005      | May 19, 2005    | Investitionno-Kredinity 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 significant 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 significant difference in NIM in post-merger period |
| Operating margin (OM)            | 31.77          | 28.35           | 0.064   | Can’t reject null hypothesis | There is significant 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       |
| Pre-tax margin                        | 48.73          | 49.14          | 0.99    | Can’t reject null hypothesis | There is significant 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 Cticard SA | Itau Unibanco Holding SA | 1377.58                       |
| 5      | June 5, 2009      | November 25, 2009 | Banco ibi SA Banco Múltiplo, i Bi Corretora de Seguros Ltda, i Bi Promotora de Vendas Ltda, i Bi Participacoes Ltda | Banco Bradesco SA | 716.63                        |
| 6      | August 9, 2006    | September 1, 2006 | Baneboston 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 Múltiplo 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 Naztsionalny Kommercheskiy Bank OJSC | BM Bank AO | N/A |
| 16     | April 22, 2013    | April 22, 2013   | Korporativny Torgovy Bank Rossiyskiy Naztsionalny Kommercheskiy Bank OJSC | VTB Bank PJSC | N/A |
| 17     | February 21, 2012 | February 21, 2012 | Rossiyskiy Naztsionalny 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 Obiedineonnny Bank OAO | Promsvyazbank PJSC | N/A |
| 20     | July 16, 2010     | July 16, 2010    | Novosibirsk Municipal Bank AO | Khanty-Mansiysk bank Otkrite 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:

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Table 8: Results of Russian Banks

| Parameter Description            | 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 (ROE)            | 3.93           | 0.57            | 0.59    | Can’t reject Null Hypothesis | There is insignificant difference in ROE 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 significant difference in net margin in post-merger period     |
| Pre-tax margin                   | 19.84          | 8.15            | 0.31    | Can’t reject Null Hypothesis | There is significant 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 Desenvolvimento 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 significant 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 significant 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 significant difference in NIM in post-merger period  |
| Operating margin (OM)                  | 31.99          | 27.73           | 0.10    | Can’t reject Null Hypothesis | There is significant 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 significant 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 a significant 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 significant difference in NPA ratio in post-merger period  |
| Efficiency ratio                       | 48.54          | 48.13           | 0.826   | Can’t reject Null Hypothesis | There is significant 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 significant difference in operating margin in post-merger period |
| Net margin                             | 21.11          | 17.08           | 0.136   | Can’t reject null hypothesis | There is significant difference in net margin in post-merger period  |
| Pre-tax margin                         | 28.47          | 23.02           | 0.080   | Can’t reject null hypothesis | There is significant difference in pre-tax margin in post-merger period |
| Average price to book value ratio      | 2.22           | 1.59            | 0.000   | 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...
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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