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MEASURING THE OPERATING PERFORMANCE OF THE ACQUIRER BANK IN THE PRE & POSTPERIOD: MERGER BETWEEN ING VYSYA BANK & KOTAK MAHINDRA BANK

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Abstract

Mergers & acquisitions (M&As) are universally applied strategies for business development and sustainability as it helps the banking industry in the successive development of small or weaker banks. M&As increases the ability of the weaker banks to achieve growth and prosperity in the market. Furthermore, M&A provides the scope for expansion of market share, reducing competition and upgradation of technology. The paper attempts to measure the effect of M&As on the operating performance of the acquirer bank in the Indian banking industry. For the purpose, the merger between Kotak Mahindra Bank (KMB) (acquirer bank) and ING Vysya Bank has been undertaken. The present paper has examined a total of 16 variables, which involves liquidity, leverage, solvency and profitability ratios of KMB in its pre- merger (Y-1, Y-2, Y-3, Y-4, Y-5)) and post- merger period (Y+1, Y+2, Y+3, Y+4, Y+5). To determine the significant difference in the pre-merger and post-merger mean values, paired t-test has been applied with the 5% significance level. The results demonstrated that the liquidity performance of the bank has improved, however, leverage, solvency and profitability position has not changed significantly in the post-merger period. The results depicts that cash and cash equivalents, fixed asset turnover ratio, advances to total assets, equity ratio, current ratio, interest coverage ratio, net profit and operating profit has positively impacted the acquirer bank in the post-merger period, however remaining other variables has not contributed significantly in improving the operating performance of the acquirer bank

Keywords: Mergers & Acquisitions, operating performance, financial performance, liquidity, leverage, solvency and profitability

1. Introduction

Mergers & acquisitions (M&As) can be defined as a conversion of two or more entities into one single business. The unification of one or more than one business concern, under one single entity through purchase or against common interests can be treated as M&A.The major reasons for involving the business in a merger can be enhancement of market share and market position, combating competition, upgrading technology and firm's efficiency by blending the resources of entities involved in the merger. Nowadays, in most of the developed countries, M&As are considered to be among the popular trends for expanding the business and the trend is now being followed in developing countries as well[1]. M&As are universally applied for the attainment of business sustainability and development. Uniting two or more two separate entities under one big heading is a merger, however, capturing some other entity for similar reasons is treated as a merger.

The banking industry has faced significant manifestations concerning financial globalisation and financial liberalisation. The shift towards privatisation of banks, restructuring the banking sector, the shift of banks towards global platforms and the expansions in bank mergers has proved to be the most prominent benchmarks of financial liberalisation which has made the banking sector recognise on the global platforms. M&A in the banking sector has been acknowledged as a necessity as it helps in the development of small scale banks. The increment in the growth and prosperity of small scale banks, successive technological up-gradation, orientation with large economic alliances develops the merged banks which indicate the development of the overall banking sector. The development is possible when the large-scale banks pour up significant contribution in financing bulky investment projects in order to plan, program and proceed with the economic development[2].

The banking industry has contributed significantly to the economic development of the country. In the last thirty years, Indian banks had witnessed a number of reforms which has reframed the Indian banking system. Indian commercial banks are categorised into Scheduled and Non- Scheduled Banks. Schedule II of the Reserve Bank of India Act, 1934 carried the Scheduled banks while the others were under the category of Public sector, Private Sector and Foreign Banks. Public sector banks included the nationalised banks, regional rural banks and State Bank of India. However, the old, as well as the new private sector banks fall into the category of Private sector banks. The sponsorship for the regional rural banks was given by the state or central government or particular banks for their operations in the rural areas[3].

M&As are being treated as one of the significant strategies for the achievement of growth in the banking sector and has been applied as a significant tool across the globe which induced even the Indian banking industry to indulge in M&As. The purpose of M&A is to serve greater market expansion, growth, and to reduce competitive beings in the business. However, M&A is an extremely strategic move for the business concerns which can bring positive, as well as negative aspects, to the business. The acquiring entity needs to focus on a number of parameters before indulging in a merger deal wherein a complete check of the target company's financial positioning is extremely significant. Financial analysis is a procedure where businesses are evaluated in terms of suitability and performance. In order the test the effectiveness of M&A

[1]Shah, B. A., & Khan, N. (2017). Impacts of mergers and acquisitions on acquirer banks' performance. *Australasian Accounting, Business and Finance Journal*, *11*(3), 30-54.
[2]Shah, B. A., & Khan, N. (2017). Impacts of mergers and acquisitions on acquirer banks' performance. *Australasian Accounting, Business and Finance Journal*, *11*(3), 30-54.
[3]Patel, R. (2018). Pre & post-merger financial performance: An Indian perspective. *Journal of Central Banking Theory and Practice*, *7*(3), 181-200.

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activity, financial performance analysis canbe used for the determination of an entity's solvency, liquidity, leverage, profitability and market positioning to ensure the productivity of investment made for the merger[4].

In this paper, the frontier approach is being used to test the effectiveness of the merger activity within the banking sector in India. In order to find out the significant differences in the pre and post-merger scenario of the acquirer company, a window framework is being applied to locate the financial performance of the banks involved in the merger. The remainder of the research paper is organised in several sections where section 2 is problem statement, section 3 is literature review, section 4 is research methodology, section 5 is analysis & interpretation,section 6 is conclusion & recommendations and chapter 7 is limitation of study.

2. Literature Review

Sujud & Hachem (2018), examined the relationship in the pre-merger (2000- 2003)) and post-merger (2004-2007) performance of the Audi- Sardar Group of Lebanon by analysing three ratios, return on assets (ROA), Return on equity (ROE) and Earning per Share (EPS). The relationship declared that there is a slight improvement in ROE and ROA, however, a substantial increase in EPS was observed, which states that thereis no significant change in the profitability position of the bank. The merger of banks does not guarantee higher returns on the equity or assets or on overall profitability. The acquirer bank has to be cautious while cracking a merger deal and a detailed analysis should be followed to avoid the possibility of negative impacts on the financial performance of the bank post its merger. On the other hand, a positive impact can be acknowledged from the bank merger on the capital adequacy, efficiency of management, banks assets and liquidity performance[5]. In support, Patel (2017) presents that comparing the profitability position of selected Indian banks in the pre-and post- merger between 2003 to 2014 has shown up negative impact on the ROA, ROE, the yield on investment, the yield on advance and net profit ratio. However, a positive trend has been noticed on EPS, Business per employee and profit per employee. The investments, assets, advances and equity increased post-merger, however, they all are being underutilised which decreases the yields. The profitability position of all selected banks has improved in the post-merger scenario[6].

As per the views of Küçükkocaoğlu & Bozkurt, (2018), globalisation has given the opportunities to the emerging markets to gather pools of financing by which the foreign banks can engage themselves in the M&As and partnerships. Banks are considered as the backbone of the financial system and they had intervened in the M&As activity at a higher rate for meeting the competition within the industry. The post-merger financial performance of selected Turkish banks was undertaken by using Probit Model and CAMEL Model within the study. It was observed that the Turkish banks did not make expected success post-merger as the M&A activity has led to the diminishing effect on the management capability, liquidity performance, asset

[4]Mehrotra, A., & Sahay, A. (2018). Systematic review on financial performance of Mergers and Acquisitions in India. *Vision*, *22*(2), 211-221.
[5]Sujud, H., & Hachem, B. (2018). Effect of mergers and acquisitions on performance of Lebanese banks. *International Research Journal of Finance and Economics*, *166*, 69-77.

[6]Patel, R. (2018). Pre & post-merger financial performance: An Indian perspective. *Journal of Central Banking Theory and Practice*, *7*(3), 181-200.

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quality and market risk. The study revealed that the Turkish banks did not contribute much to achieving economies of scale through M&A. The overall profitability and growth did not do much for the Turkish banks through the M&A activity. The expected benefits were not realised in comparison with the costs incurred for the Turkish banks' merger[7]. However, Ombaka & Jagongo, (2018) states that the Kenyan banking industry is experiencing an upsurge in the M&A activity for inhaling the fruitful benefits of M&As. Enormous benefits are associated with M&A, which has led to the increase in the attractiveness of mergers on the global platform which has made it a trend in the financial industry. Nine Kenyan banks were undertaken in the study which got merged between 2010 to 2017 to examine the effect of M&A on the respective bank. The study revealed that the indicators of M&A which includes risk diversification, differential efficiency, operational synergy and market share development have influenced the financial performance of Kenyan banks significantly. The variables demonstrated a 98.2% change in the financial performance of Kenyan commercial banks. The indicators of M&A provided an improvement of 0.755 in the operational synergy, 0.886 in the differential efficiency, 0.885 in the risk diversification and 0.959 increment market share development which led to the improvement in the financial performance of the Kenyan commercial banks[8].

According to Mehrotra & Sahay (2018), India experienced the wave of M&A after the liberalisation policy of 1991. The liberalisation policy removed the industrial licensing, as well as lifted up the MRTP Act (Monopolistic Trade and Restrictive Practices) which brought M&As into the limelight. The strategies brought a new emerging scenario within India where a combined business structure became a measure to combat competitive structures within the economy. The empirical study revealed that there is a consistent benefit to the acquired firms' shareholders, as M&A increases over their shareholder value, however, no positive returns or negative returns are being achieved in the post-merger scenario. The profitability position of the acquirers moved in a negative direction in the post-merger period. There is an increase in the operating cash flows as there is an increase in the productivity of assets post-merger. Moreover, in the long run, M&A does not provide significant gains in the wealth of the shareholders in respect to the acquirer companies[9]. On the other hand, Anthony (2017), explored the financial performance of 16 commercial banks of Kenya whose merger happened between 1999 to 2005. Theoretically, the presumption is made that M&A will provide the bank with synergies such as risk diversification, profitability enhancement and market power. However, the study revealed that ROE & ROA are being impacted positively, as the t value rose from 20.582 to 23.249 & 6.351 to 11.271. Moreover, there is an increase in the t value of the Capital adequacy ratio (CAR) which has risen to 21.764 from 19.064 which improved the financial leverage of the bank in the post-merger period. In addition, the solvency position of the bank has also been influenced in a positive manner as t values increased to 39.351 from 34.194. The companies or banks experiencing difficulties in the market environment should opt for mergers as it would multiply profit margins not only for the acquirers and acquis but also for the shareholders of both the parties as M&As adds wealth for

[7]Küçükkocaoğlu, G., & Bozkurt, M. A. (2018). Identifying the effects of mergers and acquisitions on Turkish banks performances. *Asian Journal of Economic Modelling*, *6*(3), 235-244.
[8]Ombaka, C., & Jagongo, A. (2018). Mergers and acquisitions on financial performance among selected commercial banks, Kenya. *International Academic Journal of Economics and Finance*, *3*(1), 1-23.
[9]Mehrotra, A., & Sahay, A. (2018). Systematic review on financial performance of Mergers and Acquisitions in India. *Vision*, *22*(2), 211-221.

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the shareholders. M&As provides growth for both the financial institution, as well as for the shareholders in a separate form[10].

In the viewpoint of Singh & Das (2018), the banking industry of a country plays a significant role in driving the nation's economy, which requires it to perform in an efficient manner with respect to its reforms and processes. With respect to the Indian economy, the banking sector's reform process is associated with the strategic agenda of the government which aims the integration and repositioning of the banking sector of India into the entire financial system on the global platform. In order to build a sound banking structure, Indian banking has undergone a set of changes in the last several years concerning operations, the structure of ownership and the number of institutions. In order to develop a better and sound financial system, M&As has been adopted as a strategic alliance by the Indian banking sector for availing synergies on the domestic, as well as global platform. With the announcement of the merger in the market, negative reactions are being observed within the market, which includes there is either creation or destruction over the wealth of shareholders within both the sets of banks (private or public) and slightly positive or no abnormal returns over the acquirer bank's stock. However, with respect to target companies, positive abnormal returns are being observed. Stock prices expose the expectations of the market in regard to future cash flows, on the contrary, there can be the difference in the actual performance and the market expectations[11]. In addition, Sharma (2018), examined three banks mergers of the banking industry of Nepal to analyse the impact of M&A on the financial performance of the bank. For this purpose, three bank mergers are being considered for the study which includes Global Bank Ltd. (GIBL), NIC ASIA bank Ltd. (NICASIA) and Machhapuchhre Bank Ltd. (MBL). The Market Value per share (MPS) and EPS of all three banks increased which consequently increased shareholder value. Cash Deposit (CD) ratio, capital adequacy ratio and ROA are observed to be in an increasing trend which suggests that there was a positive impact on the banks in the post-merger phase, as the banks are able to avail the synergies of M&A after the merger of the banks[12].

3. Research Methodology

3.1 Problem Statement

M&As is a trending technique for expansion and growth in developed countries and the trend is followed by the developing nation as well[13]. In the last several years, the Indian economy is also facing glimpses of the merger trend, especially in the banking industry. There are banks that have undergone with M&As in order to meet the capital requirements for their survival. This creates the need to evaluate the effectiveness of the merger activity on the financial performance of the banks to justify the success of a merger which can help the struggling banks within the

[10]Anthony, M. U. G. O. (2017). Effects of merger and acquisition on financial performance: case study of commercial banks. *International Journal of Business Management & Finance*, *1*(6), 93-105.
[11]Singh, S., & Das, S. (2018). Impact of post-merger and acquisition activities on the financial performance of banks: A study of Indian private sector and public sector banks. *Revista Espacios Magazine*, *39*(26), 25.
[12]Sharma, K. P. (2018). EFFECT OF BANKS'MERGER AND ACQUISITION IN NEPAL: STUDY OF SELECTED BANKS. *KAAV International Journal of Law, Finance and Industrial Relations*, *5*(1), 41-52.

[13]Al-Sharkas, A. A., Hassan, M. K., & Lawrence, S. (2008). The impact of mergers and acquisitions on the efficiency of the US banking industry: further evidence. *Journal of Business Finance & Accounting*, *35*(1-2), 50-70.

industry to make out significant decisions. Therefore, the present research is undertaken to investigate the financial performance analysis of the acquirer bank in its pre and post-merger period within the Indian banking sector.

3.2 ***Objectives of Study***

The present research examines and analyses the effect of M&As on the operating performance of the acquiring bank concerning its liquidity, leverage, solvency and profitability performance. The possible aftermaths of M&A are being determined to test the effectiveness of M&As in the banking industry within India.

3.3 ***Theoretical Framework***

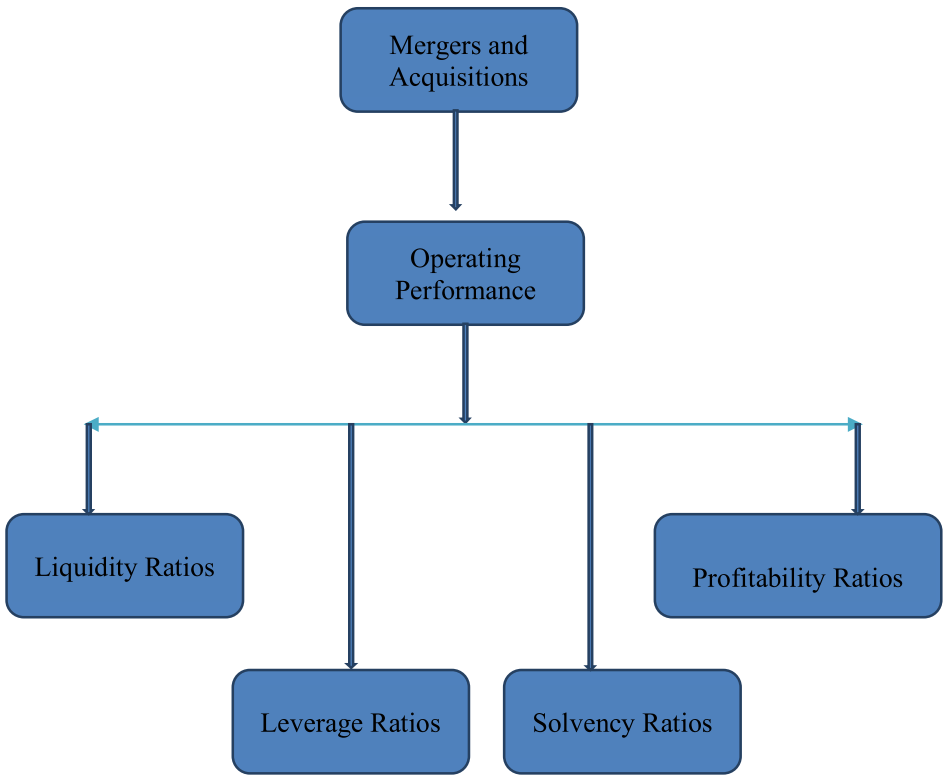

Figure 1: Theoretical Framework

3.4 ***Hypothesis***

The present research has developed the research hypothesis on the basis review of literature and the theoretical framework.

H0: There is no significant difference between the pre and post-merger operating performance of the bank.

H1: There is a significant difference in the pre and post-merger operating performance of the bank.

- Hypothesis testing through liquidity: $H_0: \bar{x}_1 = \bar{x}_2; \; H_1: \bar{x}_1 \neq \bar{x}_2$

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- Hypothesis testing through leverage: $H_0: \bar{x}_1 = \bar{x}_2$; $H_1: \bar{x}_1 \neq \bar{x}_2$
- Hypothesis testing through solvency: $H_0: \bar{x}_1 = \bar{x}_2$; $H_1: \bar{x}_1 \neq \bar{x}_2$
- Hypothesis testing through profitability: $H_0: \bar{x}_1 = \bar{x}_2$; $H_1: \bar{x}_1 \neq \bar{x}_2$

Here, $\bar{x}_1$ symbolises the pre-merger operating performance before the merger and $\bar{x}_2$ symbolises the post-merger operating performance after the merger.

3.5 Measurement of Variables

For analysing the effects of M&A on the operating performance of banks, a list of variables is being used. The pre-average performance (denoted with $\bar{x}_1$)of five years before the merger, (denoted withY-1, Y-2, Y-3, Y-4, Y-5) is being compared with the post average performance (denoted with $\bar{x}_2$)offive years after the merger(denoted with Y+1, Y+2, Y+3, Y+4, Y+5) of the banks under consideration. The merger year is denoted with Y_0, however, the year of the merger is not being undertaken for performance measurement for eliminating the impact of merger cost. In order to measure the acquirer banks' operating performance, financial parameters of the theoretical framework (Figure-3.1) has been appliedwhich includes liquidity ratios, leverage ratios, solvency ratios and profitability ratios. The variables which are being used for the measurement of banks' operating performance are stated in figure – 3.2.

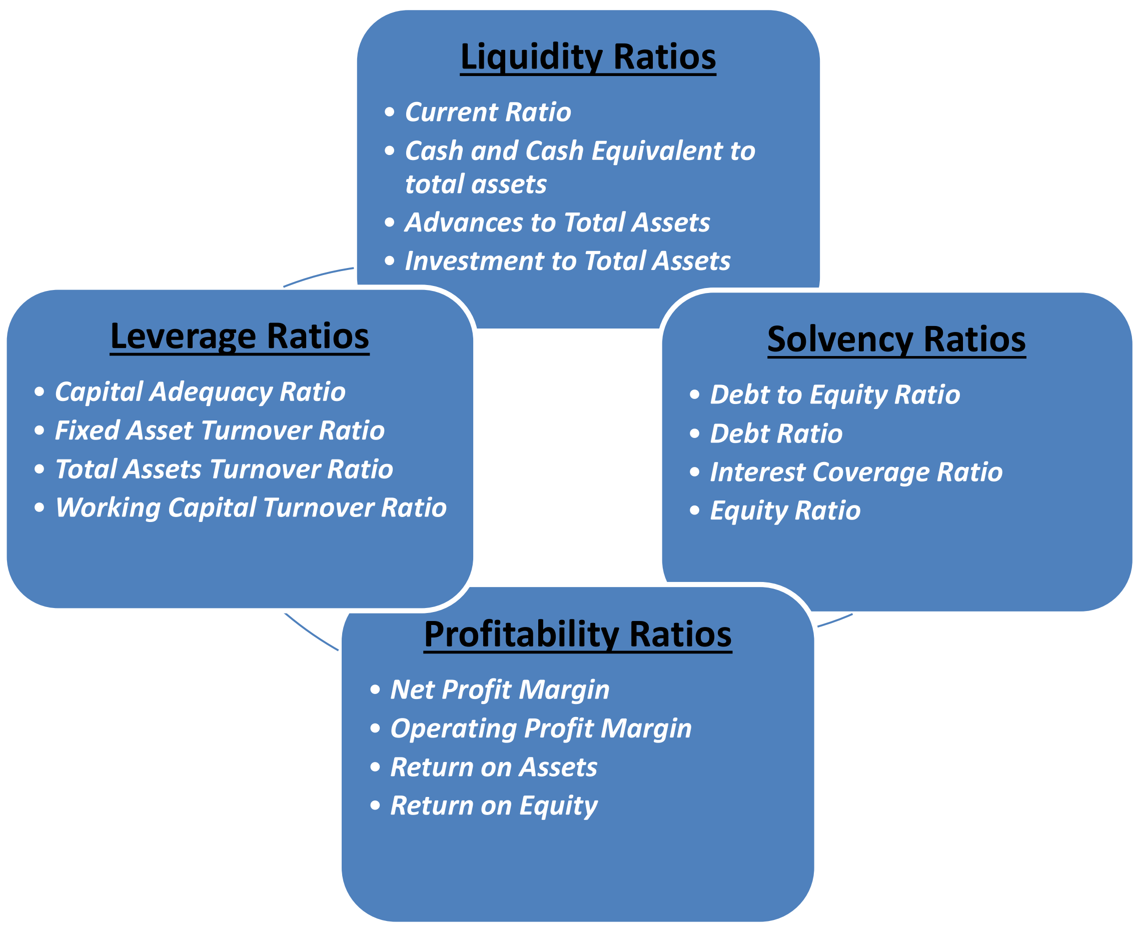

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Figure2: Variables of the Study

Variables of the Study	
Particulars	*Formulae*
Liquidity Analysis	
Current Ratio	*(Current Assets/ Current Liabilities)*
Cash and Cash Equivalent to total assets	(Cash + Cash Equivalent)/ Total Assets * 100
Advances to Total Assets	(Advances/Total Assets)*100
Investment to Total Assets	(Investment / total assets)*100
Leverage Analysis	
Capital Adequacy Ratio	*Capital Funds/ Risk-Weighted Assets*
Fixed Asset Turnover Ratio	*Net Sales/ Average Fixed Assets*
Total Assets Turnover Ratio	*Net Sales/ Average Total Assets*
Working Capital Turnover Ratio	*Net Sales/ Average Working Capital*
Solvency Analysis	
Debt to Equity Ratio	*Total Liabilities/ Total Equity*
Debt Ratio	*Total Liabilities/ Total Assets*
Interest Coverage Ratio	*EBIT/ Interest Expense*
Equity Ratio	*Total equity/ Total Assets*
Profitability Analysis	
Net Profit Margin	*Net Profit/ Net Sales* 100*
Operating Profit Margin	*Operating Income/ Net Sales* 100*
Return on Assets	*Net Income/ Total Assets*

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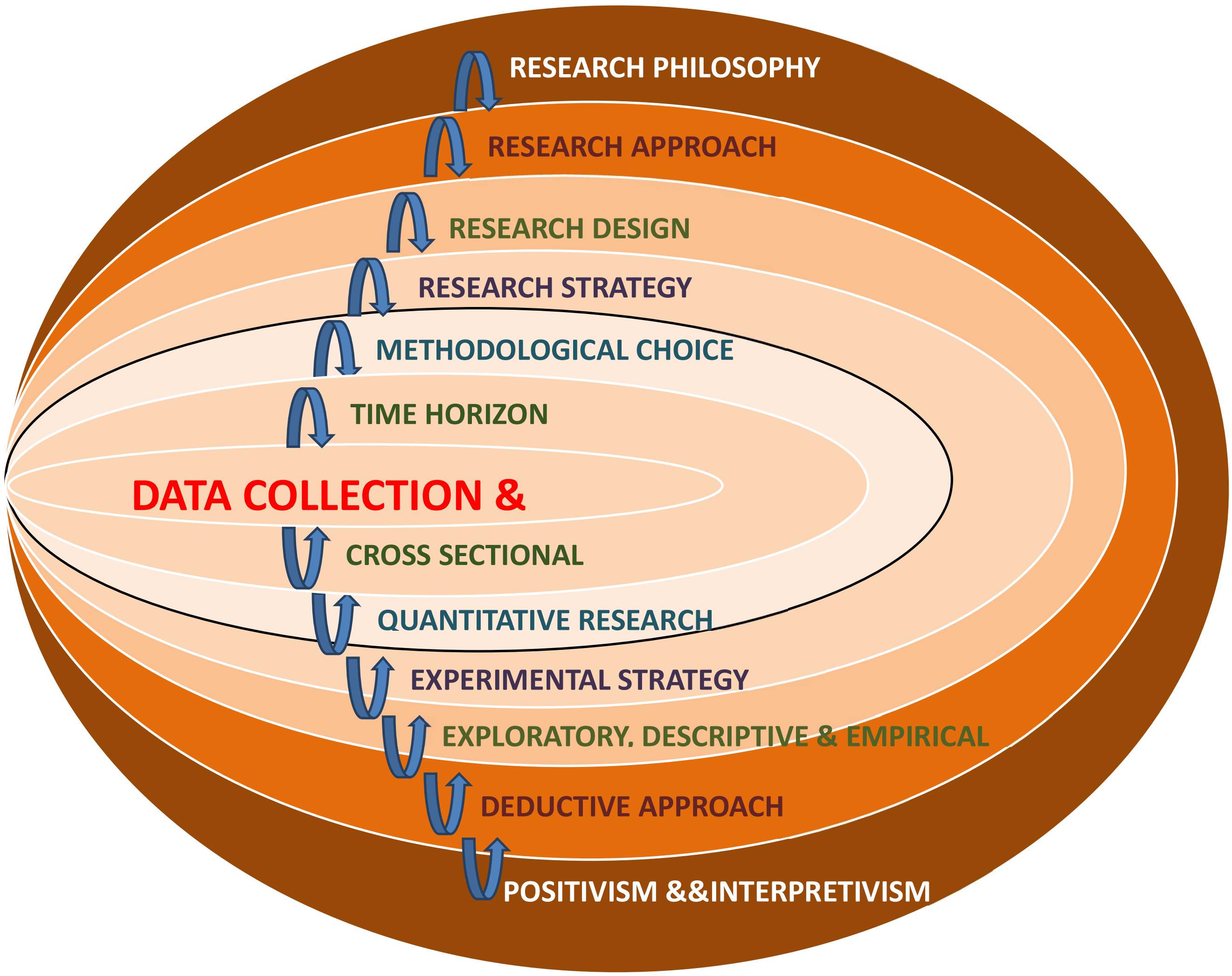
Return on Equity	*Net Income/ Shareholder's Equity*

Table- 1: Variables of the Study

3.6 Saunder's Onion Model

Saunder's research onion model presents the stages of the respective research work which was introduced by Saunders, Lewis & Thornhill, (2007)[14]. The layers of onion describe the research methodology in a detailed manner. The model provides an effective progression through which designing of research methodology is achieved. Figure 3.3 has explained the methodology used in the present research study.



[14]Saunders, M., Lewis, Philip., & Thornhill, Adrain. (2007). Research methods. *Business Students 4th edition Pearson Education Limited, England.*

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Figure 3: Research Onion Model of Present Research

3.7 Data Collection & Analysis

The present research has considered 16 variables which includes liquidity, leverage, solvency and profitability ratios of ten years in consideration of five years before the merger (pre-merger) and five years after the merger (post-merger) of the acquirer bank. The pre-merger average operating performance ($\bar{x}_1$) is compared with the post-merger average operating performance ($\bar{x}_2$) of the bank by considering the time period of (Y-1, Y-2, Y-3, Y-4, Y-5) in the pre-merger scenario and (Y+1, Y+2, Y+3, Y+4, Y+5) in the post-merger scenario, however, merger year (Y_0) is ignored in the measurement. Therefore, a total of 64 observations are received in the pre-merger, as well as and post-merger, individually. The acquirer bank which is undertaken for the study is Kotak Mahindra Bank (KMB) whose merger happened with ING Vysya Bank in the year 2014. The KMB merger is being chosen for the study because it is amongst the recent mergers, moreover, the data was also conveniently available. The data has been collected through the audited financial statements presented in the annual reports of the acquirer bank, by considering five years of pre-merger data and five years post-merger data. In addition, a parametric test has been applied for the study as quantitative data considers parametric tests. T-test has been used as a statistical tool to understand the significant differences between the pre-merger and post-merger values at a 5% significance level.

4 Analysis and Interpretation

4.1 Merger Scenario between Kotak Mahindra Bank & ING Vysya Bank

In the year 2014, the merger happened between ING Vysya Bank (IVB) and Kotak Mahindra Bank (KMB) with a deal value of ₹ 148.51 billion which amounts to US$ 2.4 billion. With the regulatory approval, all the business and branches of IVB with KMB. ING Group held a stake of 7% in KMB at the time of the merger who always kept a hold on theIVB. The share-holding deal between the two banks was fixed with the swap ratio of 725: 1000, which means that the shareholders of IVB will hold 725 shares in KMB for every 1000 shares held by them in IVB. The exchange value between the two banks entailed the stock price of IVB to ₹ 790 which was the result of one-month average stock prices of IVB and KMB. The stock prices came up as ₹ 1089.50 & ₹ 682 of KMB and IVB between October 20, 2014 – November 19, 2014, respectively. The employee count bounced to the number of 40000 and the branch network increased by 47% with about 1214 branches and the ATMs increased by 35% with about 1794 ATMs. Prior to the merger, 80% of branches of KMB were in the northern and western parts of the country, however, only 155 branches had their presence in the southern region of India. On the contrary, 64% of the branches of IVB had their presence in the southern region of the country, and only about 32% of branches had their existence in the northern and western regions of the country. The merger helped KMB in creating a balanced existence in different spheres of India[15].

[15]Varghese, T., & Thaha, A. (2017). Impact of merger on acquiring bank performance: A case of Kotak Mahindra Bank. *Journal of Commerce and Accounting Research*, *6*(3), 34.

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*4.2 **Pre- Post Merger Variable Values***

Table 2 provides the trend analysis by comparing the operating performance of KMB (acquirer bank)in the pre and post-merger scenarios. In order to compare operating performance, a number of ratios are being undertaken to fall under the category of four financial parameters. The liquidity performance of the bank reflects that the current ratio has increased from 1.13 in Y-5 to 1.15 in Y+5, however, there is a steep increase in the cash and cash equivalents which has risen from 6.14% to 14.7% after its merger. On the other hand, there is a declining trend in the Advances to total assets, which has dropped from 62.4% in Y0 to 61.0%, moreover, a significant decline has been noticed in investment to total assets, which has dropped from 33% in Y-5 to 20.83% in Y+5. The reasons for the declining ratios can be attributed to the disorientation in the advances and investments over the period of time. The leverage performance of KMB has declined after its merger, as there is a declining trend in the capital adequacy ratios which has decreased from 18.45 in the Y-5 to 17.9% in Y+5, however, the fixed asset turnover ratio has shown up upward trend as the ratio has increased from 7.76 in Y-5 to 11.53 in Y+5. Moreover, the total asset turnover ratio and the working capital turnover ratio has declined from 0.075 and 0.637 in Y-5 to 0.056 and 0.426. Overall leverage performance of KMB does not show up any increase in the post-merger period.

By comparing the pre and post-merger performance of the solvency ratios, it has been observed that the debt to equity ratio has declined from 7.25 in Y-5 to 6.35 in Y+5 and the debt ratio has declined from 0.88 in Y-5 to 0.86 in Y+5. Moreover, the interest coverage ratio and equity ratio has fluctuating trend which suggests not much change is observed in the ratio post its merger, however, a slight increase in the equity ratio has been observed which has increased from 0.121 in Y-5 to 0.136 in Y+5. Solvency performance suggests that the bank may have not increased over its debt and after the merger and maintained the same combination of debt and equity post its merger. Overall, not much change has been noticed in the leverage performance of KMB post its merger. The profitability performance of KMB suggests that there is not much improvement in its performance post its merger. The upward trend can be noticed in net profit margins, as the ratio has increased from 22.57% in Y-5 to 31.51% in Y+5. However, operating profit margins has also shown up upward trend post its merger, as the ratio increased from 62.55% in Y0 to 63.7% in Y+5, the values suggest that a slight increase in the ratio can be observed due to the better management of operating expenses. Return on assets has also shown up upward trend as the ratio has increased from 1.70% in Y-5 to 1.90% in Y=5, on the contrary return on equity has shown up downward trend as it has decreased from 12.36% in Y-5 to 12.31% in Y+5, however by comparing the values in the pre and post-merger scenario, not much change is observed in the profitability position of the acquirer bank.

Ratio Analysis of Kotak Mahindra Bank										
Variables	Y-5	Y-4	Y-3	Y-2	Y-1	Y0	Y+1	Y+2	Y+3	Y+4	Y+5
Liquidity Analysis											

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Current Ratio	*1.13*	*1.15*	*1.13*	*1.12*	*1.15*	*1.14*	*1.13*	*1.14*	*1.16*	*1.15*	*1.15*
Cash and Cash Equivalent to total assets	6.14%	4.86%	4.01%	4.41%	6.83%	5.91%	5.66%	10.52%	7.41%	7.90%	14.79%
Advances to Total Assets	55.49%	57.68%	59.51%	57.91%	60.54%	62.41%	61.72%	63.41%	64.06%	65.89%	61.00%
Investment to Total Assets	33.42%	33.67%	32.84%	34.50%	29.10%	28.70%	26.66%	21.00%	24.37%	22.80%	20.83%
Leverage Analysis											
Capital Adequacy Ratio	18.40%	19.90%	17.50%	16.00%	18.80%	17.20%	16.30%	16.80%	18.20%	17.50%	17.90%
Fixed Asset Turnover Ratio	7.76	6.75	7.97	9.55	6.52	5.4	6.9	7.51	8.86	9.98	11.53
Total Assets Turnover Ratio	0.075	0.065	0.06	0.058	0.06	0.065	0.064	0.057	0.057	0.055	0.056
Working Capital Turnover Ratio	0.637	0.547	0.501	0.528	0.507	0.519	0.538	0.479	0.438	0.411	0.426
Solvency Analysis											
Debt to Equity Ratio	7.25	6.44	7.23	7.84	6.13	6.5	7.02	6.77	6.07	6.28	6.35

Debt Ratio	0.88	0.87	0.88	0.89	0.86	0.87	0.88	0.87	0.86	0.86	0.86
Interest Coverage Ratio	1.61	1.57	1.43	1.41	1.42	1.51	1.35	1.51	1.6	1.58	1.59
Equity Ratio	0.121	0.134	0.122	0.113	0.14	0.133	0.125	0.129	0.141	0.137	0.136
Profitability Analysis											
Net Profit Margin	22.57%	28.43%	31.09%	31.16%	29.35%	29.85%	21.97%	29.40%	30.07%	30.67%	31.51%
Operating Profit Margin	64.15%	58.09%	61.45%	63.29%	62.56%	62.55%	55.69%	63.92%	68.09%	68.03%	63.70%
Return on Assets	1.70%	1.80%	1.80%	1.80%	1.80%	2.00%	1.20%	1.70%	1.70%	1.70%	1.90%
Return on Equity	12.36%	11.97%	13.60%	14.38%	12.23%	13.19%	8.72%	12.35%	10.90%	11.34%	12.13%

Table 2: Pre-& post-merger Variable values of Kotak Mahindra Bank (Acquirer Bank)

4.3 Hypothesis Testing

In order to prove the hypothesis, table 3 has demonstrated the sample statistics which has been applied by using T-test statistics at the 5% significance level. Four Hypotheses are being tested by pairing the pre and post-merger mean values, variances, t values and P values. Pairs 1 to 4 lie in the category of liquidity performance which entails that overall there is a significant difference in the pre and post & postmerger liquidity performance of KMB (acquirer bank) which suggests that H0 is being rejected. However, pair 5 to 8 falls under the category of leverage performance which suggests that there are no significant changes in the capital adequacy ratio (0.915< 2.776)) and fixed asset turnover ratio (1.260< 2.776)as the t valuesare less than the critical values owing to which H0 is accepted. However, the total assets turnover ratio (3.675 > 2.776) and working capital turnover ratio (8.570 > 2.776) has significant differences in the pre and post-merger values because their t values are greater than critical values owing to which H0 is being rejected. Overall, there is a slight difference in the pre and post leverage performance of the acquirer bank. The effect of M&A on the solvency performance is analysed on the basis of four ratios which is paired up from pair 9 to 12. In this case, t values of all the leverage ratios are less than the critical values which embark that there is no significant difference in the pre and post-merger solvency performance of the bank which makes H0 accepted, and thus we failed to reject the alternate hypothesis (H1). Profitability performance is being acknowledged through pairs 13 to 16 which suggests that t values of net profit margin (0.344), operating profit margin (0.713), return on assets (1.429) and return on equity (2.226) are less than the critical values (2.776). Thus, H1 is being rejected and H0 is being accepted which suggests that there is no significant difference in the pre and post-merger profitability performance of KMB (acquirer bank).

Variables of Performance Management		***Mean ($\bar{x}_1$)***	***Variance***	***T Value***	***Critical Value***	***P-Value***	***H0***
Pair 1	Current Ratio (Pre-merger)	1.1342	0.0001493	-1.813	2.776	0.144	Accept
	Current Ratio (Post-merger)	1.1472	0.0001091				
Pair 2	Cash and Cash Equivalent to Total Assets (Pre-merger)	0.0525	0.0001420	-2.861	2.776	0.046	Reject
	Cash and Cash Equivalent to Total Assets (Post- Merger)	0.0926	0.0012610				
Pair 3	Advances to Total Assets (Pre-merger)	0.5823	0.0003721	-3.958	2.776	0.017	Reject
	Advances to Total Assets (Post- Merger)	0.6322	0.0003765				
Pair 4	Investment to Total Assets (Pre-merger)	0.3271	0.0004426	8.581	2.776	0.001	Reject
	Investment to Total Assets (Post-merger)	0.2313	0.0005977				
Pair 5	Capital Adequacy Ratio (Pre- Merger)	0.1812	0.0002147	0.915	2.776	0.412	Accept
	Capital Adequacy Ratio (Post- Merger)	0.1734	6.13E-05				
Pair 6	Fixed Asset Turnover Ratio (Pre- Merger)	7.7084	1.4527955	-1.260	2.776	0.276	Accept
	Fixed Asset Turnover Ratio (Post- Merger)	8.9561	3.4962901				

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Pair 7	Total Assets Turnover Ratio (Pre- Merger)	0.0637	4.7775E-05	3.675	2.776	0.021	Reject
	Total Assets Turnover Ratio (Post- Merger)	0.0577	1.2111E-05				
Pair 8	Working Capital Turnover Ratio (Pre-Merger)	0.5442	0.0030356	8.570	2.776	0.001	Reject
	Working Capital Turnover Ratio (Post-Merger)	0.4583	0.0026286				
Pair 9	Debt to Equity Ratio (Pre- Merger)	6.9778	0.4722421	1.272	2.776	0.272	Accept
	Debt to Equity Ratio (Post- Merger)	6.4975	0.1515019				
Pair 10	Debt Ratio (Pre- Merger)	0.8739	0.0001205	1.222	2.776	0.289	Accept
	Debt Ratio (Post-Merger)	0.8663	4.6803E-05				
Pair 11	Interest Coverage Ratio (Pre-Merger)	1.4878	0.0091519	-0.440	2.776	0.683	Accept
	Interest Coverage Ratio (Post-Merger)	1.5263	0.0108468				
Pair 12	Equity Ratio (Pre-Merger)	0.1261	0.0001205	-1.222	2.776	0.289	Accept
	Equity Ratio (Post-Merger)	0.1337	4.6803E-05				
Pair 13	Net Profit Margin (Pre-Merger)	0.2852	0.0012433	-0.344	2.776	0.748	Accept
	Net Profit Margin (Post-Merger)	0.2872	0.0014868				
Pair 14	Operating Profit Margin (Pre- Merger)	0.6191	0.0005531	-0.713	2.776	0.515	Accept
	Operating Profit Margin (Post- Merger)	0.6389	0.0025511				

Pair 15	Return on Assets (Pre-Merger)	0.0178	2E-07	1.429	2.776	0.226	Accept
	Return on Assets (Post-Merger)	0.0164	0.0000068				
Pair 16	Return on Equity (Pre-Merger)	0.1291	0.0001065	2.226	2.776	0.090	Accept
	Return on Equity (Post-Merger)	0.1109	0.0002098				

Table 3: Sample Statistics

4.4 Comparison of Pre-& Post Merger Operating Performance

4.4.1 Liquidity Performance

Table 4 has compared the mean values ($\bar{x}$) of liquidity ratios in the pre and post-merger scenario, where it has been observed that the mean values of current ratio (1.134 < 1.147), cash and cash equivalents (0.053 < 0.093) and advances to total assets (0.582 < 0.632)has increased and improved implying that the post-merger mean values are greater than pre-merger mean values ($\bar{x}_1 < \bar{x}_2$). Moreover, cash and cash equivalents have increased substantially by over 76.29% in the post-merger period which implies that the company has sufficient liquid assets to cover its debt in the post-merger period. However, the $\bar{x}$values of investment to total assets (0.327 > 0.231) have declined to post its merger implying $\bar{x}_1 > \bar{x}_2$ with the decreaseover (29.66%). Figure 4 suggests that all the ratios have shown up the increase in its mean values except investment to total assets which implies that the liquidity performance of KMB has overall improved in the post-merger period which suggests that the bank is financially healthy and has maintained liquid assets to meet out its current liabilities.

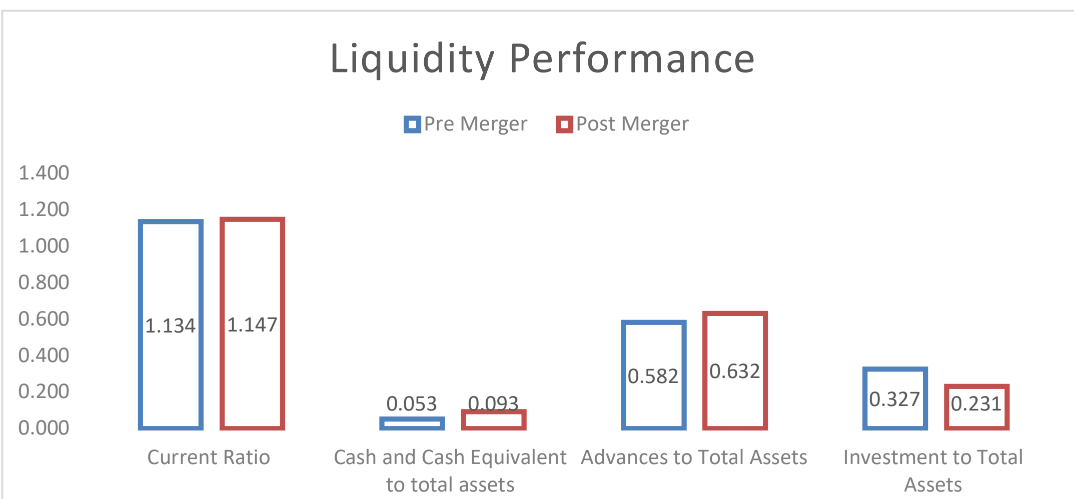

Figure 4: Liquidity Performance

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4.4.2 Leverage Performance

Table 4 has justified that the mean values ($\bar{x}$) of all the leverage ratios have declined in the post-merger period except fixed asset turnover ratio. The mean values ($\bar{x}_1$ vs $\bar{x}_2$) ofcapital adequacy ratio (0.181 > 0.173), total asset turnover ratio (0.064 > 0.058) and working capital turnover ratio (0.544 > 0.458) has decreased post KMB's merger. However, the mean values fixed asset turnover ratio (7.708 < 8.956) has increased over the period of time which indicates that the company is utilising its capital assets effectively for the generation of high revenues, there is 16.186% increase in the mean values of pre-& post-merger period. Figure 5 and Table 4 has indicated that all the leverage ratios are relatively low in their mean values post its merger which suggests that the bank is not able to employ its resources in an effective manner, which has consequently affected its revenues and hence lowered down the leverage ratios.

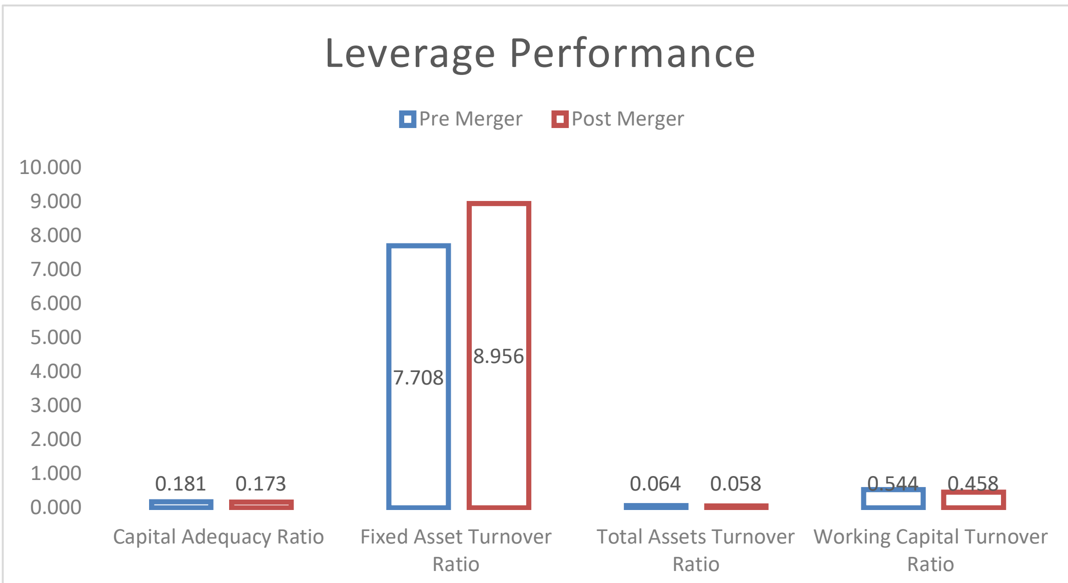

Figure 5: Leverage Performance

4.4.3 Solvency Performance

Table 4 and figure 5 has compared the solvency ratios of the acquirer bank by comparing the pre-merger and post-merger mean values ($\bar{x}$) of KMB along with its percentage change. The mean values ($\bar{x}_1$ vs $\bar{x}_2$) of the Debt to equity ratio (6.978 > 6.497) and debt ratio (0.874 > 0.866) has decreased in the post-merger period which suggests that the bank has not increased over its debt post-KMB's merger and relied more on equity. Although there is not much change in the concerned ratio as the ratio is declined with the small percentage of the amount, as Debt to equity ratio has declined (6.883%) and debt ratio has declined with (0.865%). However, the mean values of interest coverage ratio (1.448 < 1.526) and equity ratio (0.126 < 0.134) has increased post its merger with 2.558% and 5.994% as the bank has more reliance on equity in comparison with equity. Overall, it can be stated that sufficient profits are available in order to service the debts which have increased the interest coverage ratio, moreover the bank has a lower range of financing through borrowing and has trusted equity more for funding the operations. Moreover, the compared mean values in between the pre-merger and post-merger scenarios declared that there is a slight change,or much change has been observed in the overall solvency performance in both the scenarios.

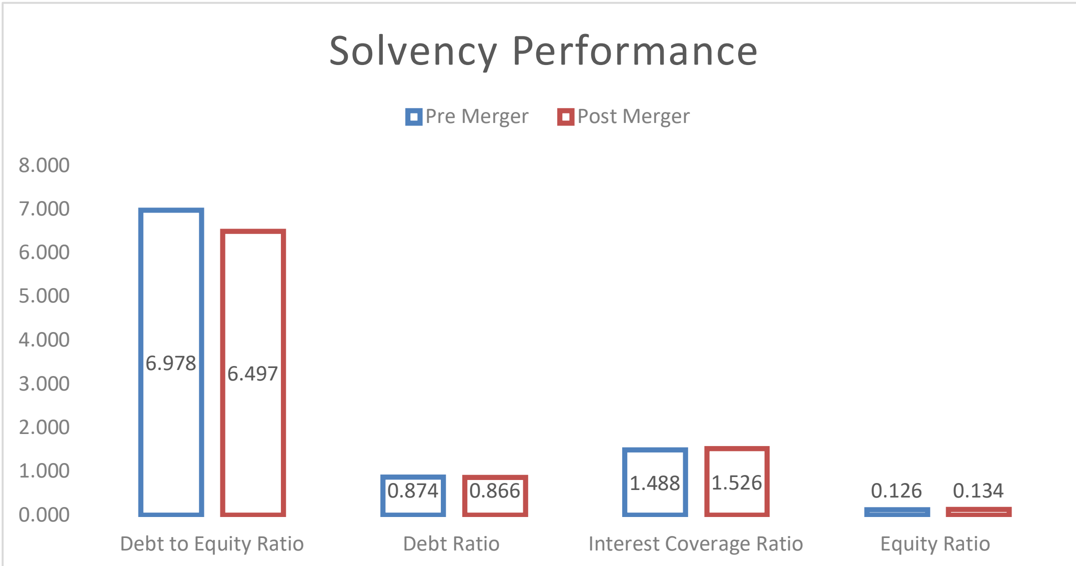

Figure 6: Solvency Performance

4.4.4 Profitability Performance

Table 4 presents the profitability performance of KMB by comparing the pre-merger and post-merger mean values ($\bar{x}$) of the bank, where it has been observed that net profit margins (0.285< 0.287) and operating profit margins (0.619 < 0.639) has increased, while there is a decline in the mean values of return on assets (0.018 >0.016) and return on equity (0.129 > 0.111). The values and figure 7 implies that the bank is able to maintain its operating expenses which has led to the increase in profit margins. Moreover, the decline in ROA and ROE implies that the bank is not able to generate enough profits from its assets which has led to the decline of ROA by (7.865%) and ROE by (14.091%). Overall, the profitability performance of KMB suggests that there is only a change in the pre-merger and post-merger scenarios of KMB bank as there is an increment of only 0.718% in net profit margins and a 3.193% change in the operating profit margins.

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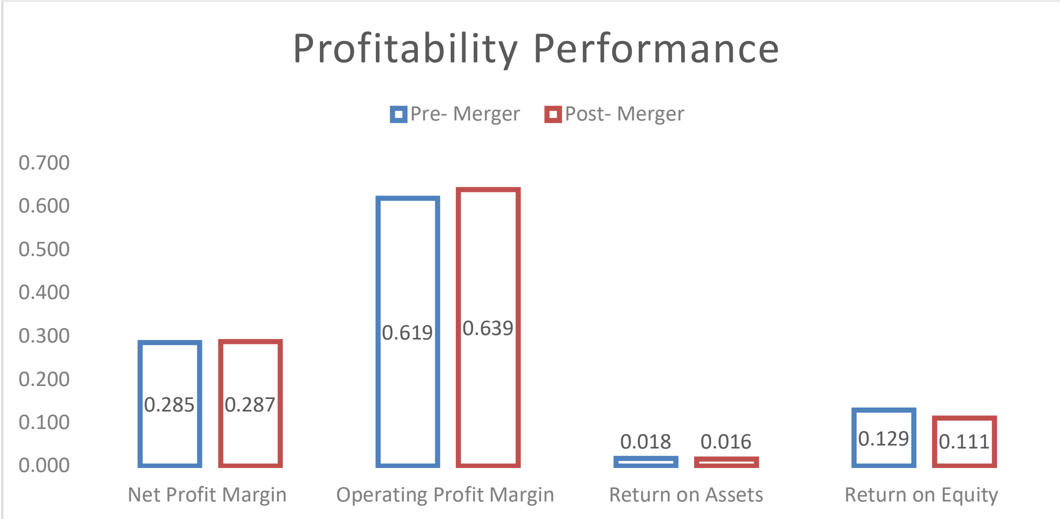

Figure 7: Profitability Performance

Particulars	**Mean (Pre)**	**Mean (post)**	**% Change**
Liquidity Performance			
Current Ratio	1.134	1.147	1.153%
Cash and Cash Equivalent to total assets	0.053	0.093	76.299%
Advances to Total Assets	0.582	0.632	8.569%
Investment to Total Assets	0.327	0.231	-29.266%
LeveragePerformance			
Capital Adequacy Ratio	0.181	0.173	-4.305%
Fixed Asset Turnover Ratio	7.708	8.956	16.186%
Total Assets Turnover Ratio	0.064	0.058	-9.400%
Working Capital Turnover Ratio	0.544	0.458	-15.782%
Solvency Performance			
Debt to Equity Ratio	6.978	6.497	-6.883%
Debt Ratio	0.874	0.866	-0.865%
Interest Coverage Ratio	1.488	1.526	2.588%

Equity Ratio	0.126	0.134	5.994%
Profitability Performance			
Net Profit Margin	0.285	0.287	0.718%
Operating Profit Margin	0.619	0.639	3.193%
Return on Assets	0.018	0.016	-7.865%
Return on Equity	0.129	0.111	-14.091%

Table 4: Comparative Statistics

5 Conclusion and Recommendations

The paper has measured the operating performance of Kotak Mahindra Bank (acquirer bank) after its merger with ING Vysya Bank in the year 2014. In order, the measure the operating performance, four financial parameters are considered which includes liquidity performance ratios, leverage performance ratios, solvency performance ratios, and profitability performance ratios. The pre and post-merger values are then tested through paired- tests with a 5% significance level.

Overall, it can be concluded that the liquidity performance of KMB has improved significantly in the post-merger scenario as overall liquidity ratios had shown an upward trend and there is a significant difference in the mean values ($\bar{x}$) of pre – and post-merger scenarios. Moreover, KMB tends to be financially healthy in terms of its liquidity position as the bank is able to meet its current liabilities through its liquid assets. The efficiency performance of the bank has overall seen a declining trend, except fixed assets turnover ratio. The total assets and working capital turnover ratio are significantly different in the pre-& post-merger scenario and thus rejects H0. ($\bar{x}_1 \neq \bar{x}_2$). The leverageperformance of KMB in the post-merger period is relatively low which suggests that the bank is not able to employ the bank's resources effectively which has affected the revenues of the bank and has lowered the efficiency performance of the bank. Thus, there is no significant difference in the pre and post-merger mean values for capital adequacy ratio and fixed asset turnover ratio which makes H0 accepted, however, H1 is rejected for total assets turnover ratio and working capital turnover ratio. In addition, there is not much improvement in the solvency performance of KMB post its merger, as debt to equity ratio, equity ratio, interest coverage ratio and the debt ratio are statistically significant and thus H0 is accepted. In terms of solvency, the bank has relied more on equity rather than debt and has generated sufficient profits to service over the bank's debt. The profitability performance of the bank has suggested that all the ratios are statistically significant and thus H0 is accepted. Effective management of operating expenses had led to the increase in net profit margins and operating margins, however ineffective utilisation of assets has led to the decline of ROA and ROE. The results depicts that cash and cash equivalents, fixed asset turnover ratio, advances to total assets, equity ratio, current ratio, interest coverage ratio, net profit and operating profit has positively impacted the acquirer bank in the post-merger period, however remaining other variables has not contributed significantly in improving the operating performance of the acquirer bank. Therefore, the overall operating

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performance of KMB (acquirer bank) in the post-merger scenario has not realised much improvement, liquidity performance of the bank has improved significantly, on the contrary, leverage position has deteriorated, however, solvency and profitability do not show up significant advancement.

6 Limitation of Study

The limitation of this paper is confined to only one bank merger, i.e. KMB and ING Vysya Bank occurring in the Indian banking industry which has limited the scope of the research and has restricted the generalisations of the research. The study has tried to pool ample quantitative data for the observation of the impact of M&A on the operating performance of banks, however qualitative aspects of the research are ignored which can contribute to additional findings of the research. Further researchers can measure the operating performance of the bank by enlarging the scope of the study and investigating the role of management and qualitative aspects of a bank merger.

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