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Valuation of Financial Synergies in Mergers and Acquisitions: A Case Study of Multiple Indian Entities

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ABSTRACT

Mergers and acquisitions are broadly undertaken to have extraneous advantages for the combined entity vis-à-vis standalone entities. The objective of the study is to evaluate the actual financial synergy realisations in case of four recent and significant M&A deals in three different sectors in India: automobile, banking, and pharmaceuticals. These are: Amtek Auto and JMT Auto; Kotak Mahindra and ING Vysya Bank; Sun Pharmaceuticals Industries Ltd and Ranbaxy Laboratories; and Express Scripts and Medco Health Solutions. Synergies are calculated for few basic parameters including revenue, expenditure, and PAT in all the four deals and also for industry-specific elementary performance indicators for proper evaluation of the industry. The results suggest Kotak Mahindra -ING Vysya Bank and Sun Pharma-Ranbaxy deals were able to realise most of the synergies that were estimated and were on the right track towards synergy realisation in the post-acquisition period. However, the Amtek Auto-JMT Auto deal couldn't realise cost synergies as their expenditures elevated to high levels after the merger but it managed to attain lower cost of capital financial synergies. On the other hand, Express Scripts-Medco deal badly failed because it couldn't attain revenue synergies after the merger. The study concludes with the relevant policy implications.

Keywords: *Mergers and acquisitions; Financial Synergies; Cost of capital.*

1.0 Introduction

Mergers and acquisitions (M&As) are broadly undertaken to have additional advantages for the combined entity vis-à-vis standalone entities. Nonetheless, despite the budding popularity of M&A activity, contemporary studies have asserted that majority of the deals do not result in enhanced value for the acquirer's shareholders.

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The observable question that comes to mind: what are the key reasons responsible for unsuccessful M&A deals? The general belief is that the acquirer company has failed to search a company that can match the strategic intent of the acquisition. Subsequently, companies frequently end up overpaying for the deal or are unsuccessful in conducting the acquisition in the correct manner (Christensen et al., 2011). Companies generally engage in M&A activity to acquire a particular type (or various types) of *synergy*. Synergy element plays a very imperative role in each and every deal. Such an outcome is usually reflected in additional value created by unifying the assets (both tangible and intangible) of the acquirer and the target company. Moreover, the target entity often gets a premium in the deal other than its financials which is often accounted for the synergy the entity would be enjoying. Synergy holds a very important position in the deal ecosystem as it looks into the operational, financial as well as market dynamics.

Sirower (2006) defines synergies as ‘increase in competitiveness and resulting cash flows beyond what the two companies are expected to accomplish independently’. Synergy often talks about the financial gains, the benefits merger or acquisition would have because of efficiency improvements at different levels of the organisation. There are mainly two kinds of synergies put forward in the existing literature: operational and financial synergy. Operating Synergies are the efficiency gains or operating economies that are attained in horizontal or vertical mergers, yielding higher expected cash flows, greater pricing power, increased market share and reduced competition, economies of scale, etc. On the other hand, financial synergy results from lowering the cost of capital by combining two or more companies. Usually, large companies, with broad financing resources, have a tendency to acquire smaller companies that have impressive niche opportunities. It can yield many benefits namely, increased debt capacity, and thereby greater tax benefits.

Another demarcation of synergies is based on the end result: revenue and cost synergy. Not all synergies would add value to the new combined entity. The concepts of diseconomies of scale and diseconomies of scope are instances which indicate an evidence of negative synergy in M&A. Another qualitative aspect of negative synergy is the increase in bureaucracy resulting in the prolonged lead times and increased administrative work. Increased managerial costs, arising as a direct consequence of M&A are examples of negative synergies. The major problem arises due to a longer time frame for the realisation of a single type of synergy, thus lowering the success rate considerably. Moreover, during the deal, the value of synergy is mostly over-estimated and often the entities are not able to reach the synergy targets. Revenue synergies are tougher to calculate as they involve tedious forecasting and are of an intangible nature.

One can conclude that synergy valuation involves innumerable factors which work towards setting a price for synergy during an M&A deal.

In reality, the effect of synergy is only truly realised when the plans are properly comprehended and integrated into the organization. Therefore, companies should make sincere efforts (and incur some costs) in order to gain the synergy. It is universally recommended that one should not wait too long to exploit the synergy and to incorporate synergy goals into personnel incentive systems. Furthermore, in order to reduce the possibility of a negative synergy from an M&A deal, it is essential for an acquirer to gauge the probable synergetic effect from the M&A activity before involving in it. Though the subject of M&A has been extensively studied in the corporate finance literature, there are scarce studies dealing with the valuation of financial synergies in mergers and acquisitions in the Indian context.

With this background, the current study evaluates the actual financial synergy realisations in case of four recent and significant M&A deals which have materialized in the past 4-5 years in three different sectors: Automobile, Banking, and Pharmaceuticals, namely, viz. Amtek Auto and JMT Auto, Kotak Mahindra and ING Vysya Bank, Sun Pharmaceuticals Industries Ltd and Ranbaxy Laboratories, Express Scripts and Medco Health Solutions, respectively. The scheme of the study is as follows. Section 2 discusses the existing review of literature covering the basics of synergy, its various sources, its assessment as well as its realisation. Section 3 briefly discusses the background of the four M&A deals along with some relevant facts, taken into account in the current study. Section 4 states the objectives and methodology employed for the study. Section 5 proceeds with analysis and interpretations giving deep insights into occurrence or non-occurrence of positive or negative synergies in all the four M&A deals on a case-by-case basis. Section 6 concludes the study from a broad policy perspective.

2.0 Review of Literature

As the major objective of the paper is to look at the financial synergies in multiple Indian M&A deals, the concept of synergy and its further calculations are of utmost importance. The review of literature covers the basics of synergy, its various sources, its calculation in M&A deals, its implementation, assessment etc.

Numerous authors have described various types of synergy. Ansoff (1965) provided one of the initial classifications when he described the various types as sales synergy, operating synergy and investment synergy. Here, sales synergy refers to increased revenues, operating synergy refers to decreased operating costs and investment

synergy refers to decreased investment requirements. A few years later, Chatterjee (1986) described the different forms as collusive synergy, operational synergy, and financial synergy. In this context, collusive and operational synergy refer to a concept very close to the definitions used by Ansoff (1965) for sales and operating synergy, respectively. According to Chatterjee (1986), however, financial synergy is the result of a reduction in the cost of capital. McKinsey & Company (2005) in their insightful guide to valuations, differentiate between only two types of synergy, providing the broadest classification in the literature: cost synergies and revenue synergies. The different terminology used and various types of synergy described could, however, lead to confusion. The value could thus be added by further investigating the various types of synergy as described, and by identifying and describing the linkages between them.

Synergistic merger theory advocates that the bidder firm can realise efficiency gains by synthesizing an efficient target with their businesses thus boosting the target's performance. Bidder firms often identify distinct complementarities between their businesses and that of the target; for that reason even though the target is already performing well, it should operate even better when it is amalgamated with its complementary counterpart, the bidder firm. The theory propounds that the performance of the target company remains well both before and after the merger (Altunbas & Marques, 2008; Hankir et al., 2011). From this, it can be inferred that operating synergies are attainable in horizontal, vertical and even conglomerate mergers. The synergy theory assumes that economies of scale prevail in the industry and that pre-merger; the firms are just operating at levels of activity that fall short of realizing the economies of scale. (Chatterjee, 1986; Altunbas & Marques, 2008; Hankir et al., 2011)

Operating synergies can be achieved through revenue enhancement or cost reducing measures. The principal source of operating synergy arises from cost reductions, which may be the result of economies of scale. Probable sources of revenue enhancements might emanate from splitting of marketing opportunities by cross-marketing each merger partner's product (Gaughan, 2010). Hellgren et al. (2011) and Hankir et al. (2011) elucidate the possibilities for added revenues arising from cross-selling and cost reductions resulting from efficiency gains. The financial synergy theory, on the contrary, rests on the premise that nontrivial transaction costs related to raising capital externally besides the differential tax treatment of dividends may comprise a condition for more dynamic allocation of capital through mergers from low to high marginal returns, production activities, and probably offer a justification for the quest of conglomerate mergers (Fred et al., 2003). The theory also advocates that when the cash flow rate of the acquirer is higher than that of the acquired firm, capital is relocated to the acquired firm and its investment opportunities become better. According to

(Gaughan, 2010); financial synergy refers to the effect of a corporate merger or acquisition on the costs of capital to the merging partners or the acquiring firm. Another broadly discussed premise is that the debt capacity of the combined firm can be larger than the sum of the two firms' capacities before the merger, and this contributes to tax savings on investment income (Fred et al., 2003). Mergers promote lower cost of capital in that companies considerably increase their sizes as a consequence of a merger will have more assets, hence greater debt capacity. A company with investment opportunities and another one with cash slack may merge to achieve financial synergy (Gaughan, 2010).

Marangu (2007) examined the effects of mergers and acquisition on the financial performance of non-listed commercial banks in Kenya over the period 1994 - 2001 and broadly used four measures of performance: return on assets, profit, shareholders' equity/total assets, and total liabilities/total assets. Comparative analysis of the banks' performance before the merger and after the merger was done to determine whether mergers resulted in improved financial performance. Results indicated that three measures of performance: Profit, Return on Assets and shareholders' equity/total assets had values exceeding the significance level of 0.05 with the exclusion of total liabilities/total assets. The results concluded that there was considerable improvement in the performance of the non-listed banks which merged, unlike the non-listed banks that did not merge within the same period. This validates the theoretical assertion that firms obtain more synergies by merging than by operating as individual entities.

Eliasson (2011) analysed the synergies with regards to mergers and acquisitions in technical trading companies to learn about the success factors. The study used qualitative approach i.e. semi-structured interviews with company representatives from the concerned organizations, due to synergies' complexity involved. It found the entrepreneurship and human capital, the experience and selection capability, the corporate head's knowledge and the inclusion of acquisitions (evolved from the impulse for growth) in their business models, to be significant success factors in regards to synergies in mergers and acquisitions.

Junior et al. (2013) evaluated the emergence of synergy gains i.e. efficiency evaluation, through mergers and acquisition, among publicly traded companies in Brazil, using models with multiple objectives from Goal Programming and Data Envelopment Analysis (GPDEA) and employing accounting indicators as input and output variables. The GPDEA model analyzed and classified each M&A according to the efficiency attained in those processes and found only a few of the cases to be effective, contrary to the analysis conducted by traditional models. The study presented a new multiple-

objective approach that can contribute to a greater understanding of efficiency generation in synergy creation by means of M&A.

De Graaf & Pienaar (2013) focus on the actual benefit through the M&A deals and reason out the premium paid to the acquirer for synergy. The paper emphasized the critical need for a comprehensive description of superior ways of valuing M&A synergies before committing to a transaction and was able to successfully establish certain practices as leading valuation practices by synthesizing them into the following logical groupings: (i) practices forming part of the overall M&A process, affecting synergy valuation; (ii) practices with a universal application in valuing M&A synergy; and (iii) valuation practices associated with specific origins of synergy, thereby representing a positive step towards sustainable business practice.

Huyghebaert et al. (2013) empirically investigate the magnitude, sources and timing of synergy realisation for 293 mergers and acquisitions by non-serial listed acquirers in Europe over the period 1997–2005. The study found that the shareholders of non-serial acquirers gain considerably upon deal enhancement, which is in contrast to much of the existing found literature. It also unraveled the numerous sources of M&A value creation, specifically operating synergies arising either from revenue enhancement or from savings on operating costs and investments, and financial synergies. In contrast to its non-combining industry peers, the median combined sample firm reported a 4.92% higher sales growth rate by the third post-deal year. Operating costs relative to sales were found to be reduced by an extra 1.53% over this same window. In leverage-increasing acquisitions, the median combined firm realised a constant 6.09% rise in its long-term debt ratio. Multivariate regression results pointed out those non-serial acquirers with a higher market-to-book ratio attain more extensive operating synergies.

Malik et al. (2014) focused on the realisation of the synergy values in an M&A deal. The study scrutinized the issues by using the perspectives of history, waves, motives, and methods to determine merger and acquisition value. It analysed the methods used for gauging the acquisition performance such as accounting return, event studies, economic value added, residual income approach, data envelopment analysis, questionnaire method, innovative performance, and case study approach, thus providing insights into a deal being value-enhancing or destructive.

Junge (2014) examined in detail the performance improvements intricacies across operating performance by diverse synergy types following mergers for a sample set of 420 mergers which occurred between 1988 and 2008. Principally strong were the performance improvements for mergers, which struggle for efficiency synergy, whereas mergers, which aim for synergy from complementary resources or market power, demonstrated a low level of performance improvement. The performance improvements

were likely to happen because of increase in cash flow margins and lower investments in the post-merger period, with post-merger performance improvements proving the existence of merger-induced synergy. There was a positive relationship between the revaluation of the firm's assets around the merger announcement and the change in operating performance. This is the relationship that establishes the link of post-merger performance improvements with shareholder value creation.

Ogada et al. (2016) investigated the effect of synergy on the financial performance of 40 merged institutions (having concluded their merger processes by 31 December 2013) in the financial services sector in Kenya. Financial synergy was measured using the liquidity ratio whereas operating synergy was proxied using growth in sales. Panel data analysis was used to examine the change in the study variables and trends over the period 2009-13; event window (pre-merger and post-merger) analysis was conducted to test for any significant difference in performance pre-merger and post-merger as a result of synergy, while regression analysis was used to determine the relationship between synergy and profitability. Results revealed that there is a positive relationship between performance, operating synergy and financial synergy and that there is a significant improvement in performance post-merger. Based on these findings, the study recommended that institutions should crucially assess the overall business and operational compatibility of the merging institutions and emphasize on capturing long-term financial synergies due to its positive impact on the performance.

Hamza et al. (2016) investigated the sources of synergy gains acquired through corporate takeovers based on bidder-target asymmetry, using a sample of 59 French takeovers during 1999-2011 and discussed their unique contribution to bidder value creation. Results discovered that French takeovers tend to create long-term gains with double synergistic components: financial and operating synergies, with both the components being positive and significant but with a larger contribution of the latter. In addition, cutbacks in investment expenditures constituted the considerable source of operating synergies, whereas post-acquisition market power was found to be non-significant. Moreover, multivariate analysis suggested both total and operating synergies to be higher in focused takeovers initiated by "value" in contrast to "glamour" bidders. Lastly, financial synergies were expected to emanate from bidder leverage level and target relative size.

3.0 Background of M&A Deals

3.1 Amtek Auto and JMT Auto

The Amtek Group, headquartered in India, is one of the leading integrated component manufacturers in India with a robust global presence. It has also turned into

one of the world's major global forging and integrated machining companies. The Group has operations across forging, iron and aluminum casting, machining and sub-assemblies with world-class facilities across India, Japan, Thailand, Germany, Hungary, Italy, Romania, Brazil, UK, Mexico and US. The Amtek Group consists of corporate entities Amtek Auto, JMT Auto, Amtek Global Technologies and other subsidiaries and associates. With the infrastructure and technology platform established over the 25 years, the Group is ideally positioned in the Indian Auto and Non-Auto component markets.

JMT Auto Limited is one of the biggest Auto component manufacturers in the Eastern region and has substantial expertise in the auto sector with recognised capabilities in heat treatment and gear manufacturing, in addition to a range of components for Oil and Gas industry. Established in 1987, the company possesses the competitive edge based on the latest CNC Technology, its core competence being high precision gears and shafts. The company has eight state-of-the-art facilities in India which include fully automated machining lines, design and engineering capability. In the recent years, the company has seen rapid growth owing to quality, innovation & application of lean manufacturing principles enabling the company to penetrate other industries and forge global alliances and agreements while continually upgrading technologies. JMT has big automotive players like Tata Motors, Cummins, Caterpillar, and Timken as its major customers.

Auto components major Amtek Auto Ltd signed a share purchase agreement with the promoters of Jamshedpur-based JMT Auto Ltd to acquire their entire 51.2 percent stake in the public-listed firm for around INR 110 crore (\$18.4 million), as per a stock market disclosure. Amtek Auto acquired shares of JMT at INR 148.70 a share, a 28% premium over the current market price. This acquisition added to their plant facilities which enabled the company to optimize the production across auto and non-auto sectors thus increasing the company's margins. The company funded the entire transaction through internal cash accruals and debt. It made an open offer to acquire up to 3.74 million equity shares constituting 26% of the fully paid up equity share capital of the JMT Auto. ChrysCapital owns 30.5% stake in JMT Auto. IFC granted long-term finance to ChrysCapital-backed JMT Auto Ltd to fund its Capexplan. In 2013, controlling shares were acquired by Amtek Auto Limited hence bringing JMT under the Amtek Group's umbrella.

3.2 Kotak Mahindra Bank and ING Vysya Bank

Kotak Mahindra Bank is a private sector bank which is headquartered in Mumbai. It got the banking license from RBI (Reserve Bank of India) in February 2003. Kotak Mahindra has a network of around 1300 branches across 700 locations in India. It

offers a variety of banking and financial services for corporate and retail customers in the areas of personal finance, investment banking and wealth management.

ING Vysya was a privately owned Indian multinational bank, having retail, wholesale, private banking based in Bangalore, India. In 1972, RBI upgraded the Vysya Bank to a national bank B-Class bank. Vysya Bank joined the ING Group in distribution of life insurance products in India. Moreover, Vysya Bank also acquired a 26% equity stake in the ING Asset Management Company. In 2000, Vysya Bank, ING Insurance, and the Damani Group formed a life insurance JV; this innovative collaboration marks the first bank-assurance venture in India.

The RBI approved the merger of ING Vysya Bank with Kotak Mahindra Bank with effect from April 1, 2015. ING was the largest shareholder in Vysya with a share of 42.7%. As per the deal announced on 20 November 2014, shareholders of Vysya received 0.725 shares of Rs. 5/- each in Kotak for each equity share of Rs. 10/- each held in ING Vysya Bank. ING acquired a stake of 6.5 % in the combined company, which will operate under the Kotak brand. The proposed consolidation was founded on leveraging significant complementarities that existed between both the banks, particularly relating to branch network, product offering and customer segments. This revenue synergy led and growth oriented amalgamation, adopting best practices of banking, governance and prudence from both banks, was expected to result in a superior platform benefitting from efficiencies of size and scope over time for all stakeholders such as shareholders, customers, and employees. The amalgamation does not fall within the purview of related party transactions. Kotak Mahindra Bank and ING Vysya Bank are private sector banks, offering a wide range of financial services. The transaction is recognized under Section 4A of the Banking Regulation Act and is subject to the approval of shareholders of both the banks and statutory approvals including those from the Reserve Bank of India and Competition Commission of India (Available at <http://www.capitaline.com>).

3.3 Sun Pharmaceuticals Industries Ltd. and Ranbaxy Laboratories

Both Ranbaxy and Sun Pharma are well-known names in the pharmaceutical industry worldwide and have global operations. They also match each other in their areas of expertise and efficiency, both geographically and functionally. While Sun Pharma is a leading global specialty pharmaceutical company with knowhow in complex and niche therapy areas and an established record of turning around its acquisitions, Ranbaxy has a solid global footprint and presence in the generics segment.

Ranbaxy Laboratories came into existence in 1961 and is a member of the Daiichi Sankyo group (Tokyo, Japan), a principal global pharmaceutical innovator.

Daiichi Sankyo holds majority shares of Ranbaxy, with 63.4% outstanding shares. Ranbaxy has ground operations in 43 countries and 21 manufacturing facilities situated in 8 countries with its remarkable portfolio of products being sold in over 150 countries. Although the company was able to meet its sales targets, it was incurring a net loss and suffering a decline in net worth since 2011, which can be attributed to a few key circumstances. These comprised the settlement amount of US\$ 515 million paid to the US Department of Justice (DOJ) in May 2013 after civil and criminal charges were levied against it for misrepresentation of facts and irregularities witnessed in two of its facilities in India, contraction in the value of its investments and beating foreign currency option derivatives. Thus, the merger of the company with Sun Pharma came at a crucial time when Ranbaxy was struggling to mend its financial position.

Being touted as one of the biggest M&A transactions in the Indian market, the boards of India's two leading pharmaceutical companies, Sun Pharmaceuticals and Ranbaxy Laboratories, announced their merger in April 2014 in an all-stock transaction valued at US\$ 4 billion. Ranbaxy shareholders received 0.8 of a share of Sun Pharma for each Ranbaxy share. The pro-forma revenues of the merged entity for the year 2013 were estimated at US\$ 4.2 billion, with 47% contribution accruing from the U.S., 22% from India, and almost 31% from the rest of the world and other businesses (*Sun Pharma's Annual Report, 2013-14*). Daiichi Sankyo, the major shareholder of Ranbaxy, was expected to become the second biggest shareholder of the merged entity with a 9% stake and the right to nominate one board member. The merger was anticipated to make Sun Pharma the world's fifth largest specialty-generic pharmaceutical company globally in terms of revenues, with operations in over 55 markets and 40 manufacturing facilities worldwide. Although at the time of the announcement, the deal was likely to close by December 2014, interruptions in regulatory approvals dragged it to the next year.

- By August 2014, Sun Pharma and Ranbaxy had got clearances from both the stock exchanges in India as well as from anti-competition authorities in all applicable markets except India and the U.S.
- The CCI (Competition Commission of India) ratified the acquisition of Ranbaxy by Sun Pharma on December 5, 2014 with the prerequisite that seven brands, comprising less than 1% of overall revenues of the combined entity in India, be divested for preventing the merger from negatively influencing competition in the domestic market.
- On February 2, 2015, both companies proclaimed that the U.S. FTC (Federal Trade Commission) had allowed prompt termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 (HSR Act) on the prior condition

that Sun Pharma and Ranbaxy divest Ranbaxy's interests in generic minocycline tablets and capsules to an external third party.

- As of February 22, 2015, the companies were waiting for approval of the High Court of Punjab and Haryana, India. Both Sun Pharma and Ranbaxy were expected to meet the pre-conditions laid down by the CCI and U.S. FTC for the merger to be closed.

3.4 Express Scripts and Medco Health Solutions

Express Scripts Holding Company, an American Fortune 100 company, is the biggest Pharmacy Benefit Management (PBM) organization in the USA. The company is headquartered in Missouri and offers services like network-pharmacy claims processing; home delivery pharmacy services. It commenced its operations in 1986 and turned into a public traded company in 1992. Medco Health Solutions Inc. was a PBM company, aiding 65 million people over the globe. It initially came into being in 1983 as National Pharmacies and developed as Medco Containment after an IPO in 1984. In August 2003, MHS converted into an independent company before it was acquired in April 2012.

Express Scripts concluded the acquisition of Medco Health Solutions Inc. for \$29.1 billion in cash and stock on April 2, 2012, thereby giving rise to the sole largest player in the pharmacy benefit billion prescriptions administered management industry, representing roughly 34 percent of the total U.S. market, specifically at the time of sweeping industry changes. According to the acquisition deals, each share of pre-closing Medco common stock was converted into 2 parts; to receive \$28.80 in cash, without interest and also receive 0.81 shares of common stock of the new Express Scripts, and each share of the pre-closing Express Scripts common stock was converted into one share of new Express Scripts common stock. As announced beforehand, the company expected synergies of \$1 billion once fully unified, which signified approximately 1 percent of the combined company's costs.

4.0 Objectives and Methodology

4.1 Objectives

The objective of the paper is to evaluate the actual financial synergy realisations in case of four significant M&A deals which have happened in the past 4-5 years in three different sectors: automobile, banking, and pharmaceuticals, viz., Amtek Auto and JMT Auto, Kotak Mahindra and ING Vysya Bank, Sun Pharmaceuticals Industries Ltd and Ranbaxy Laboratories, Express Scripts and Medco Health Solutions, respectively in the Indian context. The study aims at understanding the different aspects of synergy as it is one of the most crucial factors for the combined entity's performance and longevity. The

underlying motive is to implement the theoretical concepts on real deals and realise the deviation that happens because of non-realisation of some of the synergies. Moreover, the study would further look at the performance of the M&A deals and assess whether, in reality, the deals turned out to be a good decision at that time based on synergy actualizations.

4.2 Methodology

The methodology followed for valuing the synergy in the M&A deals that have been considered is as follows:

- Identify different parameters for the deal to calculate synergy, for instance, Revenue, Expenditure, PAT, Debt to Equity, Fixed Assets to Total Assets and Fixed Assets to Total Debt.
- The 3 years' data prior to the deal for each of the parameters is averaged for firm A (A_{avg}) as well as for firm B (B_{avg}).
- The 3 years' data after the deal for each of the parameters is averaged for firm C (combined entity) (C_{avg}).
- The difference between the firm C parameter's average and firm A and B parameter's average is termed as synergy for that parameter.
- Calculate the cost of capital just before the acquisition and after the acquisition period encompassing the changing debt to equity ratio and the changing cost of debt values.

For instance, the synergy for parameter 'revenue' is calculated as under:

$$Synergy_{Revenue} = Revenue_C - (Revenue_A + Revenue_B)$$

The similar methodology is used for different parameters as well, of which few are universal, and some are industry-specific. The parameters for which synergies are calculated are Revenue, Expenditure and PAT taken from the income statement in all the four deals. Apart from this, the ratios such as Fixed Assets to Total Assets, Fixed Assets to Total debts and Debt to Equity in case of Amtek Auto-JMT deal; the variables such as Deposits and Advances in case of Kotak Mahindra- ING Vysya Bank deal; the ratios such as Intangible Assets to Fixed Assets, Debt/Equity ratio in case of both Pharma industry mergers, i.e., Sun Pharma-Ranbaxy deal and Express Scripts-Medco deal, have also been computed from the balance sheet to assess the synergy effect. To capture the financial synergies, six years' data has been extracted pertaining to the financials of the eight different companies involved in four M&A deals; three years' prior to the deal and three years' post the deal. The three years' post deal data is taken from the consolidated

financial statements of the combined entity. The three years' pre-deal data is taken from the financial statements of the target company and the acquirer company.

In brief, for calculating the effect of synergy at various levels, the study has considered some basic, industry-specific parameters and accounted the difference between pre-deal period and post-deal period as synergy, thereby giving an idea about the actual realisation of the synergies after the deal.

$$\text{Synergy} = \text{Combined Entity } C_{\text{Avg for 3 years}} - (\text{Company A}_{\text{Avg for 3 years}} + \text{Company B}_{\text{Avg for 3 years}})$$

For these synergies, the study calculates percentage changes to get an idea about the magnitude of synergy for each of the parameters.

5.0 Analysis and Interpretation

5.1 Amtek Auto and JMT Auto Deal

Table 1A presents the pre-merger performance of Amtek Auto and JMT Auto in terms of their Income Statement and Balance Sheet. Table 1B presents the post-merger performance of Amtek-JMT Auto.

Table 1A: Pre-Merger Performance-Income Statement and Balance Sheet of Amtek Auto Limited (Entity A) & JMT Auto (Entity B)

(In Rs. Crores)

	Entity A - Amtek Auto				Entity B- JMT Auto			
Year /Parameter	2012	2011	2010	Average	2012	2011	2010	Average
Revenue	7622.22	8167.5	5934.75	7241.49	370.03	293.78	193.53	285.78
Operating Expenses	6624.69	6836.92	4404.33	5955.313	346.49	279.25	186.73	270.823
PAT	697.36	340.92	596.08	544.7867	16.08	9.81	3.53	9.8066
Tax	266.77	196.92	221.69	228.46	7.45	4.71	3.27	5.1433
Total Assets	18460.8	27510.3	22676.1	22882.48	388.7	285.58	274.46	316.24
Fixed Assets	8600.06	7437	7695.13	7910.73	209.37	177.57	167.88	184.94
Equity	6175.73	4265.74	3860.2	4767.223	131.14	116.73	102.76	116.87
Debt	7145.1	8367.29	7128.34	7546.91	81.13	150.24	155.12	128.83
Debt/Equity	1.15696	1.96151	1.8466	1.583083	0.6186	1.2870	1.5095	1.1022
Fixed assets/ Total Debt	1.20363	0.88881	1.07951	1.048208	2.5806	1.1819	1.0822	1.4355
Fixed assets/ Total Assets	0.46585	0.27033	0.33934	0.345711	0.5386	0.6217	0.6116	0.5847
Capex	2960.29	1202.9	1343.16	1835.45	51.55	26.22	17.58	31.783

Source: Authors' own calculations

Table 1B: Post-Merger Performance- Income Statement and Balance Sheet of Amtek-JMT Auto (Combined Entity C)

(In Rs. Crores)

	Combined Entity C- Amtek-JMT Auto				Difference in Post-Merger and Pre-Merger Performance	Percentage Change
Year/Parameter	2015	2014	2013	Average		
Revenue	15213.4	15706.6	10572.6	13830.9	6303.63	83.74%
Operating Expenses	15473.7	14340.1	9585.32	13133.07	6906.937	110.93%
PAT	-628.4	941.1	552.68	288.43	-266.163	-47.99%
Tax	65.9	413.3	350.1	276.4767	42.87333	18.35%
Total Assets	26338.5	30085.5	26338.53	27587.53	4388.8	18.92%
Fixed Assets	12634.6	18619.4	15303.09	15519.08	7423.413	91.70%
Equity	6239.25	7813.1	7049.85	7034.07	2149.97	44.02%
Debt	10629.78	12871.5	12182.62	11894.65	4218.907	54.96%
Debt/Equity	1.703695	1.64742	1.728068	1.691005		
Fixed Assets/ Total Debt	1.188613	1.44656	1.256141	1.304712		
Fixed Assets/ Total Assets	0.479704	0.61888	0.581015	0.56254		
Capex	4259.26	3434.55	7451.15	5048.32	3181.087	170.36%

Source: Authors' own calculations

Table 2: Cost of Capital of Acquirer (Amtek Auto)

Beta	1.49
Risk Free Rate	8.25
Market Premium	8
Cost of Equity	20.17
Finance Cost	505.03
Long term Debt	7145.1
Cost of Debt	7.068201
Debt/Capital	0.536385
Cost of Capital	13.14238

Source: Authors' own calculations

Table 3: Cost of Capital of Combined Entity (Amtek-JMT Auto)

Beta	1.49
Risk Free Rate	8.25
Market Premium	8
Cost of Equity	20.17
Finance Cost	741.21
Long term Debt	12182.62
Cost of Debt	6.084159
Debt/Capital	0.63344
Cost of Capital	11.24746

Source: Authors' own calculations

Table 2 gives the cost of capital of the Acquiring company, i.e., Amtek Auto; while Table 3 gives the cost of capital of the combined entity, i.e. Amtek-JMT Auto.

5.1.1 Synergy analysis in Amtek-JMT deal

In the above deal, as it was an automobile industry deal, the factors which show the capital-intensive nature of the industry were incorporated, for instance, the percentage of Fixed Assets to the Total Assets, and the percentage of Fixed Assets financed by Debt. Figures 1 and 2 and the after analysis exhibit the effect of synergy at the Income Statement levels.

From Figure 1, it becomes evident that the deal did realise revenue synergies of about 83%, however because of the increase in expenditure across the post-merger period by 110%, the PAT fell down by approximately 48%. Overall, in profitability terms, the deal till now did not seem to perform well.

Figure 1: Percentage Change in Synergy Parameters

Source: Authors' own calculations

Figure 2: Comparison of Synergy Parameters Pre and Post Deal

Source: Authors' own calculations

Figure 2 showcases the synergy realisation in case of investments and debt-equity levels. The analysis indicates that the Fixed Assets as a percentage of Total Assets has increased signifying that after the acquisition, Amtek has invested in fixed assets more in terms of plants, equipment etc. The Fixed Assets seem to have been financed mainly by debt and therefore it has risen after the deal. Moreover, the capital structure is dominated by debt, more so after the acquisition. This also has led to a lower cost of capital from 13.14% to 11.25%, thus signifying lower cost financing synergy.

Overall, it can be inferred that the synergy was somewhat realised, however, Amtek would need to reduce the expenditure which has increased dramatically after the acquisition to realise the synergies in Revenues.

5.2 Kotak Mahindra Bank and ING Vysya Bank Deal

Table 4A presents the pre-merger performance of Kotak Mahindra and ING Vysya in terms of their Income Statement and Balance Sheet. Table 4B presents the post-merger performance of Kotak Mahindra-ING Vysya Bank. Table 5 gives the cost of capital of the acquiring company, i.e., Kotak Mahindra Bank; while Table 6 gives the cost of capital of the combined entity, i.e. Kotak Mahindra-ING Vysya Bank.

Table 4A: Pre-Merger Performance- Income Statement and Balance Sheet of Kotak Mahindra (Entity A) & ING Vysya (Entity B)

(In Rs. Crores)

	Entity A – Kotak Mahindra Bank				Entity B- ING Vysya Bank			
Year/ Parameter	2014	2013	2012	Average	2014	2013	2012	Average
Income Statement								
Revenue	17268.2	15950.2	13013.8	15410.7	6072.3	5588	4526	5395.7
Expenditure	14656.7	13746.0	11163.2	13188.7	5414.4	4975	4070	4820.0
Expenditure (% of revenue)	84.8767	86.1806	85.780	85.612	89.166	89.03	89.91	89.372
Tax	1183.9	939.95	806.01	976.64	319.91	288.4	197.6	268.67
PAT	1502.5	1360.7	1850.5	1571.2	657.85	612.9	456.3	575.70
Balance Sheet								
Deposits	56929.7	49389.1	36460.7	47593.2	41216.	41334	3519 5.42	39248.73
Total Liabilities	102881.	100358.6	79253.4	94164.4	60,413	54,83 6.44	4698 3.75	54077.81
Advances	71692.5	66257.6	53143.6	63697.9	35828.	31772 .03	2872 1.4	32107.43
Total Assets	122236.	115834.7	92349.3	110140	60,413	54836	4698 3.7	54077.81

Source: Authors' own calculations

Table 4B: Post-Merger Performance- Income Statement and Balance Sheet of Kotak Mahindra-ING Vysya Bank (Combined Entity C)

(In Rs. Crores)

	Combined Entity C – Kotak Mahindra-ING Vysya Bank				Difference (Post-Merger Performance- Pre-Merger Performance)	Percentage Change
Year/Parameter	2017	2016	2015	Average		
Income Statement						
Revenue	20500.63	28032.36	21471.08	23334.69	2528.11667	12.15%
Expenditure	17436.45	24601.24	18406	20147.9	2139.11667	11.88%
Expenditure (% of revenue)	85.05324	87.76015	85.72461	86.17933	-1.3132278	-0.75%
Tax	1432.75	1592.4	1484.9	1503.35	258.036667	20.72%
PAT	3245.74	3431.12	3065.08	3247.313	1100.35667	51.25%
Balance Sheet						
Deposits	163138.5	135948.8	72843.46	123976.9	37134.974	42.76%
Total Liabilities	261021.6	207043.9	126083.8	198049.8	49807.52	33.60%
Advances	154928.3	144792.8	88632.21	129451.1	33645.7589	35.12%
Total Assets	307084.2	240803.6	148575.8	232154.5	67936.4767	41.37%

Source: Authors' own calculations

Table 5: Cost of Capital of Acquirer (Kotak Mahindra Bank)

Beta	1.24
Risk Free Rate	7.25
Market Premium	8
Cost of Equity	17.17
Cost of Debt	7.15
Debt/Capital	0.841656
Cost of Capital	8.736605

Source: Authors' own calculations

Table 6: Cost of Capital of Combined Entity (Kotak Mahindra-ING Vysya Bank)

Beta	1.24
Risk Free Rate	7.25
Market Premium	8
Cost of Equity	17.17
Cost of Debt	7.1
Debt/Capital	0.853095
Cost of Capital	8.579337

Source: Authors' own calculations

5.2.1 Synergy Analysis in Kotak Mahindra-ING Vysya Bank deal

In the above deal, as it was a banking industry deal, the factors relevant to the banks such as the deposits and advances were taken into account. Figures 3 and 4 and the analysis thereafter shows the effect of synergy at the Income Statement levels. They present the synergy effects in the advances (loans) and deposits.

Figure 3: Percentage Change in Synergy Parameters

Source: Authors' own calculations

Figure 4: Comparison of Synergy Parameters Pre and Post Deal

Source: Authors' own calculations

With the merger, the deposits as well as advances, have improved by 43% and 35% respectively which indicates more funds being involved in the contribution of Net Interest Margin (NIM), hence increased profitability. With the increase of deposits and borrowings in the liabilities, there is a slight decrease in the cost of capital which has slid

down from 8.73% to 8.59% just after the deal. Overall, the deal did work up to the expectations as it experienced an increase in revenues and profitability. However, a decrease in the expenditure could provide a better bottom line. Because of the acquisition resulting into a bigger bank across India, the deposits as well as advances have seen a huge jump, thus providing a healthy margin for Kotak Mahindra Bank to work upon.

5.3 Sun Pharmaceuticals Industries Limited and Ranbaxy Laboratories Deal

Revenue synergy has been realised as there is an increase of about 12% across pre and post-deal period (Table 7A and 7B). Despite the expenditures being on the increase, there is an appreciable increase in the profits which have soared about 50% across the deal. Table 8 gives the cost of capital of the acquiring company, i.e., Sun Pharmaceuticals Industries Ltd.; while Table 9 gives the cost of capital of the combined entity, i.e. Sun Pharma-Ranbaxy Laboratories.

Table 7A: Pre-Merger Performance- Income Statement and Balance Sheet of Sun Pharmaceuticals Industries Limited (Entity A) & Ranbaxy Laboratories Deal (Entity B) (In Rs. Crores)

	Entity A – Sun Pharmaceuticals Industries Limited				Entity B- Ranbaxy Laboratories			
Year/ Parameter	2014	2013	2012	Average	2014	2013	2012	Average
Income Statement								
Revenue	166325.9	116879.5	84910	122705.1	107611	127505	10584	11365
Operating Expenses	26526	22862	21428	23605.33	26431	23812	95369	48537.3
Tax	7021.7	8455.5	3131.9	6203.033	2652	2939.04	1969.3	2520.1
PAT	38790	29830.6	26566.9	31729.17	-8586	9509.9	-28834	-9303.4
Profit Margin (%)	23.32	25.52	31.29	25.86	-7.98	7.46	-27.24	-8.19
Balance Sheet								
Intangible Assets	14844.8	13540.9	3160.3	10515.33	20608.58	21510.6	21257	21125.6
Fixed Assets	106843.6	90796.4	61806.3	86482.1	-	-	-	-
Intangible Assets/ Fixed Assets	0.138939	0.149135	0.05113	0.12159	-	-	-	-
Debt	486.7	1152.6	1554.2	1064.5	24743.82	19712.8	9749.5	18068
Equity	185249.5	149897.3	122357.8	152501.5	33025.6	40832.1	28687.1	34181.6
Debt/Equity	0.002627	0.007689	0.01270	0.00698	0.749231	0.48277	0.3398	0.5286
Capex	9060	8455	7129	8214.667	6247	4767	4773	5262.3

Source: Authors' own calculations

Table 7B: Post-Merger Performance- Income Statement and Balance Sheet of Sun Pharmaceuticals-Ranbaxy Laboratories (Combined Entity C)*(In Rs. Crores)*

	Combined Entity C: Sun Pharmaceuticals-Ranbaxy Laboratories				Difference in Post-Merger and Pre-Merger Performance	Percentage Change
Year/ Parameter	2017	2016	2015	Average		
Income Statement						
Revenue	330162.2	288866.8	279396.8	299475.3	63115.13	26.70%
Operating Expenses	57242.1	54016.5	53534.1	54930.9	-17211.8	-23.86%
Tax	15887	9349	9146.9	11460.97	2737.807	31.39%
PAT	95254.2	58303.8	54882.1	69480.03	47054.29	209.82%
Profit Margin	28.85%	20.18%	19.64%	23.20%	-	-
Balance Sheet						
Intangible Assets	35364	40708.5	20063.3	32045.27	404.2433	1.28%
Fixed Assets	228453.5	233549.8	199059.6	220354.3		
Intangible Assets/ Fixed Assets	0.154797	0.174303	0.10079	0.145426		
Debt	18600.4	31167.3	13684.2	21150.63	2017.403	10.54%
Equity	366975.8	314042.2	256231.9	312416.6	125733.5	67.35%
Debt/Equity	0.050686	0.099246	0.053406	0.0677		
Capex	37266	33825	23419	31503.33	18026.33	133.76%

*Source: Authors' own calculations***Table 8: Cost of Capital of Acquirer (Sun Pharmaceuticals Industries Ltd.)**

Beta	0.49
Risk Free Rate	7.25
Market Premium	8
Cost of Equity	11.17
Finance Cost	441.9
Debt	13032.3
Cost of Debt	3.390805921
Debt/Capital	0.002620383
Cost of Capital	11.14961553

*Source: Authors' own calculations***Table 9: Cost of Capital of Combined Entity (Sun Pharma-Ranbaxy Laboratories)**

Beta	0.49
Risk Free Rate	7.25
Market Premium	8
Cost of Equity	11.17
Finance Cost	5789.9
Debt	72345.23
Cost of Debt	8.003154
Debt/Capital	0.063407
Cost of Capital	10.9692

Source: Authors' own calculations

5.3.1 Synergy Analysis in Sun Pharmaceuticals Industries Ltd. - Ranbaxy Deal

In the above deal, as it was a pharmaceutical industry deal, the factors which illustrate the investment in R&D, patents were considered, for instance, the intangible assets. Figure 5 exposes the effect of synergy at the income statement level. From Figure 5, it becomes obvious that the deal did realise revenue synergies of about 27%, and also realised cost synergies as expenditures after the merger went down by 24%. A humongous increment of 210% was witnessed in PAT post-deal period.

Figure 5: Percentage Change in Synergy Parameters

Source: Authors' own calculations

Figure 6: Comparison of Synergy Parameters Pre and Post Deal

Source: Authors' own calculations

Figure 6 reveals the synergy effects in the debt-equity levels and investments. The investment in terms of intangible assets has increased from 12% to almost 15% after the deal which portrays more value in patents, R&D activities. Sun Pharma was highly unlevered before the deal but it has slowly and steadily increased its Debt to Equity ratio from 0.7% to around 7% which provides a lower cost of financing. On the similar lines, the cost of capital has also seen a marginal improvement over the period which has decreased from 11.14% to 10.96%. On the basis of synergy realisation, the deal looks successful as revenue as well as cost synergies have been realised.

5.4 Express Scripts and Medco Health Solutions Deal

Table 10A presents the pre-merger performance of Express Scripts and Medco Health Solutions in terms of their Income Statement and Balance Sheet. Table 10B presents the post-merger performance of Express Scripts- Medco Health Solutions. Table 5 gives the cost of capital of the acquiring company, i.e., Express Scripts; while Table 6 gives the cost of capital of the combined entity, i.e. Medco Health Solutions.

Table 10A: Pre-Merger Performance- Income Statement and Balance Sheet of Express Scripts (Entity A) & Medco Health Solutions (Entity B)

(In USD millions)

Year/ Parameter	Entity A – Express Scripts				Entity B- Medco Health Solutions			
	2012	2011	2010	Average	2012	2011	2010	Average
Revenue	46128.3	44973.2	24722.3	38607.9	70063.3	65968.3	59804.2	65278.6
Operating Expenses	42918.2	42015	22298.2	35743.8	65441.1	61633.2	55777.2	60950.5
Tax	748.6	704.1	481.8	644.833	920.1	906.9	823	883.333
PAT	1278.5	1181.2	827.6	1095.76	1455.7	1427.3	1280.3	1387.76
Profit Margin	2.77%	2.63%	3.35%	2.84%	2.08%	2.16%	2.14%	2.13%
Intangible Assets	1620.9	1725	1882.6	1742.83	2148	2409.8	2428.8	2328.86
Fixed Assets	7549	7616.5	7787.7	7651.06				
Intangible Assets /FA	0.21471	0.22648	0.24174	0.22779				
Debt	7076.4	2493.7	2922.6	4164.23	3001.6	5003.6	4000.1	4001.76
Equity	2743.7	3606.6	3551.8	3300.7	4009.4	3986.8	6387.2	4794.46
Debt/Equity	2.57914	0.69142	0.82285	1.26162	0.74864	1.25504	0.62626	0.83466
Capex	123.9	145.9	4822.4	1697.4	327.6	1019.5	305	550.7

Source: Authors' own calculations

Table 10B: Post-Merger Performance- Income Statement and Balance Sheet of Express Scripts- Medco Health Solutions Deal (Combined Entity C)

(In USD millions)

	Combined Entity C – Express Scripts-Medco Health Solutions				Difference in Post-Merger and Pre-Merger Performance)	Percentage Change
Year / Parameter	2015	2014	2013	Average		
Revenue	100887.1	104098.8	93714.3	99566.73	-4319.8	-4.16%
Operating Expenses	92962	95966.4	86402.4	91776.93	-4917.37	-5.09%
Tax	1031.2	1104	838	991.0667	-537.1	-35.15%
PAT	2035	1926.3	1362.4	1774.567	-708.967	-28.55%
Profit Margin	2.02%	1.85%	1.45%	1.78%		
Intangible Assets	12255.2	14015.6	16037.9	14102.9	10031.2	246.36%
Fixed Assets	45307.5	45051.4	47354.3	45904.4		
Intangible Assets /FA	0.270489	0.311102	0.338679	0.307223		
Debt	11012.7	12363	14980.1	12785.27	4619.267	56.57%
Equity	20064	21844.8	23395.7	21768.17	13673	168.90%
Debt/Equity	0.548879	0.565947	0.640293	0.587338		
Capex	411.9	72.1	10391.7	3625.233	1377.133	61.26%

Source: Authors' own calculations

Table 11: Cost of Capital of Acquirer (Express Scripts)

Beta	1.34
Risk Free Rate	1.97
Market Premium	3.73
Cost of Equity	6.9682
Finance Cost	299.7
Long term Debt	7076.4
Cost of Debt	4.235204341
Debt/Capital	0.72060366
Cost of Capital	4.998793326

Source: Authors' own calculations

Table 12: Cost of Capital of Combined Entity (Express Scripts-Medco)

Beta	1.34
Risk Free Rate	1.97
Market Premium	3.73
Cost of Equity	6.9682
Finance Cost	619
Long term Debt	14980.1
Cost of Debt	4.132149
Debt/Capital	0.390353
Cost of Capital	5.861139

Source: Authors' own calculations

5.4.1 Synergy Analysis in Express Scripts-Medco Deal

In the above-mentioned deal, as it was a pharmaceutical industry deal, again the factors which demonstrate the investment in R&D, patents were taken into account, for instance, the intangible Assets. Figure 7 depicts the effect of synergy at the income statement levels. As see in Figure 7, the synergy expected out of the acquisition wasn't realised at all. The revenues decreased by about 4% whereas the profits after tax dwindled by almost 29%. The expenditures though decreased by 5% but it couldn't compensate for the decline in profits. The profit margins substantially reduced from 2.84% to 1.78%, thereby showing a significant decrease in the profitability after the deal.

Figure 7: Percentage Change in Synergy Parameters

Source: Authors' own calculations

Figure 8: Comparison of Synergy Parameters Pre and Post Deal

Source: Authors' own calculations

Figure 8 highlights the synergy effects in the debt-equity levels and investments. The intangible assets as a percentage of fixed assets have increased which signifies that there is a larger contribution of patents, R&D in the fixed assets. However, we witness that the Debt to Equity ratio has decreased from 1.26 to 0.58 which is majorly due to lower debt to equity ratio of Medco Health Solutions which was around 0.83. The cost of capital of Express Scripts has increased marginally from 4.99% to 5.86% because of the higher component of equity and the lower component of debt.

Overall, the deal has not been able to realise the synergies which were expected out of the deal. The revenues have decreased along with the profit figures. However, we see a larger chunk of intangible assets forming part of fixed assets which imply a higher value of patents and R&D costs.

6.0 Conclusion

The aim of the current paper is to evaluate the financial synergetic effect in four M&A deals. Firstly, every industry has some elementary performance indicators that the study needed to look into for proper evaluation of the industry, for instance, Fixed Assets in Automobile Industry; Intangible Assets in Pharmaceutical Industry; Deposits and Advances in Banking Industry. Through the actual deal study on various parameters, a basic idea was extracted on the deviation in the estimated, forecasted and the actual synergy. The deals like the Kotak Mahindra -ING Vysya and Sun Pharma-Ranbaxy were able to realise most of the synergies that were estimated and in the 3 year post-acquisition period, were on the right track towards synergy realisation. In Kotak-Mahindra – ING Vysya deal, the surge in revenues as well as profits was witnessed; the deposits and advances too experienced a good jump thereby providing higher Net Interest Margin to the combined entity. In Sun Pharma-Ranbaxy deal, investment in terms of intangible assets improved after the deal reflecting an increment in patents, and R&D activities. Further, cost of capital witnessed a decrease with the increase in financial leverage in the post-acquisition phase. As far as operating synergies are concerned, revenues observed an increase while expenditures of the combined entity reported a decline leading to a substantial increase in profits after tax. The credit of deriving benefits from the synergy of the merged entity can be attributed wholly to the management of Sun PharmaCompany, well-known for the turnaround of corporate/entities.

However, in the Amtek Auto-JMT Auto, the deal couldn't realise cost synergies as their expenditures sky-rocketed after the merger, resulting in the profits coming down by 46 percentages. But, as the capital structure was dominated more by debt in the post-

acquisition period, it led to a lower cost of capital from 13.14% to 11.25%, thus suggesting lower cost financing synergy. Amtek badly needed to cut down the expenditures which increased histrionically after the acquisition to realise the synergies in revenues.

On the other hand, Express Scripts-Medco deal failed miserably because it couldn't attain revenue synergies after the merger; though it was able to reduce the expenditure levels, the bottom line suffered by about 28% due to lower growth in revenues. Thus, summarizsng it may be stated that the issues related to the actual synergy realisation cannot be overlooked because, in reality, the successful realisation of synergy in merger-acquisition deals stands at 50%, as has also been observed in the current study with a smaller sample size. The key problem arises due to a longer time frame for the realisation of a single type of synergy, there by depressing the success rate extensively. Moreover, prior to the deal, the value of synergy is mostly over-estimated and often the combined entity isn't able to reach the synergy targets, as can be witnessed in the Amtek Auto-JMT Auto deal and Express Scripts-Medco deal.

The methodology employed in the paper is general and permits the use of different assumptions while valuing the synergies. Hence, it can be easily used by practitioners as a convenient, intuitive approach for quick assessment of probable M&A effects for a pool of companies of diverse sectors.

The limitation of the study is that the qualitative factors related to the entities like their organizational culture, human resource quality, top management personalities (which determine their management style), internal work environment, employee satisfaction and morale, proximity to and control of the resources and markets etc. have not been taken into consideration, but undoubtedly these factors may play a vital role in determining the time frame required to realise the gains of the deal as well as in justifying the magnitude and direction of impact on the quantitative factors.

In reality, proper synergy valuation embroils a lot of elements which work towards setting a price for synergy during an M&A deal. Along with that, difficulties in the realisation of synergies and its proper integration further add to the difficulty level.

References

Altunbas, Y., & Marqués, D. (2008). Mergers and acquisitions and bank performance in Europe: The role of strategic similarities. *Journal of Economics and Business*, 60(3), 204-222.

Ansoff, H.I. (1965), *Corporate Strategy: An Analytic Approach to Business Policy for Growth and Expansion*, McGraw-Hill, New York, NY.

Chatterjee, S. (1986). Types of synergy and economic value: The impact of acquisitions on merging and rival firms. *Strategic Management Journal*, 7(2), 119-139.

Christensen, C. M., Alton, R., Rising, C., & Waldeck, A. (2011). The big idea: The new M&A playbook. *Harvard Business Review*, 89(3), 48-57.

De Graaf, A., & Pienaar, A. J. (2013). Synergies in mergers and acquisitions: A critical review and synthesis of the leading valuation practices. *South African Journal of Accounting Research*, 27(1), 143-180.

Eliasson, S. (2011). Synergies in mergers and acquisitions: A qualitative study of technical trading companies. *Master's Thesis in Business Administration*. Jonkoping University. Retrieved from <https://www.diva-portal.org/smash/get/diva2:512472/FULLTEXT01.pdf>

Fred, W. J., Kwang, C. S., & Susan, H. E. (2003). Mergers, restructuring, and corporate control. *New Jersey: Prentice-Hall*.

Gaughan, P. A. (2010). *Mergers, acquisitions, and corporate restructurings*. John Wiley & Sons.

Hamza, T., Sghaier, A., & Thraya, M. F. (2016). How do Takeovers Create Synergies? Evidence from France. *Studies in Business and Economics*, 11(1), 54-72.

Hankir, Y., Rauch, C., & Umber, M. P. (2011). Bank M&A: A market power story?. *Journal of Banking & Finance*, 35(9), 2341-2354.

Hellgren, B., Löwstedt, J., & Werr, A. (2011). The reproduction of efficiency theory: The construction of the AstraZeneca merger in the public discourse. *International Journal of Business and Management*, 6(5), 16-27.

Huyghebaert, N., & Luypaert, M. (2013). Sources of synergy realisation in mergers and acquisitions: Empirical evidence from non-serial acquirers in Europe. *International Journal of Financial Research*, 4(2), 49.

Junge, L. M. (2014). *Operating Synergy; Types and their Impact on post-merger Performance* (Doctoral dissertation, Master Thesis, Department of Finance, Faculty of Economics and Business Administration. Tilburg University).

Junior, P. R., de Oliveira Pamplona, E., & da Silva, A. F. (2013). Mergers and acquisitions: An efficiency evaluation. *Applied Mathematics*, 4(11), 1583-1589.

Malik, M. F., Anuar, M. A., Khan, S., & Khan, F. (2014). Mergers and acquisitions: A conceptual review. *International Journal of Accounting and Financial Reporting*, 4(2), 520.

Marangu, K. (2007). *Effects of mergers on financial performance of non listed banks in Kenya* (Doctoral dissertation, University of Nairobi. Retrieved from <http://erepository.uonbi.ac.ke:8080/xmlui/handle/123456789/21456>

Ogada, A., Achoki, G., & Njuguna, A. (2016). Effect of Synergy on the Financial Performance of Merged Institutions. *American Journal of Finance*, 1(2), 33-49.

Sirower, M. L., & Sahni, S. (2006). Avoiding the “synergy trap”: Practical guidance on M&A decisions for CEOs and boards. *Journal of Applied Corporate Finance*, 18(3), 83-95.