Chapter 3

Review of Literature

Overview

Studies conducted Abroad

Survey of Studies on Mergers and Acquisitions

Performance Measure

Studies conducted in India

References
An attempt has been made by researcher to review and locate literature related study in this chapter. The relevant studies have been found from the various sources, are as below.

OVERVIEW

Merger and acquisition for long have been an important phenomenon in the US and UK economics. In India also, they have now become a matter of everyday occurrence. They are the subject of counting interest to different persons such as the business executives who are looking for potential merger partners, investment bankers who manage the mergers, lawyers who advice the parties, regulatory authorities concern with the operations of security market and growing corporate concentration in the economy and academic researchers who want to understand these phenomenon better.

The 1970s and 1980s was an active era for mergers and acquisitions and for research on them in most of the countries. During these decades, economics and finances researchers (especially in US and UK) made great strides in understanding the operations of capital markets and ways in which causes and effects of merger and acquisitions might be model and measure. Hence, a whole plethora of research on these and relate issues has been conducted abroad. However, not much research available on this topic relevant to the Indian conditions since it is relatively a new phenomenon which has gain momentum only during the last decade.

An extensive review of literature has been carried out in order to enhance the present level of understanding in the area of mergers and
acquisitions, gain insight into the success of failure of mergers and formulate the problem for further research in this area. Broadly, literature review has been done on empirical studies in books, journals, published papers etc. In the literature survey out of India, the issues covered include theories of the firm conceptualized into the motives for merged, their empirical investigation, performance measure of merged firms using share price data and accounting data, empirical examination of financial characteristics of merged and merging firms and the determinants of aggregate merger activity. These studies have been reviewed and summarized in following manner, though very limited has been reviewed on studies conducted in India.

STUDIES CONDUCTED ABROAD

Chart 3:1 presents a bird’s eye view of various aspects relating to mergers and acquisitions on which studies have been conducted abroad. These are discussed in detail in the following paragraphs.

Chart 3.1
Survey of Studies on Merger

Theories of Firm
Motives of mergers
Financial performance
Financial Characteristics of merger participants

Share Price Data
Accounting Data
Theories of Firms

Corporate restructuring attained through M&A, tender offer, joint venture, demerger, going private, might be to increase buying power, capturing market and control over supply, or to reduce risk by way of diversification. However, one fundamental reason for restructuring is to strengthen the present business conditions and help its growth. Different theories have been developed by various analysts to explain the motives for such corporate restructuring through M&A activities. These theories are two major competing theories of the firms have been evolved in the academic literature and empirical evidence in support of both is available. These two theories can be used to explain why companies engage in mergers and takeovers and to predict the outcome of post-merger performance.

First is the Neo Classical Profit Maximization Theory of the firm which holds that competitive markets forces motivate firms to maximize shareholders wealth. The theory states that the firms will engage in takeovers if it results in increased wealth for acquiring company’s shareholders [Manne (1965)]. Increased shareholders wealth is likely to results if acquiring company’s profitability increase after the takeover. The shareholder wealth maximization theory thus requires that a takeover should lead to increased profitability for the acquiring firm for it to be justified. Profitability can increase through the creation of
monopoly power, synergies or injecting superior management into the acquired firm.

However, a constraint on this motive for takeover occurs when lots of firms compete with each other to take over target firms. These firms tend to bid against each other until all the potential profit available from monopoly power, synergy, restructuring etc. is driven away [This is the case with perfectly competitive acquisition market as termed by Mandelkar (1974)]\(^2\).

In opposition to the neoclassical economists, Robin Marris (1964)\(^3\), W.J. Baumol (1959)\(^4\) and others have put forward the ‘Theory of Maximizing Objective of Growth’. While each of them attribute different behavioral objectives to management (for example, Baumols’ sales maximization, Marris growth maximization), they all have recognized the separation of ownership and control in a modern public company. The theory therefore, holds that beyond achieving a certain satisfactory level of profits, managers will attempt to maximize their own self interests and these do not necessarily correspond with maximizing shareholders wealth. Management’s self interests include such factors like reducing the risk of losing their jobs, increasing their salary levels and increasing their power and job satisfaction. These self interests can be aided by growth in size and takeovers are, in practice, the quickest way of growing. Hence, the maximization of management growth theory does not necessarily require increased profitability; an increase in size and an increase in manager’s benefits are the criteria. This is also because level of manager’s salaries and other goals they seek
(such as power, prestige etc.) are related more to the size of the firm than to its profitability. Market for managers is imperfect and managerial promotion generally takes place through bureaucratic and political process within the firm, rather than through market. So, managers are more likely to increase size of the firm they work for, than to maximize its profitability.

Marris, in his Economic Theory of Managerial Capitalism, propounded for the first time a theory of takeovers bids. Before his work, there did not exist in literature, any formal theory of takeovers i.e. an explanation of what kind of firm is acquired. The literature, however, did contain motives usually given for acquisitions which are summarized as follows.⁵

1) Desire to achieve production economies of large scale and multi unit operations.

2) Possibility of achieving distribution and advertising economies.

3) Financial advantages of large size.

4) Strategic control of patents.

5) Acquisition of financial resources.

6) Response to legal and institutional environment.

7) Tax advantages.

8) Gain from sale of securities.

9) Gains to promoters.
10) Desire to limit competition.

Marris summarized all these motives for takeover in terms of a single variable the “Valuation ratio”. The valuation ratio “V” at any point of time is defined as:

\[ V = \frac{\text{Stock market value of a firm's equity capital}}{\text{Book value of its net equity assets}} \]

If assets are valued in the firm’s balance sheet at replacement cost the denominator of the above expression reflects the value of economic resources employed by the firm. The numerator, on the other hand, reflects stock market’s valuation of earning power of these resources under the present management.

Marris suggests that, corresponding to the market’s valuation ratio (Vim) of any firm i, there also exists some other firm j’s subjective valuation ratio (Vij) reflecting j’s valuation of i if were to acquire i. When Vij is greater than Vim, there are chances of a takeover bid. In other words, the theory of takeover bid simply asserts that, other things being equal, firm i is likely to be taken over by firm j if j’s valuation ratio for i is higher than market’s and any other firm’s valuation ratio for i.

In addition to these two theories, two general theories have also being advanced in literature to explain the motives of merger/takeover activity. Williamson’s (1968) Native Trade off Model states that only a small gain in efficiency is necessary to offset a relatively large gain in market power and as such mergers are generally beneficial because the
loss suffered by consumers resulting from an increase in price is more than outweighed by gains to producers. This model, which is not without critics, has been cited in many US antitrust law suits as justification for mergers.

Gort’s (1969) Economic Disturbance Theory is based on the premise that differences exist between the shareholders concerning the present value of share because of information imperfection as individuals possess different information and asses it differently. These differences occur because of economic disturbances such as rapid change in technology and share prices. When technology changes are rapid, the product life cycle is shortened and past record of the firm becomes less relevant to its future. Rapid changes in share prices represent a break with the past leading to a temporary disequilibrium since it takes time for the investor expectations to be realigned to market events. Consequently, whenever share price change rapidly; (upward or downward) merger activity will increase.

Gort examined whether explanations of mergers, such as pursuit of monopoly power or economies of scale, actually explained fluctuations in the level of merger activity. The rate of merger was defined as the number of acquisitions to total business firms in a given sector.

He tested the hypothesis that frequency of merger was a function of either economic disturbances that lead to valuation discrepancies or economies of scale by taking few explanatory variables. His results supported the valuation discrepancy hypothesis and argued against an important role for economies of scale.
To sum up, although many contributions have been offered from different perspectives and disciplines, researchers have not been able to formulate a general theory of mergers and acquisitions.\textsuperscript{9}

Motives of Mergers

A number of reasons have been advanced and hypothesized in literature as justifications of mergers. Classification of merger motives to explain merger activities were found to be one of the most difficult and complex task by most of the researchers.

An attempt made by Steiner (1975)\textsuperscript{10} emphasized on the multivariate nature of motives for merger. Depicting mergers as being contingent of actors, climates, motives and participants, he classified motives into four categories: Efficiency, inefficiency, strategic and monopoly theories. According to him, efficiency occurs if value is increased to shareholders. Synergies, economies of scale, acquisition of market share may be strategic or even aimed to create monopoly. Inefficiency theories include managerial motives which lead to agency problems i.e. mergers may enhance wealth of managers at the expense of shareholders. Management may pursue its own aim than that of its shareholders. Similarly, an opportunity for managers to indulge in insider trading may be another reason for merger. Fourth kind of motive may be strategic and may include acquisition of growth, reduction in capacity and opportunity for accounting manipulations. Some of these may lead to increase in value and may overlap with efficiency.
In a pioneer compilation of merger studies in seven major countries\textsuperscript{11} with the same set of hypotheses (about determinants and effects of mergers) and methodological homogeneity, D.C. Mueller (1980)\textsuperscript{12} reports three kinds of results:

1) How merging firms differ from the ones that do not merge.

2) Certain tests of hypotheses concerning determinants of mergers.

3) Those concerning the effects of mergers.

These results are based on empirical investigations carried out at micro-economic level within each country and relate to the merger wave of 1960’s.

The economic rationale and motivation for the specific hypotheses and issues that have been examined in empirical studies across the seven countries have been laid down by Hughes, Mueller and Singh.\textsuperscript{13} They have cited three reasons for comparing pre-merger characteristics of various groups of merging and non merging firms.\textsuperscript{14} Firstly, such comparisons are important from the point of view of both economic theory and policy. Neo classical economists hypothesizes profit maximization as major incentive for takeover i.e. takeover mechanism selects profit maximizing firms and punished non maxi misers (Mead, 1968).\textsuperscript{15} On the other hand, managerial theorists such as Galbraith (1967),\textsuperscript{16} Marris (1968),\textsuperscript{17} Mueller (1969)\textsuperscript{18} hypothesized that takeover mechanism is more likely to favor firms who pursue fast growth. So, a comparison of living (none taken over firms) and dead (taken over) firms provides evidence on this issue. A comparison of acquiring firms as compared to the acquired firms also gives an indication of acquiring
firms as compared to the acquired. Secondly, with the different economic and institutional background, in what way these characteristics differ in each country are of special interest and thirdly, a profile of various groups of merging and non merging firms is required for full understanding of subsequent results of determinants and effects of mergers.

Hypotheses concerning the determinants of mergers can be classified into various categories (Steiner 1975) but the authors have categorized them into three:

(1) The most frequently hypothesized cause of mergers is bring about an increase in profits by either increasing market power of the firm or by reducing its cost or both. Increasing size or diversification can make various organizational changes more efficient. Also, possible tax advantage from mergers has been emphasized as another cause of merger activity.

(2) Another hypothesized cause of merger is based on" Gort’s (1969) economic disturbance theory of mergers. There are differences in individual stockholders expectations because of differences in information possessed, evaluation of information done and different degrees of optimism. That is to say, merger activity is associated with rapid changes in stock market prices.

(3) Finally, the broader set of hypothesized cause of merger is maximization of growth or sales based managerial model of Marris (1968) and Baumol (1967). The possible effects of mergers have
been discussed by the authors in terms of three types of mergers, namely, horizontal, vertical and conglomerate mergers.

The cross sectional comparisons of merger statistics done by Mueller (1980)\textsuperscript{23} produced some consistent patterns across countries and some inconsistencies requiring further theorizing of the determinants. None of the hypotheses examined received consistent confirmation across the seven countries. The conclusion drawn is based on Steiner’s electric theory of mergers. “Since no single hypothesis explains all mergers, a variety of hypothesis must be assumed to govern.”\textsuperscript{24}

On the effect side, the rather consistent lack of evidence that mergers lead to or are expected to lead to significant increases in profits is inconsistent with all the neo classical theories of mergers. Some form of managerial motives for mergers i.e. pursuit of growth is left as sort of residual explanation for why mergers take place. Further, not much difference emerged in the result of US and other European countries in spite of the much heavier incidences of horizontal merger activity in European countries. Similarly, the anticipate differences in results of US and UK (with highly developed stock markets) with other countries also did not emerge significant.

Paul Halpern (1983)\textsuperscript{25} categorized acquisitions theories in to two classes. The first refers to non value maximizing behaviour by management of acquiring firms. Acquisitions are considered as attempts to maximize growth in sales or assets or to control a large empire. Acquisitions of this type have no economic gain to be divided among
companies. Given the cost of negotiating and the potential problem of co-ordination of expanding corporate empire, there is an overall economic loss. The growth maximization hypotheses is more likely to occur for acquiring firms that are engaged in conglomerate mergers and have active acquisition programs.

The second class of theories refer to value maximization motivations in which acquisitions should meet the same criteria as any other investment decisions. There are number of acquisition motivations that are consistent with value of goal maximization. The first type refers to financial motivations where acquisition permits a redeployment of excess cash held by either acquirer or acquiree. Then, diversification benefits provided by the acquisition can reduce the probability of default thereby reducing expected bankruptcy costs and increasing debt capacity of new entity. Both of these influences would increase market value of equity after acquisition relative to sum of market values prior be acquisition.

Another set of motivations is captured by synergy in which an acquisition results in an increase in the expected cash flows over their sums as independent firms. These gains can occur from economies of scale for horizontal mergers, excess capacity in some factors of production (such as managerial or financial control) or economies of scope which generate cost advantage when output is increased by the post-acquisition entity. Finally, the achievement of monopoly power through an acquisition is often included in synergy class because of expected increase in post-acquisition cash flows.
Another motivation is an attempt by the acquiring firm’s management to take advantage of asymmetry in information. This information hypotheses populates that acquire firm has information concerning the target firm that is not available to other participants in this market and is not reflected in current share price of target firms.

The last set of value maximization acquisition motivations is based on the attempt by an acquirer to obtain control of the target. In its most general form, the acquiring firm desires control to replace an incompetent management or to force existing management to follow profit maximization strategy. The corporate control hypothesis is developed by Berk and Means (1932)\(^\text{26}\) where managers who control the firms make decisions which do not maximize the market value of equity to existing shareholders.

This study reviewed the studies that empirically these competitive hypotheses to identify whether value or non-value maximizing behavior is the dominant explanation of merger activity.

The results of studies by Kummer and Hoffmeister (1978),\(^\text{27}\) Dodd and Ruback (1977),\(^\text{28}\) Bradle (1980)\(^\text{29}\) and Bradley, Desai and Kim (1982)\(^\text{30}\) observed positive and significant abnormal performance surrounding the event date, thus concluding that takeovers are value maximizing decisions in which markets expect benefits to the bidding firm after the tender offer is successfully completed.

Eckbo (1981)\(^\text{31}\) and Stillman (1982)\(^\text{32}\) tested for the existence of monopoly power by observing abnormal return performance of
horizontal rivals of the target firms involved in a merger. Stilman’s study found no evidence consistent with the market power motivation for mergers in a sample of sixteen horizontal mergers. Eckbo, applying his methodology to define rival firms to Stillman’s sample found results consistent with his large sample.

The tests provided by both these studies cannot however, reject economies of scale cost reduction or monopoly power motivations since there is no reason provided as to why mergers would be expected to generate benefits to rivals as identified by abnormal gains.

Bradley, Desai and Kim (1982)\(^{33}\) also empirically evaluated the information hypotheses. Their results indicated a significant positive return to target shareholders after an unsuccessful tender offer in an expectation of a future tender offer. If such an offer is not forthcoming (within five years of an unsuccessful offer), the share prices fall back to their pre-offer level. If the offer materializes and there is a successful bid, and additional significant abnormal return is obtained by target shareholders. Therefore, their evidence is inconsistent with the pure information hypotheses.

Brick, Haber and Weaver (1982)\(^{34}\) empirically explored the financial motives in mergers. To isolate effect of diversification from other possible motives for mergers (such as operational synergies), they have confined their analysis to conglomerate mergers only. Their study analyzed fifty seven conglomerate mergers to investigate the role of leverage and diversification in the determination of total merger premium. The regressions performed indicated that significant positive
correlation exists between the merger premium and diversification. The results corroborated the view that diversification, especially in presence of high levels of debts provided a powerful stimulus for mergers.

Another study by Myers and Majluf (1984)\textsuperscript{35} suggested a specific financial motive for mergers based on a complimentary fit between slack\textsuperscript{36} rich bidders (those with low gearing levels) and slack poor targets. The study assumed asymmetry in information between managers and shareholders, and that manager’s act in interest of existing shareholders. The assumption made the form of financing important i.e. the model generally predicted disadvantage to equity financing and value to internal financing.

Another study by Asquith and Millins (1986)\textsuperscript{37} confirmed the negative impact of external equity financing. According to their theory, the value created through a merger of compliments arose from additional positive NPV investment taken up by a merged firm that slack poor firm might ignore. The value, created here depends on the alternative ways of financing target investments. Thus, value will be created in mergers if firms rich in financial slack\textsuperscript{38} acquire slack poor firms.

Robert Bruner (1988)\textsuperscript{39} explored the hypothesis that capital structure change provided bidder and targets a motive for merger. Their study, in testing capital structure change, used both traditional debt to total capital ratio and net debt ratio,\textsuperscript{40} a new measure that adjusts for cash. It also controlled for the secular rise in leverage of firms over an eighteen year observation period and finally explicitly tested for a
relationship between merger related changes in capital structure and shareholder return.

Their results, conducted on a sample of seventy five bidder target pairs of which forty nine were, consummated and twenty six were terminated, are consistent with the financial economics motives for mergers. Bidders are relatively unleveled extant and then lever up. Merger announcement returns are associated with these changes.

The findings also support the information based theory of Myers and Majluf (1984).\textsuperscript{41} Before merger, bidders are relatively slacking rich and target slack poor. The strength of these differences depends upon whether merger was ultimately consummated or not. Successful mergers confirm to the theory more than the unsuccessful ones. The change in targets slack because of mergers is somewhat associated to total gains to target and bidding shareholders.

Another rationale for mergers, target managerial incompetence or the existence of agency costs was empirically evaluated by Ellert (1976)\textsuperscript{42} Asquith (1983)\textsuperscript{43} and Langetieg (1978).\textsuperscript{44} Regardless of definition of event dates, all studies using monthly share price data observed negative abnormal returns for target firms over periods well before the event date. These observations are consistent with the hypothesis that merger occur to discipline target firms management.

Additional evidence on this hypothesis of corporate control was presented by Dodd (1977)\textsuperscript{45} by evaluating abnormal returns for terminated merger proposals. Managers or Board of Directors of target
firms have veto power of rejecting a merger proposal on any grounds or even to maximize the size of premium obtained by target shareholders. In either case, management veto must be accompanied by negative abnormal returns and relatively stable equity price in the expectation of a new merger or tender offer. The study’s empirical evidence was consistent with these expectations; the abnormal returns for vetoed mergers at days -1 and 0 were negative and significant.

Amihud and Lev (1981)\textsuperscript{46} empirically evaluated the managerial motive of reducing risk through mergers and their effect on shareholders. Their results found that corporations in which ownership was not concentrated engaged in conglomerate merger more often than did other corporations. This happened because management of the former firms are not closely monitored, and therefore pursue risk reduction activities for their personal benefits. Agarwal and Mandelker (1987),\textsuperscript{47} on the other hand, reported that large ownership positions in their firm’s shares by manager of acquiring firms are typically associated with risk increases rather than risk decrease from mergers. Langetieg, Haugen and Wichern (1980)\textsuperscript{48} also found that mergers generally resulted in increase in systematic and unsystematic risk for the combing firms.

Lewellen, Loderer and Rosenfeld (1989)\textsuperscript{49} also empirically evaluated risk reduction motive of mergers on a sample of two hundred and three NYSE listed firms that merged during the time period 1963-84. Merger related changes in the firm’s risk as reflected by changes in variability of acquiring company’s stock returns were measured by the two ratios estimated from market model.\textsuperscript{50}
(1) DVR (i.e. the ratio of estimated total variance of stock return after the merger to the estimated total variance before it) and

(2) DVRR (i.e. the ratio of estimated merger to before merger residual variances of acquiring firms’ stock returns).

For the majority of firms in their sample, the results found an increase in total and residual stock return risk. In addition, there was very less evidence that risk reducing cases were more frequent when senior managers had especially large, own company shareholdings. Finally, from the examination of estimates of stock return performance of acquiring companies on and around the dates of merger offer announcements and approvals, they found no indication that risk reducing mergers in the sample tended to occur at the differential expense of shareholders’ wealth.

Further investigation into the rationale for mergers was the empirical analysis of mergers as a means of restructuring distressed firms carried on by Clark and Ofek (1994). They examined a sample of thirty eight takeovers occurring during the time period 1981-88, (generally all within the same group) identified as an attempt to restructure distress targets. The study used the indicators that focused on post-merger performance of both combined firms and target firms alone to test whether the combination of target and bidder was a successful method of restructuring the targets. Their results indicated that most of the mergers were not successful. Out of the sample of thirty eight takeovers classified as restructuring attempts, twenty were termed as failures, nine as marginally successful and nine as successful.
Nevertheless, the study could not conclude that mergers are a poor choice for restructuring distressed targets since they did not analyze the success rate for alternative method of restructuring or the consequences of doing nothing on total welfare.

Averbach and Reishus (1987)\textsuperscript{52} carried out an empirical investigation of three hundred and sixteen merged firms to examine whether tax synergies are significant determinants of incidence and pattern of corporate mergers.

The study compared the tax characteristics of a sample of three hundred and sixteen merging firms during the time period 1966-83 to those of a similar sample of non merging firms (identical in terms of size and year) chosen at random and using both samples, estimated a model of merger activity.

Their results suggested that an increase in interest deduction could not have been an important factor influencing merger activity during the period under study. The two samples exhibit very insignificant differences in borrowing patterns and model estimated by them suggested that low debt ratio is associated with lower probability that firm will be acquired. This means that probability that a merger yield corporate tax benefits is no higher than probability that random pairing between two firms will produce tax benefits. In conjunction to their discovery that significant corporate tax benefits are obtained in only 20% of merger cases, these results cast doubt on the claim that taxes have induced significant fraction of merge during this period.
Berkovitch and Naryanan (1990) conducted an empirical investigation to distinguish among the three major motives that have been advanced in literature: the synergy motive, the agency motive and hubris motive. The synergy motive suggests that takeovers occur because of economic gains that result by merging the resources of two firms. The agency motive suggests that takeovers occur because they enhance the acquirer management’s welfare at the expense of acquir’s shareholders. The hubris hypotheses suggest that managers make mistake in evaluating target firms, and engage in acquisitions even when there is no synergy.

This study used correlation among targets, acquirers and total gains to distinguish among these motives. In hypothesized positive correlation between target and total gains in case of synergy, negative correlation in case of agency and zero correlation in case of hubris. Using sample of three hundred and thirty tender offers during 1963-88, these hypotheses were tested for the entire sample and for sub-sample of positive and negative total gains.

The results of the study indicated that, on an average, takeovers yield positive total gains (in 75% of their sample). In a sub-sample of positive total gains (two hundred and fifty two tender offers) correlation between target and total gains was positive, indicating that synergy motive dominated. In the sub-sample of negative total gains (seventy eight), the correlation was negative, indicating that dominant motive was agency. There was evidence that hubris existed at least in positive total gains sample. The study concluded that while synergy is the reason for
majority of takeovers, there is strong evidence that many takeovers are motivated by agency hubris also.

An in-depth study of merger motives by Sudarsanam, Holl and Salami (1996)\textsuperscript{54} in U.K. integrated number of hypotheses concerning the different sources of value creation. It measured the impact of possible agency conflicts between shareholders and managers on the way this value is created and distributed between bidder and target shareholders. They developed various hypotheses to investigate the sources of synergy between bidders and targets and the impact of ownership structure on the returns to shareholders, on a sample of four hundred and twenty nine completed acquisitions in U.K. during 1980-90. The various sources of value creation identified by them from the existing literature included operational synergies arising from economies of scale and scope or increased monopoly power, managerial synergy and financial synergy.

The results of the study confirmed that shareholder wealth experience was indeed conditioned by these three broad categories of influences. In particular, financial synergy dominated operational synergy. A combination of companies with complimentary fit in terms of liquidity slack and surplus investment opportunity was value creating for both groups of shareholders. However, when highly rated firms acquired less highly rated targets, the acquiring firm’s shareholders experienced wealth losses where as target shareholders experienced wealth gains. This result is consistent with acquiring managers acting out of hubris.

Further, their results confirmed that ownership structure had significant impact on shareholders returns. Large shareholding decreased
the return to target shareholders. Equity offers generated smaller wealth gains for both bidders and targets than pure cash or hybrid offer.

To sum up, despite many excellent research papers, we still do not fully understand the motives behind mergers and tender offer or whether they bring an increase in aggregate market values.55

PERFORMANCE MEASURE

This section reviews the literature to highlight the effect of M&A’s on the performance of merged firms to see if they are value creating activities or not. There are two approaches for analyzing post-merger performance vis., analysis based on share price and analysis based on operating performance of the concerned firm.

1. Shareholder performance Measures

Performance measures based on share price data require computation of measure of theoretical share price which would exist in case there is no event (i.e. proposed merger). The financial theoretical share price is then compare to the equal price and the difference is attributed to merger event. This method, referred to as “Events Study” makes an assumption of an efficient market framework56 to measure shareholders return. The efficient market hypothesis assumes that investor’s anticipation of future benefits will be reflected in the acquiring and acquired firms’ stock prices at the time of merger announcement. The evidence whether M&A s creates value for shareholders or not comes from events studies, where the average
abnormal stock market reaction at merger announcement is used as an indication of value creation or destruction. In a capital market that is efficient with respect to public information, stock prices quickly adjust following a merger announcement, incorporating any expected value changes. Thus, the studies based on stock prices measure the impact of M&As on share price returns by comparing the combined firms post-merger share price returns with some benchmark return based on beta risk and/or broad market indices. For this purpose, a technique called Market Model\textsuperscript{57} has been used in most of the empirical studies using share price data in US and UK and elsewhere. This model asserts that there exists a linear relationship between return on individual security and that of market and is given in the form

\[ R_{it} = I_i + R_{mt} + i_t \]

where,

- \( R_{it} \) = represents return on share I on period t
- \( R_{mt} \) = return on general market index
- \( i_t \) = degree to which share varies other than the market (Error term)
- \( I_i \) = intercept and slope of linear relationship between \( R_{it} \) and \( R_{mt} \)

Once, the parameters \( I_t \) and \( I_i \) are estimated, market model are used to generate estimates of residuals around the time of merger announcement. The residuals measure the difference the predicted share price estimated by market model and actual share price i.e. abnormal gain or loss.
The research studies using this approach have thrown up conflicting findings in UK and US, The contrasting findings relate to shareholders return to acquiring firms and to overall gain or loss position. The review of these studies is summarized below.

Events Studies Conducted in U.K.

Firth’s Study (1976) and Franks, Broyles and Hecht’s Study (1977) both used market models to establish whether abnormal gains or losses had arisen to merger participants. Firth’s study investigated with a sample of two hundred and four merger events covering a period of two years i.e. 1973, 1974. Frank’s study investigated the breweries and distilleries industries during 1955-72 working on a sample of seventy events. Both these studies found that there was little evidence that acquirers lost as a result of acquisitions but there was considerable evidence that acquiree gained from it. The summarized their conclusions as under:

1. Shareholders in acquired companies enjoyed abnormal returns averaging 26% during four months prior to completion of merger.

2. During same period prior to merger, shareholders In acquiring companies experienced small positive abnormal returns, which were not sustained.

3. Gains on combined shareholding in acquiring and acquired companies reflected net gains from mergers within industry.
4. Evidence suggested that market began to anticipate mergers at least three months in advance before mergers were announced.

The results of both these studies differ from each other in one important aspect. Both found substantial gains to acquirees, but Firth study\textsuperscript{60} found that as far as acquirers were concerned, merger proved expensive.

In a later study, Firth (1980)\textsuperscript{61} examined the impact of takeovers on shareholders returns and management benefits and, some implications for the theory of the firm were drawn from the results. Their results showed that mergers and acquisitions resulted in benefits to the acquired company’s shareholders and to acquiring company’s managers but losses were suffered by acquiring company’s shareholders. The study concluded that overall benefits to the economy in terms of share price gains or losses were nil in the sense that abnormal gains accruing to acquired companies shareholders were neutralized by losses of acquiring companies.

Table 3.1 highlights the results of the neutral impact of mergers in U.K. during the period 1969-75.

<table>
<thead>
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<th>Offeree</th>
<th>Offeror</th>
<th>Offeree-Offeror Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean gain/loss</td>
<td>-36.6</td>
<td>1103.6</td>
<td>-1140.2</td>
</tr>
<tr>
<td>No. of losses</td>
<td>224</td>
<td>3</td>
<td>350</td>
</tr>
<tr>
<td>No. of takeovers</td>
<td>434</td>
<td>434</td>
<td>434</td>
</tr>
</tbody>
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Source: Firth (1980)\textsuperscript{62}
In the sample of four hundred and thirty four companies, in all except three companies, abnormal gains accrued to shareholders of Offeror Company. The mean gain of 1103.6m was offset by a loss incurred by majority of offeror companies which totaled 1140.2m. The net impact was a loss of 36.6m. The study concluded that “this implies that stock market is expecting little change in the profitability of firms once they have combined any possible benefit in the form of synergy or re-organization of acquired firms are presumably being countered by doubts of whether the offeror has access to management capable of greatly increasing efficiency and because of costs involved in takeover process.63

Franks and Harris’s Study (1989)64 investigated the wealth gains to shareholders on an exhaustive sample of 1898 target firms and 1058 acquirer (bidders) in UK acquisitions during the time period 1955-85. The results of the study found that mergers were on an average, value creating for shareholders as measured by equity market prices around the merger announcement date. Shareholders of target firms gain and bidder shareholders gain or do not lose. The evidence is similar to that found in US studies. The study found higher target wealth gains when bidders held pre-merger equity interest. There was no strong evidence, however, that revised bids or contested bids or pre-merger equity interests affected bidder gains around merger dates.

The study also compared UK results with US and examined the importance of institutional difference between two countries. It also provided an insight into the generality of US results. The results
suggested that target wealth gains in UK and US increase after 1968 and also, if form of offer (tender or other) is controlled, results in US and UK are similar.

Limmack’ Study (1991) investigated the distribution of returns to shareholders of four hundred and sixty two UK companies involved in acquisition during the period 1977-86. Three control models have been used in their analysis: the market model with parameters identified through ordinary least square regression, a model based on adjusted betas and finally, an index relative model. Abnormal returns have been identified around both, bid announcement and outcome dates for bidders and targets in successful and successful bids. Investigation has also been carried out to measure the distribution of wealth changes for bidders and targets separately and both in combination. The results demonstrated that although there has been no wealth decrease to shareholders in totality as a result of takeover, acquiring shareholders of bidder firms did suffer wealth decreases. On the other hand, shareholders in target firms obtained significant positive wealth increases in both completed and abandoned bids. The results thus provided conflicting evidence depending upon period included in analysis of abnormal return and control model used.

The summarized results of three UK based studies on the market model are given in Table 3.2:
Table 3.2
Abnormal Returns for Target and Bidder Shareholders Surrounding UK Takeover Announcements

<table>
<thead>
<tr>
<th>Study period Sample Size</th>
<th>Window</th>
<th>Data</th>
<th>Target</th>
<th>Bidder</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Franks and Harris (1989) 1955-85 1445 targets</td>
<td>Announcement Month</td>
<td>Monthly Returns</td>
<td>22</td>
<td>0.0</td>
</tr>
<tr>
<td>3. Limmack (1991) 1977-86 462 targets</td>
<td>Bid Period</td>
<td>Monthly Returns</td>
<td>31</td>
<td>-0.2</td>
</tr>
</tbody>
</table>


Table 3.3
Post-Merger Performance of Acquirers

<table>
<thead>
<tr>
<th>Study period Sample Size</th>
<th>Window</th>
<th>Data</th>
<th>Bidder</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Firth (1980) 1969-75 434 acquires</td>
<td>+1 to 36 Month</td>
<td>Monthly</td>
<td>-6.3</td>
</tr>
<tr>
<td>2. Franks and Harris (1989) 1955-85 1048 targets</td>
<td>+1 to 24 Month</td>
<td>Monthly</td>
<td>0.0</td>
</tr>
<tr>
<td>3. Limmack (1991) 1977-86 462 targets</td>
<td>+1 to 24 Month</td>
<td>Monthly</td>
<td>-0.2</td>
</tr>
</tbody>
</table>


Events Studies Conducted in US

US literature on mergers and acquisitions is voluminous, and the event study methodology has its origin in US. There are two sets of
empirical evidence, one on capital market reactions to take over announcements and other on post merger performance of firms. While most empirical researchers are focused on daily stock returns surrounding the announcement dates, few studies also look at long run performance of acquiring firms after mergers.

Mandelkar (1974)\textsuperscript{66} is the first researcher to use the Capital Asset Pricing Model (CAPM) to determine residual returns. He examined the market for acquisitions and the impact of mergers on the returns to stockholders of constituent firms. While employing the two factor model, the study also examined change in risk in analyzing the impact of mergers on stock prices. This study, conducted on a sample of two hundred and forty one acquiring firms during the period 1941-1962 found, on one hand the stockholders of acquiring firms earned abnormal returns during the pre and post merger periods (as compared to other investment productive activities with commensurate risk levels), and on the other hand, stockholders of acquired firms earned significant abnormal returns (approximately 14\%) in the seven months preceding the completion of mergers. These results are consistent with the hypothesis of perfectly competitive efficient market (on the demand side) for acquisitions and with the hypothesis that information regarding mergers is efficiently incorporated in the stock prices.

Ellert (1976)\textsuperscript{67} in a study of effects of anti-trust action on the performance of merger patterns used methods similar to Mandelkar study\textsuperscript{68} but with a much larger sample for an overlapping period. The results of the study found significant positive performance before and
during the merger month for both, acquired and acquiring firms. The study, however noted that while acquiring firms had positive excess returns prior to mergers, these returns occurred long time before they could be attributable to any merger activity. Also, while the acquired firm’s experienced marked positive returns in the seven months prior to merger completion. The main result of study is that anti-merger action by government has little effect on merger gains and hence is not likely to affect the concentration of monopoly power.

Dodd and Ruback (1977)\(^69\) used date of public announcement of merger as the event date. This study of stock market reaction to tender offers, both successful and unsuccessful was conducted on a sample of one hundred and seventy two target and bidding firms, of which 72% were merged with five years. The study found that target firms earned significant abnormal returns in the month in which the offer was announced (approximately 20%), regardless of whether offer was accepted or not. Also, the study reported that stockholders of successful bidding firms earned small abnormal returns (approximately 2.83%) in the month of announcement of merger. These results are similar to those of Mandelker’s study\(^70\) since most of the gains from takeovers accrue to target shareholders.

This study also conducted an empirical assessment of the market’s reaction to unsuccessful takeover attempts. The stockholders of bidding firms which initiated unsuccessful tender offers neither gained nor lost: they earned normal returns in the offered period. Unsuccessful target, however, earned large significant positive abnormal returns of 18.96% in
the month in which offer was announced. Furthermore, the price changes were permanent since they earned normal returns for five years after the offer.

The findings that acquiring firms earned excess returns corroborated an earlier finding. Halpern (1973)\textsuperscript{71} using a variant of market model found that when he adjusted for the general market factors using an industry index and for the relative size of acquiring and acquired firms, the gains of the mergers were equally distributed among the participants. Halpern concluded that the market for mergers is efficient but not competitive (both the acquired and acquiring firms are uniquely suited to one another in some way).

Haugen and Langetieg (1975)\textsuperscript{72} compared the performance of merged firms with a control group of firms of the same industry that did not merge. The study covered fifty nine industrial mergers of companies listed on NYSE during the time period 1951-1968. The study detected little evidence of synergism in their sample with focus only on changes affected in the risk attributes of distribution of stock returns. If the market is efficient, a change in profitability of assets should be quickly capitalized in the price of combined company stock. This change was not detected in this study.

Langetieg (1978)\textsuperscript{73} re-examined the magnitude of stockholder gains from mergers. His studies employed two factor models (market and industry factors) to describe the stochastic return process in the capital market. The study also introduced a third factor, the non merging control group to measure its impact on their performance.
To re-examine the pre and post merger stock performance from the perspective of three factor performance indexes, the sample size was restricted to one hundred and forty nine single merger events during the time period 1929-1969.

The results of the study indicated significant negative post merger performance for acquiring firm’s shares cumulating to -0.0659 over the twelve months after the merger. The study also found negative abnormal returns for acquired firms during the period well before the merger. Abnormal returns during the six months preceding the merger were significantly positive. For acquiring firms, the pattern was reversed and less pronounced.

Schipper and Thompson (1980)\textsuperscript{74} evaluated the impact of merger related regulatory changes introduced during the high merger activity period of 1960’s on the shareholders of the firms that were active in the acquisition programs. The approach was a form of events’ study in which the events (announcements of regulatory reforms) were grouped according to calendar time. The influence of each individual event was evaluated based on a shift parameter introduced into the market model which identified the sub period over which the announcement of a particular reform occurred during 1966-70. If the regulatory changes reduce the net benefit from future acquisitions, the market value of equity of firms with the acquisition programs should fall. Of the four regulatory changes,\textsuperscript{75} the Williams Amendments\textsuperscript{76} and the Tax Reforms Act 1969 had a negative impact on security prices of the sample of companies involved in the active acquisition program.
The study estimated that the impact on the active acquirer’s was -6% for Williams Act announcement and -1.2% for the Tax Reforms Act. The finding of positive abnormal performance associated with the announcement of the acquisition programs and negative abnormal performance associated with the regulatory changes is consistent with a positive average capitalized value of acquisition program. The evidence is also consistent with an extreme form of size maximization hypothesis which suggests that entrenched managers seek expansion by mergers to the net detriment of current shareholders.

Asquith (1983)\textsuperscript{77} also investigated the effect of mergers on stockholders returns. This study was extended to include investigation of abnormal returns throughout the entire merger process for both successful and unsuccessful merger bids starting from 480 trading days before a merger bid until 240 days after the bid. Two merger events were considered; the announcement date and the outcome date of merger. Using a sample of three hundred and eleven target firms and one hundred and ninety six bidding firms in successful mergers and ninety one target firms and eighty nine bidding firms in unsuccessful merger bids, the stock market reaction to event uncertainty was explored i.e. the extent to which probabilistic merger announcement was incorporated into security price movement was examined.

The results of the study are consistent with the hypothesis that target firms have unique resources, which provide synergy when combined across firms. There were stockholders gains associated with a merger bid and these gains increased as the probability of merger
decreased. Most of the gains of mergers went to stockholders of target firms with the stockholders of successful bidding firms earning little, if any return. This suggests that bidder market is competitive and sources of Synergy are unique to target firms.

Asquith and Kim (1981)\(^7\) in an earlier study on bondholders’ returns in conglomerate mergers concluded a similar behavior of stockholders return. Part of the study which investigated the effect of mergers on the bondholders of merging firms opined neither gain nor loss for them from mergers. This demonstrated that the stockholders gains are not the result of wealth transfers from bondholders but apparently the result of real gains.

Another study at the same time by Malatesta (1983)\(^7\) examined the net effect of long run sequence of events leading to merger of merger prese, on shareholders wealth. The study developed three hypotheses concerning mergers, namely, value maximizing or investment hypotheses, size maximization hypotheses and improved management hypotheses. It empirically tested them to see which one rationalizes the results best. The appropriate measure of merger related gain employed was cumulative abnormal returns in dollar term over a five year time period 1969 to 1974.

The results of the study are consistent with the hypothesis that merger per se have a positive impact on acquisition firms shareholders wealth. Cumulative abnormal dollar returns to acquired firms over a five month interval ending with the approval announcement averaged 19.67
million dollars in their sample which was statistically significant estimate. However, acquired firms shareholders apparently suffered wealth losses during the period well before a merger. Over the 61 months prior to and including the approval announcement, estimated cumulative abnormal dollar returns averaged -9.42 millions dollars. Hence, the estimated net impact of events culminating in mergers on acquired firms’ shareholders wealth is negative. The improved management hypothesis predicted these results.

Further, the results indicated that acquiring firm’s stockholders suffered wealth losses both immediately before and well before a merger. Over the five month interval ending with the approval announcement, Cumulative Abnormal Return over sixty one months ending with the announcement was -11.17 million dollars. Both of these estimates were statistically significant which led the study to conclude that merger is a negative net value project for acquiring firms.

Seth’s Study (1990) provides a conceptual framework and an empirical methodology to assess the extent of value creation in acquisitions. On a sample of one hundred and four tender offers which look place between 1962 and 1979 event study methodology was applied as a basis for estimating synergistic gains in acquisitions and for testing if these gains were equal for related acquisitions. The results of the study found positive and significant value creation for all types of acquisition, whether related or unrelated. They cautioned researchers as well as practitioners from concluding about the superiority related acquisitions as compared with unrelated strategies. Further, they opined that
performance differences between related and unrelated diversification strategies depend upon the basis of classifying firms as following one or the other strategy. This conclusion useful to consider the broader question of usefulness of classification schemes. One obstacle to classification is presented by the fact that majority of US firms are diversified to some degree; hence the task of identifying pattern of relatedness between two diversified merging corporations is of immense complexity.

Agarwal, Jaffe and Mandelkar’s Study (1992)\textsuperscript{81} re-examined the post-merger performance of acquiring firms after adjusting for the firm’s size effect and beta risk on its exhaustive sample of 937 mergers and 227 tender offers\textsuperscript{82} which took place in US during the period 1955-87.

Their results, based on two alternative methodologies, both adjusted for beta risk and market capitalization indicated that stockholders of acquiring firms experienced a statistically significant wealth loss of about 10\% over five years after the merger completion date. The result was robust to a variety of specifications and did not seem to be caused by changes in beta. The study, therefore conclude that the efficient market anamoly of negative post-merger performance highlighted by Jenson and Ruback (1983)\textsuperscript{83} is not resolved.

Further, the causes for large negative returns after a merger were not known. One possibility would be that market was slow fo adjust to the merger event. Then, the long run performance should reflect that part of Net Present Value of merger to the acquirer which was not captured
by the announcement period returns. However, the results of the study were not consistent with this hypothesis also. The resolution of this anamoly was left by the study as a challenge for future research.

To conclude, the most frequent finding from the plethora of research in this area in US is that shareholders in the acquired firms tend to make gains; the evidence for the shareholder’s of acquiring firms is, however, mixed. In a review of empirical evidence on shareholders wealth effects of US takeovers, Jenson and Ruback (1983) conclude that “corporate takeovers generate positive gains; target firms shareholders benefit and that bidding firms shareholders do not lose”. There seems to be no such consensus about UK experience. Evidence on acquisition activity in UK is less plentiful. Some of the main findings for the US are consistent with detailed study for UK over the period 1955-85 carried by Franks and Harries (1989). They find that shareholders of target firms’ gains from mergers, gains are higher if bid is contested or bidder already has stake in target firm before acquisition, bidders out performed in pre-bid period and lost subsequently.

2. Managerial Performance Measures

In the context of studies based on stock prices, it is generally argued that these cannot determine either the extent of real economic gains or the source of such merger related gains. Gains from mergers could arise from variety of sources, such as operating synergies, tax savings and monopoly rents. To measure these real effects of mergers and to determine whether expected gains at the time of merger
announcement are actually realized or not operating performance of firms is analyses. Studies based on operating performance generally focus on various accounting measures of profitability. In analyzing the effect of merger profit rate of merging firms before the merger. Any changes in performance are then contrasted either with performance in pre-merger period or with that of firms not engaged in merger activity or are compared with industry benchmark. Performance measure studies based on accounting data summarized below.

Studies Conducted in UK

Singh’s Study (1971)\(^\text{85}\) examined the performance of firms before and after the merger and efficiency of stock market as a means of enabling the resources to move into more profitable uses. The study investigated the relationship between market valuation, some financial variables (namely, pretax return on net assets, dividend return on equity assets, size, liquidity, gearing, retention, growth of net assets etc.) and takeovers. The study employed data on a sample of 2126 UK public quoted companies for the period 1948-60 to examine the characteristics of taken over firms. In addition to the differences in the composition of companies examined, the time period and the emphasis placed on industry analysis, the study relied primarily on discriminate analysis for testing the various hypotheses about takeovers.

The results of the study show that on an average, about 60-65% of firms which were taken over had profitability, growth and valuation ratio lower than their industry average indicating that firms which performed
better took over worst performing firms. The success of merger is questionable as 57% of merged firms in the sample had post acquisition profit record which was worse than record of separate firms before merger. The study, therefore, concluded that mergers are non-profitable.

Further, the study also concluded that while firms with higher profitability over firms with lower, the ability to resist takeover was related to size. The large and medium sized firms had a much lower probability of being acquired than small ones, hence it was possible for a firm to defeat takeover bids by acquiring other firms itself.

A complimentary study by Utton (1974)\textsuperscript{86} compared the performance of merger intensive group during and after a heavy bout of merger activity for each company with that of a group which relied instead on internal growth. The merging company’s average profitability was appreciable below that of non merging companies too far below to be explained by any of measurement problems presented by the study. Thus, this study, deliberately framed to capture the consequences of series of takeovers, yielded results in full harmony with those of other complimentary studies for single merger case also.

The other two studies of the same type by Kuehn (1975)\textsuperscript{87} and Aaronovitch and Sawyerr (1975)\textsuperscript{88} showed that mergers and takeovers seldom lived upto the expectation of profitability at the time when companies came together. In addition, Kuehn’s study\textsuperscript{89} also examined the relationship between financial variables (like size, growth rate, profit rate, retention ratio, and liquidity etc.) and stock market performance of
firms taken over and not taken over.\textsuperscript{90} The study was conducted on a sample of 3566 companies which had merged or were acquired during the thirteen year period 1957-69. The study concluded an inverse relationship between a firm's probability of being takeover with its profit rate, growth rate and liquidity. Higher the ratios, less was the chance of the firms of being taken over. While retention policy of firms seemed to have no effect on firm’s probability of being taken over, valuation ratio provided' more consistent indicator of the same.

A study. of the gains from merger by Meeks (1977)\textsuperscript{91} assessed the performance of mergers, mainly in terms of profitability, though other characteristics of acquiring firms were also considered. Two complimentary null hypotheses were also tested.

1. Other things being equal, profitability of merger was on an average no different from pre-merger level of participants.

2. Other things being equal, half of mergers experienced an improvement in profitability after merger and half a decline.

The study chose a sample of two hundred and thirty three acquisitions that took place during 1964-72. The basic methodology was to compare reported post- merger profits to the pre-bid profits of each of merging firms. To allow for changes in profits brought about by factors independent of merger, they were calculated relative to the performance of company’s own industry. The results of the study accepted the null hypothesis of decline in post-merger profitability. In three to five years, this decline was significant at 1\% level and in each post merger year,
majority of companies experienced decline. This decline although of the same order of magnitude, was however, not found to be significant in six-seven years following the merger. This may be due to the small size of sample. For the year of merger itself, the study found a significant improvement in profitability, a result that was dismissed due to distortions. Further, the study made adjustment for the accounting bias due to revaluation of merged firms and for external influences by measuring a firm’s profit rate relative to its industry. The study concluded that since the market power of merging firms is unlikely to have declined, the decline in profitability could be taken to indicate decline in efficiency.

This study has been followed by many other accounting based studies in UK (Cosh 1980, Kumar 1984) with the same methodology adopted for comparing pre and post merger profitability taking industry performance as benchmark. Cosh (1980)\(^92\) concluded significant improvement of profitability for post merger companies conducted on a sample of two hundred and twenty five companies covering time period 1967-70. Kumar’s (1984)\(^93\) results on a sample of two hundred and forty one companies over eight year period 1967-74 was consistent with those of Meeks (1977).\(^94\) They concluded significant decline in profitability after mergers.

Another study by Levin and Aaronovitch (1981)\(^95\) examined the financial characteristics of the firm with a view to test various hypotheses drawn from the theory of the firm. The study empirically analyzed a sample of one hundred and fifty four firms in manufacturing
and distribution involved in large mergers in UK. It conducted a univariate comparison of group averages of financial characteristics of acquiring firms in terms of grouped variables corresponding to stock market efficiency hypothesis. The results found no evidence of any significant difference between acquiring and acquired firms for the profit related variables (rate of return, earning per share) and their growth (growth of rate of return, growth in earning per share). Further, the results showed that both size (measured in terms of capital employed) and valuation ratio or price earning ratio discriminated well individually between acquiring and acquired firms\textsuperscript{96} but the results as a whole suggests that stock market does not reward only profitability and efficiency. Also, apart from size and capital market assessment (in terms of valuation ratio, price earning ratio), acquiring firms did not have a distinct set of financial characteristics from those of acquired firms.

These results of the study supported the contention that financial characteristics of acquiring and acquired firms are not primarily important in explaining merger activity involving large firms. There appeared to be little evidence that acquiring firms choose less efficiently.

The multivariate results which looked at growth and profitability together found no support for acquiring firms having higher growth. There was some evidence of immediate investors gain from the higher PIE ratio for the acquired firms. The evidence further pointed to mergers as strategic decisions not involving immediate economic or financial gains. The study indicated two advantages of size. Firstly, large firms with equal efficiency as indicated by growth and profitability had higher
valuation ratio than smaller firms. Secondly, advantage of size was the security from takeover that it brought. Being large could insulate a firm from takeover threat arising from small valuation ratio.

To sum tip, the verdict of these studies is not wholly averse to mergers. However, it does not also show that mergers are effective in improving post-merger performance.

Studies conducted in U.S.

Empirical research on accounting measures provides results similar to those in UK. These are summarized as under.

Kitching’s Study (1967) examined the financial performance of companies and also the objectives of managers involved, in terms of what they hoped to achieve by merger and what extent these objective were realized. The study used two methods to determine whether a merger could be classified as success or failure.

(a) Survey of management literature and field interviews with executives of twenty two companies (covering various industries like textiles, electronics, communications, marketing recreation products, food, aviation, tobacco, finance etc.) designed to measure manager’s qualitative assessment of success or failure of acquisition program measured against original strategy.

(b) Financial results obtained from the companies in order to compare the actual performance with forecasts made before the merger.

This procedure was designed to crosscheck the manager’s subjective judgment on the acquisition’s success or failure (though
acquisition objectives could sometimes be successfully reached without achieving financial targets). The results showed a high incidence of failure with certain types of mergers, particularly conglomerate mergers. Simple vertical and horizontal mergers were usually successful. Concentric mergers came in between these two extremes of success and failures.

The study summarized the primary reasons for failures of mergers to be as below:

1. The existence of managers of change, that is to say that the managers of one of the companies involved in the mergers must be able to deal with the changing circumstances.

2. The acquisition should be planned as growth diversification strategy rather than a mere reaction to an opportunity for buying.

3. There must be careful analyses of future needs. The study showed that the successful companies made a careful analysis of their subsidiary’s future requirement for parent company’s funds.

Weston’s study (1971)\textsuperscript{99} carried out various tests on the performance of sixty conglomerate firms over the period 1958 to 1967. The sample also consisted of two control groups one consisting of industrial companies only and the other combining both industrial and non industrial companies. The study measured the performance of conglomerates in terms of growth per share using the following variables of growth rates: (1) Total assets (2) Sales (3) Net income (4) Earning per
share (5) Market price based on yearly high, yearly low and arithmetic of annual high and low prices.

The study found that the earning performance of conglomerates measured by returns on total assets and return on net worth was not significantly different from that of all manufacturing companies. However, given the unfavorable earning opportunities in industries from which conglomerates emerged the performance was favorable. It, therefore, concluded that in financial terms, on an average, conglomerates performed no better than the average industrial company. What, however, was surprising was the range of performance of these conglomerates. The great diversity in the conglomerates performance had important implications. The results of some mergers were a success, other a failure. It was not important to consider mergers and acquisitions as either wholly good or bad thing but to be able to different the mergers that have high probability of success from that could well fail. The results of financial conglomerates were less predictable but the study opined that their criticisms were not substantiated, so there were no grounds for raising barriers against them.

Ravenscraft and Scherer’s Study (1987) offered an alternative method to the stock price analysis for estimating economic effects of merger events. Their study was broad range covering an approximate sample of six thousand acquisitions in different lines of business with three dimensions of merger performance, namely, survival, profitability and R&D intensity. The study showed that acquiring firms in their large
sample failed to significantly improve operating performance of their acquisitions but paid substantial premiums for privilege of trying.

In case of voluntary mergers, once acquisition effects were controlled, tender offers and takeovers were followed by neither degradation nor improvement of operating performance, where as normal mergers in such case showed definite post-merger performance deterioration. For the mergers consummated under pooling of interest accounting, pre merger operating income to asset ratio averaged more than ten percentage points above peer industry averages. Post merger values of same performance indicator for 100 percent pooling lines was 1.3 percent points above, 1.6% below and 3.5% points above peer industry norms controlling also for shares for 1974, 1976, 1977, respectively. For three years together, pooling merger lines surpasses their peer industry to 0.4% points. This represented a sharp drop from pre-merger performance.

This study of matched pre-and post-merger sample confirmed the conclusion that profitability dropped sharply after merger. In addition, this sample was compared to non acquired firms with similar size and above average profitability for same time period. The non acquired firms maintained 40% of supernormal profits while acquired firms kept only 10%. The difference between acquired and non acquired profits decline was substantially significant.\(^{102}\)

On the effect the merger had on R&D, the study concluded that their analysis of 2955 lines of business for the year 1977 provided no
support for the hypotheses that “mergers permit intensification of R&D effort by blending innovating enterprises into larger corporations”. The lines of business originating from mergers had significantly lower company financed R&D to sales ratio that line product lines with similar market shares in same industry but without merger history.

Looking at the final aspects of long run performance improvement, the study opined that “analysis” of short run stock market reactions to merger announcements suggested that they may result in such improvement. The exact cause of short run stock price gains remained unclear. However, an analysis of stock prices two or three years after a merger cast doubt as to whether the combined returns to acquired and acquiring companies shareholders remained positive.

Healy, Palepu and Ruback’s study (1992) is also motivated by inability of stock price performance studies to determine whether takeovers created real economic gains or not to identify sources of such gains. For this purpose, it analyzed post-merger accounting data to test for changes in operating performance that resulted from mergers. The study used operating cash flows in place of accrual profits with industry performance as a benchmark to evaluated post merger performance. It analyzed 50 large acquisitions during the period January 1979 to June 1984 and concluded that merged firms showed significant improvement in asset productivity relative to their industries, leading to higher operating cash flow returns.

Further, the study also investigated into the possible correlation between merger related stock market performance and post-merger cash
flows performance. It found a strong positive correlation between post-merger increase in operating cash flows and abnormal stock returns at the time of merger announcements. This indicated expectations of economic implications explained a significant portion of equity revaluation of merged firms.

Accounting Studies Conducted Elsewhere

Hoshino’s Study (1982)\(^{106}\) analyzed the performance of corporate in Japan using accounting ratios. It conducted two tests on the performance of mergers. The first test compared the financial ratios before and after merger and the second test compared the performance of merging firms with non-merging firms. The analysis led to the following conclusions:

1. There was a difference in the financial performance both before and after merger in fifteen corporate mergers examined in the study. After the merger, net worth in total liabilities and assets, debt equity ratio the turnover ratio and net profit to total liabilities and assets, ratio were worse than before the merger. An improvement was found only in case of current ratio.

2. There was no clear distinction between merging and non-merging firms in the same industry.

3. The comparison between ninety merging firms and forty eight non-merging firms showed that the two group’s financial performance could be distinguished with clear adverse effect mergers on net worth to total liabilities and assets ratio.
Sharma and Ho’s Study (2002) \textsuperscript{107} examined the operating performance of a sample of thirty six firms involved in acquisitions in Australia occurring between 1986 -1991, both years inclusive. Using matched firms to control for industry and economy wide factors, the following hypotheses have been tested empirically.

1. Operating performance in the post-acquisition period is greater than operating performance in the pre-acquisition period.

2. There are no significant differences in post-acquisition operating performance between conglomerate and non-conglomerate acquisitions

3. There are no significant differences in post-acquisition operating performance for firms using different methods of acquisition financing.

The results of the study based on eight different performance indicators (being four accrual and four cash flow performance measures) revealed decline or no gain in operating performance following an acquisition. The various performance indicators used in this study explained that inconsistencies in prior research could be attributed to differences in performance indicators used to capture synergistic benefits. The study also found that the type of acquisition (conglomerate and non-conglomerate) and the form of acquisition financing (cash, share or a combination) do not significantly influence post-acquisition performance. Similarly, size of the acquisition and the payment of premium (goodwill) do not influence post-acquisition performance.
While the results of study are not consistent with synergy theory underlying corporate acquisitions, they are interpreted to be consistent with the agency (acquisitions resulted in lower post acquisition performance but increased firm size), the hubris and the financial motivation hypothesis (acquirers had higher levels of leverage than acquirees, though not statistically significant).

To conclude, the evidence of merger’s effect on profitability reveals no distinct pattern. While few studies report profit increases following mergers (Cosh, Hughes and Singh 1980, Muller, 1980), the preponderance of evidence in UK and US point towards no increase and probably some decline in the profitability of merged firms after merger.\textsuperscript{108}

3. Performance Measures Based on Share Price and Accounting Data

Newbound’s Study (1970)\textsuperscript{109} examined a sample of two hundred and twenty three merger events in UK over a period of two years 1967-68 in respect of their share price behavior. The study measured biddings and target company’s share prices four weeks before the bid against their year’s high and concluded relative weakness in share price performance of target firms as compared to that of bidding firms. The analysis was carried out for all the three types of takeovers classified in the study according to the opposition to takeovers namely,

1. Uncontested takeover (where directors of the target firm did not any opposition in public).
2. Contested by directors (directors of the target firm were seen opposing/contesting the bid).

3. Contested by third parties (where some vigorous but undisclosed contests were seen). It was found that in each type of takeover, the mean of target firm’s share prices lower than the mean of bidding firm’s share prices. The study concluded that target firms, in any type of takeover were on average, relatively weaker in terms of share prices than the associated target firms. Further this study also analyzed the operation of the enlarged firms for first five years after takeover in terms of financial indicators of growth namely, profits, sales, dividend yields, rate of return on capital employed, earnings per share and price earning ratio. The main aim was to determine what rates of growth were required to justify price paid for target firms. In majority of cases, required rate of growth on five year view was more than double than what had been achieved or in some cases, it even seemed unattainable. Also, investigations showed that firms should takeover only those firms whose share stand on a price earning ratio lower than its own.

Reid’s Study (1968) investigated a sample of four hundred and seventy eight US firms picked from fortune’s list of five hundred largest industrial corporations for the year 1951. The study utilized three measures characterized as reflecting the interests of mergers, namely,

1. Growth in sales
2. Growth in assets
3. Growth in employment
And three measures reflecting the interest of stockholders namely,

1. Growth in market value of shares
2. Growth in ratio of net income to total assets
3. Growth in ratio of net income to sales

The study found that growth rates in three measures reflecting manager’s interest were favorable for conglomerates as compared with other companies, while conglomerates performed less effectively in measures reflecting stockholders interest. Thus, it concluded that more actively merging firms and firms that diversified to a greater extent in their merger activity, scored high on criteria relating to manager’s interest and low on criteria to stockholders interest.

However, the conclusions of the study were at variance with its own data. In the detailed industry analysis, the results of the performance measures were either not significant or significant in opposite direction for ten or more of the fourteen industries for each of his six measures. This suggested that it was greater weighing of small number of industries that produced results for his total sample.

To sum up, “not all mergers are unsuccessful ... there are many examples of successfully merged companies, without proving that they would not have been even more successful without any merger. But on average, there is no evidence that mergers have conferred any general benefit on the company. The large firms tends to experience a falling rate of return on capital employed, and the merged firm, after the initial stock exchange excitement, larger acquirers a lower investment rating." This
fact that merger do not seem to benefit acquirers as shown by many studies could be because acquiring firms seek mergers for many reasons. Many firms mention motivations of mergers as a means to achieve possible economies of scale, synergies, and greater efficiencies in managing assets. Thus, there is contradictory evidence of mergers being a means of empire building by managers. If mergers were undertaken for true underlying motivations they could benefit acquirers but in average statistics, these are cancelled out by mergers undertaken for less benign reasons.

Financial characteristics of Merger Participants

The literatures on mergers and acquisitions contains several research studies that estimate the factors leading to firms being taken over by examining the difference between the firms acquired and firms not acquired and also acquirers and acquirees in terms of their financial characteristics. The purpose of such an investigation is to reach to some conclusions on why and how acquirers choose their victims. A summary of findings of some of the studies under taken in UK in terms of financial characteristics of acquirees and acquirers is given in Table 3.4 and Table 3.5 respectively which have been adapted from study of Firth (1976)\textsuperscript{112} by Cooke (1980).\textsuperscript{113} While Table 3.4 summarizes the financial characteristics of acquirees as concluded by various researchers in UK, Table 3.5 summarizes the same results of acquirers. In both the tables problems like differing definitions of variables analysed and different dates on which analyses have been done are faced.
Table 3.4
The Financial Characteristics of Acquirees: Summary of Research Findings in UK

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<td>3. Valuation</td>
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<td>7. Growth in Net Assets</td>
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Profitability of acquirees has been calculated in all studies except New bound (1970). The evidence suggests that victims tend to be those whose profitability may be described as low. The only exception to this is the study by Meeks (1977) who found the profitability of victim to be average.

As far as dividend policy is concerned, only Tzoannos and Sammuals (1972) and Firth (1976) have looked at this variable in a
merger context separately since information content of a dividend is already included in measures of profitability as well as poor dividend performance.

The valuation ratio attempts to measure the degree of over and under utilization of net assets of the victim and is calculated by dividing share price by net assets per share. New bound (1970)\(^{122}\) found that “this ratio did not offer any explanation of incidence of mergers” whereas Buckley (1972)\(^ {123}\) found that “the variable provided good signals for identifying potential victims.”

With respect to price earning ratios, all the studies calculating this variable found that target companies are lower than average. Since the capitalization rate depends upon growth prospects and risk attributes, victims generally have low PIE ratios and low valuation ratios. Firth (1976)\(^ {124}\) concluded that acquisitions are not in general made with the aim of improving initial earning per share.

Gearing has proved to be unstable variable with these studies, suggesting that low, average or even high levels of gearing were prevent.

Liquidity ratio was calculated in most of the studies but there was no significant difference between victim and control groups. Only Kuehn (1975)\(^ {125}\) found that victims tended to have lower levels of liquidity. Belkaoui (1978)\(^ {126}\) in his study of Canadian takeovers found that working capital to total assets ratio was the single best variable indicating likelihood of company becoming subject of takeover.

Three of the studies looked at size of victims and all came to the conclusion that they were smaller than non taken over firms.
With respect to financial characteristics of acquiring companies, the evidence is inconclusive. Table 3.5 summarizes the research findings in UK. The acquirer is usually one with average or above average profitability, with high dividend payouts and high growth rates. The other ratio did not portray any consistent pattern. In addition, no significant relationship has been established between financial ratio of acquirer and acquirees. A later study by Rege (1984)\textsuperscript{127} on Canadian
data, investigating the possibility of locating takeover targets using five variables concluded as follows:

“The results indicated that the pre-takeover measurement of five variables were not useful in discriminating between the three categories of firms. Perhaps this was because the management of taking over firms was more interested in the expected levels of these variables and these expectations affected the major entrepreneurial perception of value of the firm. Ratio based on published accounting information may not be adequate proxies for the expectations of entrepreneur in takeover situations.”

Apart from UK based studies, some studies in US also explicitly tried to predict the firms that could be acquired in terms of their financial characteristics. Important ones include those of Monroe and Simkowitz (1971), and Stevans (1977) who used discriminant analysis to study the financial attributes of acquired firms. Monroe and Simkowitz’s Study (1971) examined takeover targets for the year 1968 and concluded that acquired firms (relative to non acquired firms) were smaller, had low price earning ratios, lower dividend payouts and lower growth in equities. However Steven’s Study (1973) found that neither dividend payout nor price earning ratios seemed to be important variables. The study, however, claimed that a discriminant model based on financial characteristics of acquired firms provided useful classification.

Specifically investigating a sample of forty acquired firms (which were acquired in 1966) and forty non acquired firms (matched by size to
the acquired), this study developed a discriminant model that demonstrated 70% classification accuracy (between acquired and none acquired). The same model was also able to classify with 67.5% accuracy between a set of acquired and non acquired firms in subsequent years. The major difference between acquired and non acquired firms was that acquired firms used significantly less debts than non acquired firms. Some evidence of more liquidity for acquired firms was also present. In following table results are summarized.

Table 3.6
Steven’s Ratios for 40 Acquired firms and 40 Non Acquired Firms

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Ratio</th>
<th>Significant in Discriminant Model</th>
<th>Means</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acquired</td>
</tr>
<tr>
<td>Profitability</td>
<td>EBIT/Sales</td>
<td>yes</td>
<td>0.0883</td>
</tr>
<tr>
<td>Liquidity</td>
<td>Net working capital/Total assets</td>
<td>Yes</td>
<td>0.4066</td>
</tr>
<tr>
<td>Activity</td>
<td>Sales/Total Assets</td>
<td>Yes</td>
<td>1.41</td>
</tr>
<tr>
<td>Indebtness</td>
<td>Total Liabilities/Total Assets</td>
<td>Yes</td>
<td>13.77</td>
</tr>
<tr>
<td>Dividend Policy</td>
<td>Cash dividend/Net income</td>
<td>No</td>
<td>0.37</td>
</tr>
<tr>
<td>Stoke value</td>
<td>Price/EPS</td>
<td>No</td>
<td>15.0</td>
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These studies were followed by another similar study by Harris, Stewart and Carleton (1980)\textsuperscript{131} that used profit analysis\textsuperscript{132} for the same objective. They developed samples of different sizes of acquired firms in two separate time periods 1974-75 and 1976-77 to check for changes through time. The sample consisted of sixty one firms acquired in 1976
and 1977, a sample of forty-five firms acquired in 1974 and 1975 and a sample of approximately twelve hundred non-acquired firms. The financial characteristics of only acquired firms were analysed to measure the probability of acquisitions as given in Table 3.7.

The following conclusions have been drawn:

1. Statistical models (profit) to estimate probability of acquisition did achieve statistical significance. These models indicated that smaller firms and firms with lower price earning ratio were more likely to be acquired. Other factors (for example, liquidity and indebtedness) had effects that changed over time.

2. Despite this statistical significance (99% level) only a very small portion of factors contributing to acquisition was captured by the statistical models based upon only acquired firms characteristics.

3. Empirical studies to predict merger targets must be careful in selecting sample of firms to be investigated. It was important to keep the ratio of acquired to non-acquired firms in sample approximately equal to the ratio found in the firm population.
Table 3.7
Merger Motives, Variables and Hypotheses

<table>
<thead>
<tr>
<th>Motives</th>
<th>Variables</th>
<th>Hypotheses</th>
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<tr>
<td>1. Finance</td>
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<tr>
<td>(i) Economies in obtaining funds (Financial leverage)</td>
<td>a) Long term Debt/ Total assets</td>
<td>Acquired firms use less financial leverage than non acquired firms.</td>
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<td></td>
<td>b) Long term Debt/ Total assets</td>
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<td></td>
<td>c) Interest on coverage ratio</td>
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<tr>
<td>(ii) Corporate liquidity</td>
<td>Net working capital/ Total assets</td>
<td>Acquired firms are more liquid than non acquired firms.</td>
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<tr>
<td>(iii) Tax saving</td>
<td>Tax losses carry forward</td>
<td>Acquired firms have different tax loss carry forward position than non acquired firms.</td>
</tr>
<tr>
<td>(iv) Profitability</td>
<td>a) Return on assets</td>
<td>Acquired firms differ from non acquired firms in terms of profitability.</td>
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<td></td>
<td>b) Return on equity</td>
<td></td>
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<tr>
<td>(v) Diversification</td>
<td>a) Variability of returns to stockholder</td>
<td>Firms diversify via merger.</td>
</tr>
<tr>
<td></td>
<td>b) Variability of corporate returns</td>
<td></td>
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<tr>
<td>(vi) Earnings per share manipulation</td>
<td>Price per share/ Earnings per share</td>
<td>Acquired firms have lower P/E ratios than non acquired firms.</td>
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<tr>
<td>2. Miscellaneous</td>
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<tr>
<td>(i) Managerial</td>
<td>Growth in sales</td>
<td>Firms use mergers as means to further growth.</td>
</tr>
<tr>
<td>(ii) Assorted motives</td>
<td>Size</td>
<td>Acquired firms are smaller than non acquired firms.</td>
</tr>
<tr>
<td>(iii) Valuation</td>
<td>Book value per share/ Market value per share</td>
<td>Acquired firms have different valuation ratios than non acquired firms.</td>
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</table>
Palepu’s Study (1986) investigated a sample of one hundred and sixty three firms acquired in the period 1971-79 and a random sample of two hundred and fifty six firms that were not the mining and manufacturing industry. Both samples were listed on either New York or American Stock Exchange. The study found that firms with a mismatch between growth and resource were more likely to be taken over. These were firms with high growth (measured by average sales growth), low liquidity (measured by ratio of liquid assets to total assets) and high leverage and firms with low growth, high liquidity and low leverage. The results also indicated that poor performance (measured by net of market returns in the four years before the acquisition) was significantly related to probability of takeover. Accounting measures of past performance such as return on equity were unrelated to probability of take over.

Time Series Analysis of Aggregate Merger Activity

The study of merger activity is of long standing to economists as well as financial community. Reference to merger activity in American industry generally acknowledges three major mergers waves. The first one occurred during the turn of the century, the second one during 1920’s and the third one during 1960s. Currently, the United States seems to be in the midst of fourth merger wave. Stigler (1950) described the second merger wave as being “mergers for oligopoly” in contrast with the earlier “mergers for monopoly” movement, increased market power through consolidation and corporate concentration and operating economies of scale were identified as motives for mergers.
during these two waves. Horizontal mergers (i.e. mergers between direct competitors) were relatively more important during the first merger wave which began shortly after end of World War second came to be known as conglomerate merger wave because of its emphasis on mergers between unrelated firms or firms seeking product extension objectives.

While many researchers have been engaged in the study of mergers in US, empirical examination of changes in aggregate merger activity has been limited both as to type and time period covered.

Weston Study (1953)\textsuperscript{135} examined annual merger data for the period between the two world wars. Employing multiple regression analysis, the study found that mergers were significantly and positively related to security prices and wholesale commodity prices but were not significantly related to industrial production levels.

Nelson’s Study (1959)\textsuperscript{136} looked at quarterly merger data stretching from 1895 through 1956 with primary focus on the years 1895-1920. The study explored number of hypotheses concerning the origin and motives underlying the mergers of the period. It rejected the propositions that mergers were a consequence of slow down in growth of US economy or decreases in transportation costs.

The study found that achievement of market power and the development of securities market played a major role in encouraging the mergers. The results (both in terms of number and market capitalization) gave a significant positive correlation between mergers and levels of industrial production. The same results were obtained on an extended analysis to cover the complete period from 1895 to 1954. In a follow up
study which extended aggregate merger data through 1962, Nelson conclude that merger activity exhibited a positive and highly consistent response to change in business activity (measured as business cycle).

Similar to the efforts made by this study, Westons Study (1961)\textsuperscript{137} also examined annual changes in merger activity during the interwar period (between World War first and second). Using a multiple regression model, the study found merger activity to be significantly related to stock prices but not significantly related to industrial production activity.

Steiner’s Study (1975)\textsuperscript{138} used multiple regression analysis to explain annual merger actively (in terms of number and value) from 1949 through early 1970s. For the years 1949-71, the study found that both, GNP and change in level of security prices had significant positive influences but prime rate of interest had positive but insignificant effect. When year 1972 was added to the analysis, the results were reversed i.e. change insecurity price variable became insignificant and prime rate of interest showed significant positive effect.

Beckenstein’s Study (1979)\textsuperscript{139} examined annual data on merger numbers and values for the years 1949-75. Using multiple regression analysis on number of variables, the study found that only nominal level of security price and nominal interest rate had consistently significant effects but the interest rate effects were consistently positive.

Chung and Weston’s Study (1982)\textsuperscript{140} employed multiple regression analysis to explore determinants of annual number of large conglomerate
mergers. The study found that these mergers were positively and significantly related to the difference between yields on lower and higher grade corporate bonds, ratio of short and long term corporate yields and the rate of growth of GNP. However, mergers were negatively related to rate of return on corporate bonds. When Tonin’s \( q^{141} \) was used instead of last two variables, the results were significant and positive.

Melicher, Ledolter and Antonio’s Study (1983)\(^{142} \) empirically examined quarterly merger data between 1947 and 1977. Their results indicated a weak relationship between merger activity and economic conditions with changes in industrial production and business failures lagging behind changes in merger activity. However, the results of correlation analysis and multiple time series model indicated that changes in stock prices and bond yield could be used to forecast future changes in recorded merger activity. To the extent that merger negotiations began about two quarters before consummation, increased merger negotiation activity seemed to reflect expectation of more receptive and possibly less costly capital market conditions in the form of higher stock prices and lower interest.

Shugrat and Tollison’s Study (1984)\(^{143} \) analyzed annual merger data for the years 1895-1920 and 1947-1979. The study did not explicitly test wave hypotheses but the results conclude that merger series could be described as generated by a “white notice process with a possible drift and rejected the characteristic of merger data as occurring in waves.
Guerard’s Study (1985)\textsuperscript{144} examined quarterly merger data for the years 1895-1950 and using the procedure similar to Milicher, Ledolter and Antonio’s (1983)\textsuperscript{145} conclude that mergers were positively related to stock prices but unrelated to level of industrial production.

Becketti’s Study (1986)\textsuperscript{146} used quarterly data on the number and value of mergers from 1960 through 1985. Using ordinary least square regression, and emphasizing on legged values of explanatory variables, the study found that mergers and acquisitions were in general influenced, positively by security prices negatively by real interest rates, positively by general level of debt in the economy and negatively by real GNP. However, the statistical influences of these results were not strong, except for the influence on GNP.

Globe and White’s Study (1988)\textsuperscript{147} empirically examined the determinants of merger activity over the past thirty five years. The study developed hypotheses concerning the economic factor that explained the pattern of mergers and acquisitions subjected these hypotheses to econometric tests on post war merger data. The results were consistent with the earlier empirical finding that security prices had positive effect on mergers. The study offered a more specific test of wave hypotheses for time series pattern of mergers was consistent with a wave characterization.

To sum up, in a period of last thirty years, the literature devoted to time series analysis of mergers and acquisitions has not been very extensive. A few variables have consistently appeared as potential explanatory influences of determinants of merger activity, namely, measure of economic activity (like GNP or industrial production),
interest rates (on bond yield) and security prices. Measures of economic activity and security prices have found to be positively related to merger activity in most of the studies where as interest rates has shown conflicting relationship with merger activity.

STUDIES CONDUCTED IN INDIA

Kaveri’s Study (1986)

The first pioneering attempt in India to measure the success of company mergers was made by Kaveri (1986)\textsuperscript{148} in context or revival of corporate sickness. This study conducted as in-depth analysis of nine specific cases of mergers that took place during the years 1975-84 (in which seven mergers took place within the group and two outside the group). It attempted to measure the effectiveness of mergers by comparing actual performance of mergers vis-a-vis various expectations laid down in respect of mergers. The expectations along with their conclusions (*) are as follows:

1. Revival of sickness is possible through mergers (which is measured through sales).
   - During the post-merger period, sick companies were able to raise sales but whether rise was significant or not was debatable.

2. Mergers are advantageous to healthy companies also.
   - Healthy companies continued to be healthy after merger but degree of improvement in health varied from case to case.

3. Mergers provide sick companies to expand /diversify /modernize business activities.
• Revival measures of improvement in technology, diversification, expansion, changing market strategy etc. were found satisfactory though varied in most of the cases.

4. Performance of sick companies during post-merger period must be better than projected performance if there had not been a merger.

• In five out of nine cases, actual performance was no way nearer to projected performance. It could be possible that revival measures initiated merger might not have been completed by then. Some more time’ might be required to gain full benefits of mergers.

5. With mergers, sick companies contribute to aggregate strength of healthy companies.

• Sick companies did contribute to the total strength (measured in terms of total sales of healthy companies, though the contribution varied from case to case depending upon the size of merger. Bigger the size of merger, greater would be the contribution of sick company to total sales of healthy company after merger).

6. Merger produces positive effect on the share values of merged companies.

• The fluctuating share prices in most cases followed an upward trend after merger i.e. merger proposal was welcomed by shareholders of healthy companies. However, it would be a worthwhile exercise to understand the behavior of share prices during the entire process of merger which generally takes two-three years to complete.

7. During the post merger period, bank borrowing should decline when the merged company becomes financially stronger.
Bank borrowings declined during the post-merger period due to better performance of merging and merged companies in eight out of nine cases. Hence, bankers’ interest was safeguarded in these cases.

Singh and Kumar’s Study (1994)

Singh and Kumar (1994)\textsuperscript{149} analyzed the role played by BIFR in the revival of sick industrial units through the medium of mergers. With the help of three case studies, they concluded that rehabilitation of sick company by merging with the health company is the most effective way of their rehabilitation. All the three cases (namely Kothari General Food Corporation Ltd. With Brooke Bond India Ltd., Challapalli Sugars Ltd. With KCP Ltd. And Sewa Paper Ltd. With Ballarpur Industries Ltd.) could be termed as successful mergers and BIFR seemed to have fulfilled its assured objective of revival of sick companies. Another conclusion drawn was that tax implications were singularly the most inviting feature for healthy company to merge with sick company.

Yadav, Jain and Jain’s Study (1994)

Yadav, Jain and Jain (1994)\textsuperscript{150} carried out an assessment of profitability of mergers by looking at the mergers synergy i.e. comparing sum of pre-merger values of various attributes (like cost ratios, earnings and profit ratio, return on investment asset ratios etc.) of merged companies with post-merger value of combined companies.

Their sample consisted of four Indian companies, two of which had merged with Indian companies while the other two merged with multinationals. The performance of these companies was analyzed over
a period of three years before merger and three years after the merger. The hypothesis tested was to see if mergers with multinationals were more successful than with Indian companies. The in depth investigation of the following issues was carried out the help of various statistical techniques like ratio analysis, trend analysis act.

1. Are profits adequate?
2. What is the rate of return on total assets?
3. What is the rate of return to equity holders?
4. What is earning per share?
5. What amount is paid as dividends?

The cases analyzed in the study indicated that growth had been achieved by all the companies involved in the merger whether Indian or multinational but it was more in case of latter. Looking at earning per share I was found that post-merger EPS in MNCs was more than their Indian counterparts. In fact, in one Indian case it had decreased. As regards dividends, again percentage increase was more in case of MNCs, while Indian companies had maintained a constant dividend. On the issue of expenses, there was no clear trend. One case of both categories showed rising trend after merger and the other in both showed downward trend.

Mandal’s Study (1995)

Mandal (1995) critically reviewed merger gains that emerged out of various economic categories of mergers (for example horizontal, vertical, conglomerate and co generic). The study also quantified tax
benefits arising out of corpora rate mergers to the acquiring company and the extent of such benefits towards the revival of a sick company. The study used nineteen merger cases to investigate into the merger motives, means of payment, exchange ratio, success and failure of mergers and quantum of tax benefits. The various hypotheses tested along with their conclusions are as follows:

1. Equity based merger is an essential product of management strategy to grow without embarking on cash reserve.

Empirical verification of this hypothesis was conducted on the sample nineteen cases for a five year post-merger time frame. The following conclusions were drawn:

(a) Means of payment chosen in Indian merger case could be explained using the theorem of preservation of access to capital market for future growth, structural exchange for tax benefit and willingness of shareholders of Target Company to share merger synergy.

(b) Exchange of equity was found in 90.01% cases, in 5% cases equity shareholders of targets were discharged by preference shares and in 4.99% cases by debentures.

(c) Preference share of Target Company was exchanged using equity shares, preference shares, debentures and cash. Mostly preference shares and debentures of the acquiring company were used to discharge preference shares of the target.

(d) There was no definite pattern of change in equity share capital of acquiring company due to merger.
Mostly, reserves and surpluses of merged company increased as a result of merger and in most of the cases, leverage ratios had also increased.

2. Conglomeration helps to reduce business risk.

Empirical examination of two cases of conglomerates (out of nineteen cases) opined that risk reduction through acquisition was not a general phenomenon in India. However, generalizations on the basis of just two case studies could not be done.

3. In India, merger has been chosen as easy route for corporate growth by way of acquisition of sick company.

Out of empirical examination of ten case studies in this regards, six cases were of loss making target companies. Three out of these six cases became profitable division of acquiring company in the post-merger period. In two cases, satisfactory performance of losing target was achieved very quickly, while in one case, it took eight years to revive financial health if sick target. Thus, it could not be concluded that merger as an easy route for corporate growth by way of acquisition of sick company.

4. Revival of financial health of sick transferor company is possible through merger with a financially sound company.

This is overlaps with the third hypothesis. In three cases, losing targets became contributory to the overall profits in the post-merger period. The other two cases showed satisfactory performance and one case took eight years to losing target was possible through merger although it was not an easy route. This supported the effectiveness of tax incentive scheme u/s 72 A of Income Tax Act and justified the BIFR
approach to merger of a sick company with a profitable one. But this was not a general rule.

Sankar and Rao’s Study (1999)

Sankar and Rao’s study (1999)\textsuperscript{152} empirically examined the success or failure of takeover as a strategy of turning around a sick unit. The study also analyzed the implications of takeovers from the financial point of view with the help of certain parameters like liquidity, leverage, profitability and other parameters. To attain these objectives, the following hypotheses were tested on a sample of eight merger cases sanctioned by BIFR.

1. When a company was taken over for turnaround, it achieved better liquidity, better solvency and improved profitability after the takeover.

2. When a company was taken over, the taken over company with the support of the taking over company expanded or modernized its business activities in the process of turning around.

The finding of study validated these hypotheses. The conclusions that emerged were that the takeovers could be successfully used to turnaround a sick company. Another observation of the study was that units which had turned around after takeover were those which were taken over by reputed management group. Therefore, it is concluded that if a sick company is taken over by a healthy company with good management who make serious attempts, it is possible to turn around such sick companies successfully.
Beena’s Study (2000)

Beena (2000)\textsuperscript{153} carried out an analysis on the nature of mergers in terms of their management during the period 1990-95 on a selected sample of forty five merger cases. The results showed that thirty one cases were horizontal mergers and remaining divided equally among vertical and conglomerate mergers. This suggested that merger movement during the early 1990s showed the dominance of mergers between firms with related management, though there were signs of increased role of mergers between unrelated companies or those under different management.

Further, it was found that merger was not a route to growth, but was predominantly financed through resources acquired from a buoyant market share. The study argued that though the merger movements in early 1990s might have contributed to an increased in asset concentration at firm level (asset growth was not in more than 20\% of sample cases), it had not contributed to an increased in concentration in terms of relatives shares of business groups.

The study also analyzed some of financial motives for mergers to see if any of these could explain the merger wave of 1990s. Using a sub sample of thirty three out of forty five sample cases, statistical test of Wilcoxon-rank paired test was conducted to see if there was any significant difference in the financial characteristics of acquiring and acquired firms. The results did not suggest any significant differences amongst them although the shareholder profit in the acquiring firms was significantly different from the acquired firm.
Besides relative profitability another significant issues analyzed was whether mergers were a means by which profit making firms absorbed loss making ones, either in order to expand at lower cost or garner tax benefits available for such mergers. The results showed that only 22% of the total acquiring firms which were earning profits were involved in mergers with loss making firms in order to reap tax benefits or expand at low cost.

Another issue analyzed on a sub sample of twenty five merger cases was the extent of changes in the shares in total equity of those holding the controlling block in the acquiring firms as a result of merger. Of the twenty five acquired firms, eleven firms were foreign owned and rest were domestic. As a result of these acquisitions through merger, the share of major controlling block increased in the merged company as compared with the acquiring firm in eighteen out of twenty five cases. In the remaining seven cases where there was reduction in shareholding of major controlling block, two were mergers between firms belonging to unrelated management. This evidence suggested that, one of the financial motives for mergers and why it occurred generally in related firms was the need for mergers and why it occurred generally in related firms was the need for the business group to increase its controlling block in order to guard against a takeover.

Again, on a sub-sample of thirty nine out of forty five sample cases, impact of profitability was assessed in term of various variables (like rate of return on capital employed, profit margin, shareholders profit, gearing ratio dividend per share ect.). The results showed mixed evidence on profitability. However, wilcoxon matched pairs signed ranks
test showed no significant difference in rate of return and profits between the periods before and after the merger. However, the trend on average gearing ratio showed a decline significant in 69% of cases and returns on shareholders equity showed an improvement in 69% of acquiring firms. These trends suggested that desire to improve financial position of the firm through a viable capital structure could be one of motives of merger.

Finally, an analysis of effects of mergers on shareholders gains was carried out on a sub sample of twenty acquiring firms out of sample of forty five firms in terms of share price data. The results suggested that on an average, a majority of acquiring firms went through a period of share prices rises prior to merger, then experienced a fall in their share prices on the announcement of merger and this continued for two - three yeas after merger. This confirmed the earlier evidence that majority of merger cases were characterized by premerger buoyancy in share prices of acquiring firms. Once mergers occurred, their prices showed a bearish trend because of intervening phase of process of revamp and restructuring and consequentially share price decline in post-merger period.

Ravindra P. Purohit’s Study (2000)

Ravindra P. Purohit (2000) stated, the dynamics of globalization is now a major force in shaping development in countries. The basic reasons behind this globalization are rapid advances in and convergence of information and, communication technology. Increasing availability of capital at global level has also played major role.
Vardhana Pawaskar’s Study (2001)

Vardhana Pawaskar (2001)\textsuperscript{155} stated the impact of mergers on corporate performance. It compares the pre and post merger operating performance of the companies involved in merger to study their financial characteristics. Also the effect on merger induced monopoly profits is identified by looking at persistence of profits. This is by taking 36 cases of merger from 1992 to 1995, it is seen that there are no significant differences in the financial characteristics of the two companies involved in merger. The merger seems to lead to financial synergies and one-time growth. The regression analysis shows that there is no significant increase in the post merger profits.

Anupaag Saxena and Naresh Grandhy’s Study (2001)

Anupaag Saxena and Naresh Grandhy (2001)\textsuperscript{156} carried out study on payments in merger activity are usually made in cash, in stock or in different shades of a mix of both. This study is an attempt to demystifying the strategic intent behind each of these models of payments and designs a conceptual framework that would help decision makers to evaluate which method they should choose, in an acquisition. This study is to show the advantages and disadvantages of various options, both to the acquirer and the acquired. Another important area covered by this study considering contextual background of the Indian legal framework, the accounting and tax implications. In the and however, any merger boils down to numbers and for anybody involved in merger, the main aim is to at least be aware of the risk. So it can be reduced up to possible level, if can not be eliminated in total.
Arindam Ghosh and Brataai Das’s Study (2003)

Arindam Ghosh and Brataai Das (2003)\textsuperscript{157} carried study on this subject and stated that a transaction involving two or more companies in the exchange of securities and only one company remain in existence is called merger. Merger results in number of advantages to both the companies. There are three types of merger. The reason of merger is mainly to reduce the competition, economies of large scale and tax benefits.

Macchi and Menon’s Study (2004)

Hetal K. Machhi and Preeti V. Menon (2004)\textsuperscript{158} stated the in this competitive global business world Merger has become essential requirement for a company to run a business with profit. The main reasons for Merger are increase in market share, use of modern technology and maximizing profit etc. The merger wave has spread in India. The actual merger wave in India started after 1994. The number of good and reputed companies has gone for merger in domestic as well as in international market. Merger leads a very big question “Will company will do well after merger action”.

ICFAI Group\textsuperscript{159} stated that procedure for merger and amalgamation is different from takeover and amalgamation is different from takeover. Merger and amalgamation are regulated under the provisions of the Companies Act, 1956 whereas takeovers are regulated under the Substantial Acquisition of Shares and takeovers Regulations.
Vijay Shrimali and Karunesh Saxena’s Study (2004)

Vijay Shrimali and Karunesh Saxena (2004)\textsuperscript{160} stated, due to the imminent implementation of WTO Guidelines with effect from July 2005, it was become mandatory for business organization to strengthen their R&D base. Consequently, the size of the business organization matters most, merger and acquisition have, therefore, become order of the day, an attempt has been made in the paper to provide a theoretical framework of M&A, various examples of merger and acquisition in the world market and finally, the economic advantage of M&A have been outlined.

Seema Narzareth’s Study (1999)

Seema Narzareth (1999)\textsuperscript{161} stated, corporate restructuring is the most powerful tool. available for those companies, which are in dire straits. The most possible thing for these companies is to “restructure” their operations so that performance may improve. Some of the steps include hiving-off of the subsidiaries, merging loss-making units with profitable ones, demerger of company etc, among others. But how practicable are merger and other ways of restructuring? Are they really working? Of the merger in Indian corporate sector since last two years, none can highlight that mantra of corporate strategy by mergers is working.

R.G. Bhatnagar’s Study (2002)

R.G. Bhatnagar (2002)\textsuperscript{162} in his study said that as Indian economy precedes with globalization process the Indian corporate and financial sector are left with no choice, but to consolidate the stand up to global
competition. This lead the consolidation through mergers has become the trend across the globe.

A number of benefits will accrue to the Indian financial sector and to the Indian economy as whole. Due to merger banks would definitely be in a better position to diversify their operations and thereby reduce their risks. After merger, banks are likely to become strong with better earning capacity. This will enable banks to further strengthen their capital base. The strong capital base will in turn banking sector to take up new and diversified activities. This may be financing equity underwriting, distribution of investment, and insurance products, issuing of asset based securities, etc. Further, merging activities in banking sector is bound to reduce overhead cost by rationalizing branch locations and avoiding duplications.

Bailout mergers and linking of small and weak banks to the stronger ones may not serve to create any competitive edge for the merged activity. Merger is not a panacea to the problem of weak banks, while it may make sense for some weak banks to be merged, it must bust be realized that some may have to winded up.

One of the major obstacles to the consolidation in banking sector is labor law. This is particularly relevant for public sector banks which continue to be overstaffed. A working group of prime minister’ task force on administrative and legal simplifications suggested recently that there should be adequate provisions for industry to shed surplus manpower after payment of reasonable compensation.

Another aspect, which requires attention is information, flows to the investors. The SEBI created to protect the interest of the investors
particularly, the smaller ones, must devise a monitoring mechanism to ensure that gaps in information flows do not affect the shareholders of the banks concerned. When two banks of contrasting corporate culture are merged, bringing harmony and a sense of identity are other issues that have to be sorted out.

Joydeep Biswas’s Study (2004)

Joydeep Biswas (2004)\textsuperscript{163} in his study on recent trend of merger in the Indian private corporate sector. Corporate restructuring in the form M&A has become a natural and perhaps a desirable phenomenon in the current economic environment. In the tune with the worldwide trend, M&A have become an important conduit for FDI inflows in India in recent years. In this paper, it is argued that the Greenfiled FDI and cross-border M&As are not alternatives in developing countries like India.

CONCLUSION

Although there is a plethora of research literature on mergers and acquisitions, most of the studies have been done for the efficient markets of the developed world especially US and UK. In India, very limited research has been done on this burning topic. Books available are in plenty but they are mostly theory based. None of the few studies conducted in India have explored the performance of mergers and acquisitions empirically in terms of their motives and their effect on shareholders value. The present study makes an attempt to fill these voids and aims to investigate the financial performance of mergers and acquisitions that have taken place during 1999-2000.
REFERENCES


5. J. Fred Weston, The Role of Mergers in the Growth of Large Firms, Berkeley, 1953, pp.85, 86.


11. These countries are UK, US, Sweden, Belgium, France, Netherlands and West Germany.


14. These groups include merging and non merging and merged and non merged firms.


17. R.L. Marris (1968) op. cit.


32. R. Stillman, Examining Anti Trust Policy Towards Horizontal Mergers (Chicago: Lexecon Inc.,1982).


36. Unused debt capacity.


38. S.C. Myers and N.S. Majluf (1984), op. cit., pp.188. This term is used for “Large holdings of cash or marketable securities or ability to issue risk free debt.”


40. A direct measure of financial slack as defined by Myers and Majluf (1984) op. cit., and also used by Asquith and Millins (1986) op. cit. is as follows:

\[
\text{Net Debt Ratio} = \frac{\text{Net Debt}}{\text{Common Equity} + \text{Preference Stock}}
\]

\[
\text{Net Debt} = \text{Short term debt} + \text{Long term debt} + \text{Net debt} - (\text{Cash, cash equivalents and marketable securities}).
\]

41. S.C. Myers and N.S. Majluf, op. cit.


56. An efficient Market is defined as one where share price fully incorporates all available information in that security and share price provides accurate signals for resource allocation. Studies on British and American stock markets have shown them to be efficient.


60. M. Firth, 1976, op. cit.


The four regulatory changes of 1966-70 include the Williams Amendment to Security Laws, Tax Reforms Act, 1969, Accounting principal Board (APB) opinion 16 and 17.

Williams Amendments regulates cash tender offers, forced disclosure of information and statutory waiting period.


An event was classified as tender offer if the firm purchased at least 60% of target firms’ shares by tender offer and later bought the remaining shares as clan up merger.


ibid.


90. As done by A. Singh (1975), op. cit.


94. G. Meeks (1977), op. cit.

96. More specifically, when firms with high PIE ratio takes over firms with lower ratio, there is an expected, immediate investor gain through merger.

97. Since variation in profits for large firms is smaller than for smaller firms, so investment in large firms involves less risk.


100. ibid, pp.30.


103. ibid, pp.44.


112. M. Firth, (1976), op. cit.


114. The description of Low, average and high are those used in industrial studies, hence are subjective. A Complete analysis of financial characteristics in term of each characteristics is not possible since some studies have calculated few variables only.

115. op. cit.

116. op. cit.


119. op. cit.

120. op. cit.

121. op. cit.


123. A. Buckley (1972), op. cit.


128. Ibid.


131. op. cit.

132. op. cit.


135. Fred J. Weston, The Role of Large Firms (Berkeley University of California Press, 1953).


141. Tobin’s q (1969), explained by the ratio of market value to asset replacement costs was suggested as a possible explanation of changes in merger activity. When replacement costs exceed market value (i.e. q ratios < 1), one might expect
an increase in number of mergers and acquisitions as assets could be acquired in the market cheaply and vice versa.


149. S.R. Singh and V. Kumar, Corporate Rehabilitation and BIFR (New Delhi : Shipra Publications, 1994).


155. Ibid.


