GAINS FROM MERGERS - EFFECTS ON SHARE PRICES,

AND A COMPARISON OF ECONOMIC GAINS AND FINANCIAL GAINS

.

by

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By the name of Allah, the Compassionate, the Merciful

Dedicated to my father and to the memory of my mother

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ABSTRACT

The primary aim of this dissertation is to examine the profitability of mergers. In particular it investigates two separate approaches to measuring gains from merger and whether the literature succeeds in reconciling an apparent conflict. The conflict resides in the anomalous situation whereby securities markets indicate gains from merger but ex post economic performance seemingly does not. In recent years much has been written on business merger. There is ample literature in American business Journals, on pre-merger planning, pre-merger profit ability, and the implemention of merger activities. But little has been written on economic gains from merger.

Chapter I looks at the nature and types of mergers, what motivates merger activity, and the possible (or potential) consequences of mergers.

Chapter 2 concentrates on the impact of mergers on security markets, i.e. the effect on share prices and returns. The evidence is reviewed to discover if, on average, mergers generate gains to shareholders, when these gains occur, and how they are distributed.

Chapter 3 investigates whether or not mergers do infact generate economic gains and greater profitability. This is done by reviewing the evidence on the ex post performance of merged firms - are they infact more efficient, more profitable?

Finally Chapter 4 summarises the nature of the (apparent) conflict between the findings of Chapters 2 and 3, and asks whether the conflict has been resolved in the literature.

ABBREVIATIONS

AC (Average cost)

AEI (Associated Electrical Industries)

BICC (British Insulated Callenders Cables Ltd.)

BJN (Berger, Jenson & Nicholson)

CAR (Cumulative average residuals)

CER (Cumulative excess returns)

CRSP (Center for Research in Security Prices)

GEC (General Electric Company)

LBC (London Brick Company)

MMC (Monopolies and Mergers Commission)

NYSE (New York Stock Exchange)

PCAM (Perfectly Competive Acquisition Market)

RHP (Ransome, Hoffman & Pollar Ltd.)

CHAPTER ONE

MERGERS

1.1 DEFINITION

Merger is a term used loosely. In the U.S.A. it signifies a joining together of the component parts of two companies involving the closure of one, but for business purposes such mergers need to be more closely defined.

It is not possible to give a precise definition for although mergers have a legal connotation, no legal definitions are available. However, merger can be defined as follows:-

A merger is quite similar to a consolidation except that, when one or more firms are merged, the resulting firm maintains the identity of one of the firms. A merger may also be clearly defined as a combination of two corporations where only one survives. Mergers are generally confined to combinations of two firms that are unequal in size; the identity of the larger of the two firms is normally maintained. Generally, the assets and liabilities of the smaller firm are consolidated into those of the larger firm. The merger may be used by a larger firm to obtain the assets or the common stock of a smaller company. The larger firm pays for its acquistion with cash or with preferred or common stock.

Growth is vital to the well being of a firm. Growth is essentially needed for a firm to attract able management by offering rapid promotion and challenging creative activity. Without able executives, the firm is likely to decline and die. Merger activity has played an important part in the growth of the firms. So financial managers are required both to appraise the desirability

of a prospective purchase and to participate directly in evaluating
the respective companies involved in a merger.

1.2 MAIN TYPES OF MERGERS

1. Horizontal

2. Vertical

3. Conglomerate

4. Geographical

1.2.1 Horizontal Mergers

A Horizontal Merger is a merger of two or more companies that
compete in the same industry and operate at the same level of
production or distribution. A merger between the two retailers who
sell the same product lines is an example of a horizontal merger.
The merger of two textile mills is also a form of horizontal merger.
This type of merger allows the firm to expand its operation in an
existing product line and at the same time eliminate a competitor.
It may seek to become a 'price leader', and if it assesses that the
elasticity of demand is not high, and competition is restricted it
could increase prices and thus make extra profits. The aim could
be to obtain the advantage of economies of sale and spreading a
fixed cost over a large output. For instance, two finance directors
or two purchasing agents of two firms after merging may no longer
be required. As a result fixed cost per unit of products will be
decreased. Economies are also expected to result through the
purchase of merchandise in large quantities and thus a large ware-
house can be used up to its fullest extent. There would be no need
to hire more warehouses for storing raw materials and finished

goods. Duplicate sale channels can be also avoided. Sometimes, a horizontal merger of firms increases sales by increasing the diversity of styles and sizes of the finished products. For example the producer of soft drink (say Coca-Cola) may give special offers by increasing $12\frac{1}{2}\%$ of quantity at the same price. As a result the sales of Coca-Cola may be increased enabling the firm to earn more profit.

The company acquired might have special 'know-how' or patents which could be developed profitably by the acquirers, or the acquirer might be planning expansion and identify an established smaller company whose acqusition would permit it to enter the new market quickly and effectively. On other occassions the acquirer might identify an unprofitable company with poor management, which it could revitalise by introducing new management and then deploying the resources of the company more efficiently and hence profitably.

1.2.2 Vertical Mergers

A vertical merger involves two or more firms that compete in the same industry but operate at different stages of the production distribution system. Under vertical merger, companies may move 'upstream', or 'backwards', towards their source of supply, or 'down stream', or 'forwards', towards their final customers, or bottom. The main purpose of this type of merger is to protect the sources of supply or to seek surer final markets for products. The example of vertical merger is that, a manufacturer might purchase some of the wholesalers that distribute its product lines. Alternatively a manufacturer might purchase some of its raw

materials suppliers. Another example of vertical merger would be
the merger of machine tool manufacturerwith supplier of castings
The economic benefits of vertical merger stem from greater control
over the acquisition of raw materials or the distribution of finished
goods. A firm that is totally integrated controls the entire pre-
duction process from the extraction of raw materials to the sale of
finished goods. Vertical mergers can allow the acquiring firm to
market its existing product lines in new geographic areas by using
the marketing channels owned by the acquired firm.

1.2.3 Conglomerate Mergers

A pure conglomerate is a merger of two or more firms who
operate in different, unrelated industries. An example of a pure
conglomerate involves the acquisition of soft drink producers by
tobacco companies. A merger between firms whose product lines are
complementary but not directly competitive is sometimes referred to
as a congeneric merger. The acquisition of leasing companies,
consummer loan companies and factors by commercial banks are
examples of congeneric mergers. Since a pure conglomerate merger
consists of firms in unrelated business, no real operating
economies are expected from this type of growth. The key benefit
of conglomerates lies in their ability to diversify risk by com-
bining firms in a manner that provides a minimum risk and maximum
return. Conglomerate merger should be most attractive to firms
having quite seasonal or cyclical patterns of earnings.

1.2.4 Geographical Mergers

Georgraphical mergers occur whenever there is backward integration with a major company acquiring a supplier of raw materials in a developing country, but in such cases the concern of the acquirer is with the supplier and not the location.

However, a feature of multinational companies is the worldwide nature of their activities. Such companies will be concerned with supplies and with ultimate consumers. Their vast resources permit them, inter alia, to think strategically in global terms and make plans which take into account information obtained from a number of countries, and to look several years ahead. They have expert advice on such matters as taxation, relative labour costs, and government policies towards expatriate investors. A noteworthy fairly recent development is the creation by multi-national car and electronics manufacturers of manufacturing sub-sidaries in countries such as Taiwan and South Korea, Brazil etc., where there are relatively low paid skilled, hard working labour forces in economic environments well disposed to the capitalist ethos. Often Central and Local governments offer strong tax and other financial incentives to companies which establish factories and thereby create local employment. In other cases and especially with smaller companies, a company holding patents or having manufacturing 'know how' and wishing to develop sales in a potentially important market in a new geographical area will not itself attempt to establish a presence there but will instead negotiate an agreement with a local company whereby the latter manufacturers under license, using the trade name, or patents or process of the licensor, franchise agreements may be offered.

These are options permitting a company to gain profits with limited capital outlays and risks, and without incurring the costs liable to arise in establishing an operation overseas. Setting up a business overseas in practice always involves unexpected problems and these require the attention of top and senior managers.

1.3 Motives For Mergers

There are various motives which most frequently lie behind mergers:

1) to obtain real economies of scale.

2) to obtain monetary economies of scale.

3) to merge because of tax advantage.

4) to spread risk by diversification.

5) to obtain economies in advertising.

6) to obtain the advantages from the division of labour.

7) to obtain the advantages of technical innovation.

8) to obtain the advatages of marketing.

9) to obtain the advantages of better management.

10) to build an empire.

11) to increase market power.

12) to avoid the firm's failure.

Some of the above motives are discussed below.

1.3.1 Operating economies

If the level of EBIT of the acquiring firm is increased or if a reduction in the variability of its EBIT reduces its business risk, then the merger may be desireable from the view point of operating economy.

Operating economies can be achieved through a combination of companies. There are various ways of achieving operating economies. We know that an increase in output often means lower cost per unit. Economies of scale arise where the technology of production brings about falling costs per unit of output with an increasing rate of production up to the minimum efficient plant size, - the size of plant beyond which cost savings become small.

As a matter of fact the opportunity to obtain a given output from a smaller total of factor inputs would indicate a real resource saving and this resource saving is the economic gain of the society. We may otherwise state that increased output is obtained from a given level of resources which may lead to lower domestic prices.

When the market for a product is growing firms with the largest market share benefit more rapidly from the economies of scale that come from additional new plant. All the companies may not have the same share of the market. Some companies posses smaller shares and some companies posses larger shares of the market. In this case if the company with the smaller share of the market combines with an other company in order to justify the purchase of new plant, then the combined companies would get economies of scale. This may be explained clearly with the following example. For instance there are four firms, A, B, C and D in the same industry with 40, 60, 80 and 100 unit shares respectively of the market. At this moment more efficient new plant is available, but at least 80 units of production would be required to break even.

Analysis of Profitability Statement

	A	B	C	D
Units Produced per Period	40	60	80	100
Revenue (£500 per unit)	20,000	30,000	40,000	50,000
Costs: Variable costs (£250 per unit)	10,000	15,000	20,000	25,000
Fixed Cost	20,000	20,000	20,000	20,000
Total Cost	30,000	35,000	40,000	45,000
Profit (Loss)	(£10,000)	(£5,000)	0	£5,000

It appears from the above statement that A and B separately could not reach the break even point, but the firm D is profitable. Firm C would just break even on the new process at the existing level of business, 80 units per period.

Now if the market anticipates growth of 30 percent with each company maintaining its present market share. Companies A and B will increase the volume of their respective sales by 12 and 18 units respectively raising total units 52 and 78 units. Company C would increase by 24 units and can exceed the break even point, which would justify replacing the existing investment with the new process. The financial performance of company D will be far better with the new process. But companies A and B at sales of only 52 and 78 units would not break even, because the break even would be at 80 units. Now it would be better for companies A and B to merge, when they would be able to reach combined sales 130 units (52 + 78), at this level they could earn profit £12500 (130 x 500 = 65000 - 130 x 250). At this level of sales they could earn more profit than C and could compete with company D. Alternatively A and

B company could be merged with company C in order to achieve greater economy of scale. In this way profit can be maximised.

Merger brings productive economies which strengthens the country's external trade performance. Productive economies which will lower costs also benefit the home trade. By improving the export trade the country can earn huge foreign currency which could be utilized for further development of the country.

Merger enables better use of the vast resources devoted by both companies to research and development. Substantial economies can be obtained in overheads by the spread of such expenses over a much larger turn over.

Duplicate programs might be eliminated or significantly reduced. The accounting, credit, marketing and purchasing department might be centralized.

With an industrial company merger, a firm with a product that complements an existing product line can fill out that line and, hopefully, increase the total overall demand for the products of the acquiring company. The realization of operating economies is known as synergism; synergistic effects are said to be present when a whole is greater than the sum of the parts or 1 and 1 equals 3. This can be clarified by examples, say in the electronic field, a company formerly only producing radio - tunes and amplifirers may amalgamate with a loud speaker producing company, and thereafter may seek to capture the market for complete hi-fi accessories. So if the synergy occurs, the value of the combined firm, say VAB, exceeds the value of the individual firms brought together by the merger. With synergy, $VAB > VA + VB$.

Operating economies can be successfully achieved through

horizontal mergers.

1.3.2 Financial Economies

A merger can produce financial economies by improving the working capital and capital structure composition of the acquiring firm. This can reduce the firm's financial risk, magnify the growth in its EPS or both.

Often firms combine to enhance their fund raising ability. A firm may be unable to obtain funds for internal expansion, but able to obtain funds for external business combinations.) Many firms whose working capital positions indicate excess liquidity may become target companies for acquisition. Their excess working capital might be a long term financing source to the acquiring company. Furthermore, where a company has liquidity problems, it may not be able to incur long term debts, or at least not on favourable terms. Under these circumstances, the company having liquidity problem seeks out companies whose balance sheets have little or no long term debts. The acquisition of this type of "cash rich" company immediately increases the firm's borrowing power and decreases its financial risk and it may realize a decrease in its weighted average cost of capital. Due to lower weighted average cost of capital the overall financial result is a higher return with little or no additional financial risk.

1.3.3 Tax Considerations

Tax considerations are a key motive of merger. The question of tax benefit comes from the fact that one in the firms has a tax loss carry forward which can be applied against future income.

Two situations could actually exist. A company with a tax loss carryforward could acquire a profitable company to utilize the tax loss. In this case, the acquiring firm can increase the combinations earnings by reducing the taxable income of the acquired firm. If the non profitable firm had not been acquired, the tax loss carryforward might not have been used. A tax loss carryforward may also be useful when a profitable firm acquires a firm having such a carryforward. In either of these situations, the merger must be justified not only on the basis of the tax benefits, but also on the basis of future operating benefits or on grounds consistent with the goal of long run maximization of owner's wealth. Further, the tax benefits described are only useful in mergers - not in the formation of a holding company. Because only in the case of mergers operating results are reported on a consolidated basis. The following example will clarify the use of tax loss carryforward.

EXAMPLE: Company A has a total loss of £45,000 in tax loss carryforwards resulting from operating tax losses of £15,000 a year in each of the past three years. In order to use these losses and diversify its operations, company B has acquired company A through a merger. Company B expects to have earnings before taxes of £30,000 per year. Assuming these earnings are realized, company A's portion of the merged firm just breaks even, and company B is in the 40 percent tax bracket, the total taxes paid by the two companies without and with the merger are calculated below.

Total Taxes Without Merger

	Year 1	2	3
Profits before taxes	£30,000	£30,000	£30,000
Taxes (40)	£12,000	£12,000	£12,000

Total Taxes With Merger

	Year 1	2	3
Profit before taxes	£30,000	£30,000	£30,000
Less: tax loss carryforward	£30,000	£15,000	0
Taxable Income	£ 0	£15,000	£30,000
Taxes (.40)	0	6,000	12,000

With the merger, the total tax payments are only £18,000, but without merger the total tax payments are £36,000. So with the merger the total tax payments are less.

1.3.4 Diversification

The prudent management takes action to diversify the field of operations in order to protect a company or group from fluctuations in demand on a wide scale due to economic factors. So diversification is the motive in some mergers. By acquiring a firm in a different line of business, a company may be able to reduce cyclical instability in earnings. In fact it is not possible to find two companies with negative correlation in earnings, it is sometimes possible to find situations in which there is only moderate correlation. Diversification works because prices of different stock do not move exactly together. There are many occasions on which a decline in the value of one stock is cancelled out by a rise in the price of the other. Therefore, wise investors don't put all their eggs into just one basket: they reduce their risk by diversification.

Now the question arises as to whether management is justified in using shareholder's funds for the spreading of risks, as shareholders are quite capable of diversifying their investments in various types of business, or by means of unit trusts or otherwise. But there are execptional cases in which

personal diversification may be more expensive than corporate diversi-
fication.

There is another reason which justifies a merger,   the reduced
risk of bankruptcy that results from the co-insurance of the debt
of the two companies. The meaning of co-insurance should be
clarified here. If a firm A defaults, this means that the value of
its liabilities is more than the value of the assets. Now if the
earnings of another firm B are not perfectly positively correlated
with A's earnings, the deficit from A might be met from a surplus of
B's assets over its liabilities. In effect, increasing diversifica-
tion of the firm produces a lower risk of bankruptcy because when
one part of the firm does badly, another might do well or less badly.

The benefits of such diversification depend upon the costs of
bankruptcy. Such costs include legal and administrative costs of
reorganization and liquidation. We know such costs exist, and if
the co-insurance effect reduces the risk of bankruptcy and therefore
the number of bankruptcies, then the consequent cost will be lower
as a result of mergers. However, expected bankruptcy costs have
been estimated to be small relative to the value of the firm; and
as a consequence one should not rely on a reduction in expected
bankruptcy costs to justify a significant bid premium. It must also
be remembered that co-insurance of debt . can take place without
mergers, that is by mutual credit insurance.

How are any benefits of the co-insurance of debts distributed?
Here we must recognize that existing debt . holders may benefit at
the expense of shareholders. If a merger reduces the risk of
default to existing debt holders, they must benefit. A gain for
existing debt holders implies a loss for shareholders. Thus share-

holders can lose as a consequence of the co-insurance effect if they can not call in the existing debt and reissue new debt at a lower interest rate. On the otherhand, new debt holders will charge less interest as a consequence of the lower bankruptcy risk. In that sense the new debt is correctly priced and therefore there are no wealth transfers.

1.3.5 Economies in Advertising

Economies in advertising can be obtained by the merged companies. Promotional economy may occur because vital advertising media grant substantial quantity discounts, as television companies usually do. Efficient promotional techniques may be bought by incurring large expenditures which is not possible for a samll firm. The strong trade mark of an acquiring company is easily transferred to the product of the acquired firm which would enable the merged companies to realise revenues after selling the stock of goods quickly.

The quantity of discounts obtained through advertising media is a cost saving. The large firm can enjoy this cost saving which is treated as a true economy of scale. It is a private and social economy because it reduces the resources necessary to obtain a given promotional result. Large expenditure can buy relatively more efficient advertising than a small one, and this is only possible for the large companies. Small companies can not afford large expenditures for advertising and can not gain economies from advertising.

Similarly, advertising economies based on the transfer to the new product of an already established trademark also reflect a true economy of scale. So economies of scale can be obtained after

purchasing large advertising media.

1.3.6 Technological Innovation

Making the best use of resources at any moment in time is clearly important for which technological innovation is sometimes required. The introduction of new production methods which raise productivity - i.e. process innovation is one main aim of technological advance. Another is consumer product innovation which means the creation of better things for better living. Product innovation may also affect consumer's choices between goods and leisure, stimulating demand for the increasing quantities of output made possible by a productive system of growing efficiency.

The principal consequences of technological change are increases in productivity and increases in the quality of consumption. As a results of technological innovation (where necessary) the company may get financial benefit in the long run. But technological innovation is very expensive and requires huge funds which the small firm sometimes can not afford. By the joint effort of merged companies technological innovation is possible.

1.3.7 Marketing

By merging into larger units the firm can buy in larger quantities. The cost of negotiating the contracts can be spread over a large volume. As a result the administrative costs per unit of product are less. At the time of buying larger units the merging firms get discount which helps to improve the financial condition of the merging company to some extent. Furthermore merging companies may get special terms and conditions from the supplier.

Of course there are some disadvantages also. The increase in size increases the buying problem in proportion. When the firm requires a huge quantity of materials it may lead to the company to enter into long term contracts, whereas the smaller firm can buy it's requirements in the market as required. At a time of rising prices a long term contract is favourable but it is unfavourable when prices are falling.

The sales department can enjoy many advantages from mergers where the same commercial knowledge may be applied to an increased range of products. The number of agencies, dealers and stockists can be reduced by combining the trade of the merged firms through a minimum number of outlets. Certain sales men can be eliminated to avoid duplication of effort in a particular territory.

1.3.8 Management

Merger may be the only effective way of injecting more aggressive and better management into a sector. The management of the acquiring company can be improved by transferring management from the smaller acquired company. The merger may enjoy a success while the overhead costs are drasitically cut and the loss making activities eliminated. Suppose A is a well - managed business, but B is not. If firm A acquires firm B, the efficiency of firm B is brought up to the level of efficiency of firm A. So efficiency is increased by merger. In general terms if good management is a scarce factor of production, output will be increased if more of the relatively abundant factors of capital and labours are applied to the scarce factor. It is more economical and beneficial to utilize good management on a large scale than to waste it in smaller enterprises.

In a competitive economy the firms that survive and do better than their competitors may well have better management. Their profitability can be increased and the growth of the firm can be expanded with the help of good management.

Without the contribution of good management no growth either by internal means or by take-over of other firms can be achieved. Good managers may acquire other business simply because they are good managers. So efficiency is increased by good management as a result of mergers and this would be a social gain as well as private gain. The level of efficiency in the economy would be raised by such mergers.

1.3.9 Division Of Labour

Division of labour is possible within large organizations. Division of labour leads to specialist production. Specialization leads to greater efficiency and lower costs. But division of labour depends on the extent of the markets and the operation must be large enough to allow for the subdivision of work. As a result of division of labour, workers will become more efficient and there will be larger production which will lead to a decrease in cost per unit.

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CHAPTER 2

GAINS FROM MERGER - EFFECTS ON SHARE PRICE

2.1 INTRODUCTION

There have been many studies on the consequences of mergers, particularly with regard to gains from merger. Although mergers and takeover are now very common features of modern business life, the issues of gains from merger are very controversial in the economics literature.

Some valuable analysis and evidence can be found in the numerous articles so far been published on the issue. In a survey of fifty years empirical research on the profitability of mergers in the United States, Hogarty concluded that mergers reduce the profitability of acquiring companies but have no significant effect on the combined profitability of acquired and acquiring companies. He believed that acquiring firms engage in unprofitable activity "because mergers are an attractive form of investment for those firms whose managers are risk takers ... (since) some mergers produced extra ordinary profits (St. John's Law Review 1969) - while most produce losses to the acquiring firms." However, there were many short comings in previous studies. Most of the studies employed relatively samll sample sizes and used primitive models, i.e. they did not take into account appropriate adjustments for differences in risk between companies.

Mandelker and Halpern employed in their recent studies in the United States large samples and used models which adjust returns to shareholders for differences in risk and for movements in the market as a whole.

2.2 G. MANDELKER'S STUDY[1]

Mandelker tested the following hypotheses. The perfectly competitive acquisitions market (PCAM) hypothesis.

As a result of competition in a perfectly competitive market the expected rates of return on assets of similar risk will be equal. If the expected returns offered by the acquisition market is greater than equivalent activities of similar risks, more resources will be directed to this activity until expected rates of return are reduced to a competitive level. On the otherhand if the acquisitions market offers lower expected returns than equivlaent activities of similar risk the result will be reversed There are no monopolistic sourcesof gains for an acquiring firm according to the PCAM hypothesis.

The acquired firms may have had unique resources which are not, used effectively and which could provide economic gains to other firms by mergers. In order to acquire these unique resources there will be competition which will cause abnormal returns for the stockholders of the acquired firm. An acquired firm might have some accumulated losses (unique resources) which it can not hope to use against future profits to lower taxes, but it could utilise these losses through mergers. On the otherhand the acquiring firms earn a rate of return equal to other investments or production activities of similar risk. The average residuals for the acquiring firms are generally positive, but not statistically significant.

Some economists argue that firms merge to achieve synergy but this argument is in consistent with perfect market in business organizations. Internal or external growth offers   . equal synergy in a perfect market.

The Efficient Capital Markets Hypothesis

An efficient capital market is a market in which prices reflect all relevant information. A market is efficient if transaction prices fully reflect in an unbiased manner all relevant information available to market participants at the time. When the capital market is efficient with respect to mergers, all information about a merger should be reflected instantaneously into the corresponding stock prices. Gains may be obtained either by the acquiring or by the acquired firms through mergers. The hypothesis explains that the stock market reacts efficiently regarding information about a forthcoming merger, but it does not eliminate the possibility of monopolistic elements in the acquisitions market.

In addition to PCAM and efficient market hypothesis, Mandelker pointed out the following hypotheses which are related to mergers

The 'Abnormal Gains' Hypothesis

As per this hypothesis information regarding forthcoming acquisition is viewed as good news for the stockholders of the acquiring firm. The reasons which are considered for economic gains from mergers are generally economies of scale, attainment of monopoly or economic power, financial advantages, tax considerations, undervalued securities, diversification, improvement of the 'market-ability' of stocks and others.

Lintner has written most comprehensively why mergers offer abnormal returns to the shareholders of the acquiring firm. He mentions some traditional arguments such as gains from favourable tax treatment, gains from greater leverage and/or lower borrowing costs due to size, and possible gains from merging imperfectly

correlated income streams to preserve expected returns with reduced
risk.

The 'Chain Letter' Hypothesis

The next view is the 'chain letter' hypothesis. It explains
that investors rely on very few sources of information. Financial
and accounting numbers are one of the most important sources of in-
formation. Lintner states that shareholders are misled by accounting
manipulations in mergers or by the artificial increase in earnings
per share resulting from the differential price earnings ratio game
played by acquiring firms. The motive of accounting manipulation is
that the announcement of forthcoming merger is followed by a rise in
stock prices of the acquiring firm. In this context, the information
with regard to EPS and other accounting numbers would be misleading.
The chain letter hypothesis is based on the assumption that capital
markets operate inefficiently.

The 'Growth Maximization' Hypothesis

The 'growth maximization' hypothesis is represented by Muller
(1969, p 644) as follows:'... managers maximize, or at least pursue
as one of their goals, the growth in physical size of their corpora-
tion rather than in profits or stockholder welfare.... both the
pecuniary and non pecuniary rewards which managers receive are
closely tied to the growth rate of their firm. Managerial salaries,
bonuses, stock options, and promotions all tend to be more
closely related to the size or changes in size of the firm than to
its profits. Similarly, the prestige and power which managers
derive from their occupations are directly related to the size and

growth of the company and not to its profitability .

It appears from the above statement that mergers reflect the desires of managers to control larger firms and their emphasis on growth maximization rather than a profit maximization which ultimately results in losses to the acquiring stockholders.

Methodology Of Mandelker's Study

It has already been stated that, in equilibrium, expected returns on common stocks of firms of similar risk are equalized. However Mandelker has stated more precisely the measurement of risk and its relationship to expected return.

He used two models. The first one is the capital asset pricing model which states that the relationship between risk and expected return in such a world is as follows:

$$E(\tilde{R}_i) = E(\tilde{R}_o) + [E(\tilde{R}_m) - E(\tilde{R}_o)] \beta_i$$

The above model implies a linear relationship between expected return on a stock and the expected return on the market portfolio.

Another model which is given below is consistent with the capital-asset pricing model and does fairly well as a model of a stochastic process generating asset returns:

$$\tilde{R}_{jt} = \tilde{\gamma}_{0t} + \tilde{\gamma}_{1t} \beta_{jt} + \tilde{\epsilon}_{jt}$$

In this model, the return on asset is a function of the general market variables $\tilde{\gamma}_{0t}$ $\tilde{\gamma}_{1t}$ and also the firm-specific variables, β_{jt} and $\tilde{\epsilon}_{jt}$. It is usually assumed that B_j is constant over time.

Mandelker tried to investigate what information, if any, a

merger conveys to the market about the constituent firms and how such information affects the behaviour of their stock prices.

An acquisition might influence risk and indicate changes in investment and growth policy of the acquiring firm. Substantiated economie theory implies that expected rates of return of an asset are a positive funchion of risk. If, after a merger, the risk of acquiring firms tends to be lower than before that event then this phonomenon should result in lower returns for stockholders after the merger. However, the stock prices do not have to change in any specific direction if these lower returns are subject to an appropriately lower risk level.

Cumulation Of Residuals

In order to judge whether stockholders of merging firms gain from merger he has taken into consideration the average residual and the cumulated average residual (CAR). He used the following equations for finding out the average residuals and the cumulated average residual respectively:

$$\bar{e}_{\tau} = \frac{1}{N} \sum_{j=1}^{N} \varepsilon_{j\tau} \qquad \text{(For average residual)}$$

$$\bar{\bar{e}}_{T} = \sum_{\tau=K}^{T} \bar{e}_{\tau} \qquad \text{(For cumulated residual)}$$

He has defined 0 as the month of the merger, - 1 one month before the month in which a merger took place, + 1 one month after the month of the merger.

Mandelker collected the data from the Federal Trade Commission, the CRSPC (Center for Research in Security Prices) file, Moody's Industrials and Standard and Poor's Corporation Records.

Empirical Results

Mandelker calculated the CAR of 241 acquiring firm (sample size) from 40 months before the merger to 40 months after the merger. As per his calculation the CAR increased during the 40 months prior to the merger by 5.1 percent and decreased during the next 40 months by 1.7 percent. The average β decreased by approximately 8 percent. The result of his research was consistent with the theories that put forward positive results of mergers on stock prices of acquiring firms:

a) As per abnormal gain hypothesis, news about a forthcoming merger should result in higher returns for stockholders of the acquiring firms.

b) As per chain letter hypothesis mergers cause an increase in stock prices, even though the merger may not cause any real economies at all.

These results suggested that the informational impact of a forthcoming merger is spread across approximately thirty months before the event. The subsequent decrease in CAR after the merger might be viewed as consistent with the hypothesis which assumes that people are fooled by acquisitions. Accordingly, it has been argued that people believe that a merger implies higher performance of the acquiring firm and therefore revise their expectations upward. However, on the average, they are 'over shooting' and after the merger they revise their expectations downward. As a result of leaks of information into the market about a forthcoming merger would include the identity of both the acquiring and the acquired firms.

Now the performance of the acquired firm needs to be analysed.

This analysis may help both to identify the period in which such information becomes available to the market and to evaluate the performance of the stocks involved.

At the time of calculating the CAR of the acquired firm it showed a sudden rise of about 14 percent during the last 7 months before the merger. However, the CAR was slightly negative during the period (- 35 to - 7). The percentage of negative residuals was consistently low during the last 7 months before the merger because positive information regarding acquisitions or any other 'good' news correlative with acquisitions starts leaking out to the market about 7 months before the merger.

He further mentioned in his empirical results that the increase in the cumulative average residuals during the period (- 7 to - 1) does not necessarily mean abnormal returns for those investors who intends to acquire stocks of firms that may be acquired after the acquisition has been announced. The residuals of individual stocks typically do not follow the behaviour of the average residuals across stocks. Stocks having some high residuals may differ from stock to stock because residuals of individual stocks are independent.

Probability Tests

It is well known that common security effects such as industry effects can cause residuals across securities in a given month to be correlated.

Mandelker suggests these tests will enable us to ascertain whether stockholders of merging firms gain from mergers. This can be done by applying some probability tests on the average portfolio residuals before or after the merger. The purpose of this test is to

find out whether the average portfolio residuals are statistically different from zero.

Mandelker applied some probability tests for acquired firms and found that average residuals are significantly greater than zero before the merger and which was consistent with his results.

He also applied some probability tests for the average residuals of the acquiring firms and found the value are very low. He opined that it was very difficult to say whether the stockholders of the acquiring firms gain from mergers. However, as per true average residuals the stockholders would gain from acquisitions. Further he concluded that his results seem to be inconsistent with abnormal losses to stockholders from acquisition, i.e. the true average residuals might be zero and this would be consistent with no abnormal gains to stockholders.

From his research he suggested it was difficult to conclude whether the stockholders of acquiring firms earn normal or abnormal positive returns from mergers. However, by applying various tests he expressed that it was consistent with the hypothesis that there are no abnormal returns for the stockholders after the merger. The hypothesis that the capital market reacts 'efficiently' to information regarding mergers seems valid since no specific increase or decrease in CAR was detected by him after the merger and as such the results for the acquiring firms are consistent with the said hypothesis.

Comparing Results of the Acquiring and the Acquired Firms

The results are consistent with the hypothesis that the acquired firms earn abnormal returns in the last 7 months before the merger,

but the CAR of the acquiring firm before the merger does not follow a similar pattern. The time pattern behaviour of the cumulative average residuals of the acquiring firms is different from that of the acquired firms. Further the average percentage of the negative residuals of acquired firm is 44.5 percent while this average of the acquiring firms is 53.1 percent during the time period of 7 months before the merger.

As per Mandelker's test there was no increase in the CAR of acquiring firms during the period (- 7 to - 1). On the otherhand the CAR of the acquired firms increased by 13.1 percent during 7 months before the merger. So these results are consistent with his research work.

Interpretation of Results and some Alternative Hypothesis

If managers of a firm do not work efficiently, the stock prices of the firm will fall and the firm might be acquired by other firms and in this way the incumbent management of the acquired firm may be replaced and this would be a source of gain for the acquired entity. This result is therefore, consistent with the hypothesis that mergers are a mechanism by which the market system replaces incompetent management.

The information regarding inefficient management of the firm to be acquired may be reflected in its stock prices at some point in the past. Afterwards its stockholders should earn normal returns. The information regarding inefficient management is revealed in different months and its effect on stock prices is not detected in any specific month. People can understand the inefficiency of the firm and the expected possibility of the replacement of the in-

efficient management from the various stages of stock prices. But in incumbentmanagement can resist an acquisition and it is very difficult to acquire a firm if its management resists forcefully.

In a competitive acquisition market if the firms to be acquired try to improve the operations, then the stock price will be increased as a result of competition among the potential acquiring firms. Consequent upon the rise the price of the acquired firms, the acquiring firm should earn a normal rate of return. But if only one firm can improve its operation then any abnormal profits will be shared equally between the two constituent firms. However, the stockholders of the firm to be acquired may gain in both cases.

Summary and Conclusions of the Empirical Results of G. Mandelker

Two basic assumptions were tested by G. Mandelker, one is the perfectly competitive acquisitions market hypothesis and other is the efficient capital market hypothesis on the issue of the profitability for stockholders of the acquiring and the acquired firms.

The Perfectly Competitive Acquisitions Market hypothesis

Various market imperfections have been assumed in the literature on mergers and conclusions have been drawn that acquiring firms and their stockholders gain abnormal returns from acquisitions. But in most of the empirical studies it was proved that acquisitions sustain losses for the acquiring firms and their stockholders after the merger.

The findings of this study are consistent with the hypothesis that the acquiring firms appear to operate in a competitive market so that the prices they pay for the acquired firm's stock result in

normal returns on the acquisitions. The acquiring firms earn a rate of return equal to other investments or production activities of similar risk. The average residuals for the acquiring firms are generally positive, but not statistically significant. These findings controverts the argument that acquiring firms overpay and lose from mergers.

However, the stockholders of the acquired firms received positive cumulative average residuals, indicating that they earned abnormal gains from the mergers. This suggests that the acquired firms may have had unique resources whose values are realized to a greater degree by mergers. So the results are consistent with economic gains associated with mergers and with economic rent for the acquiring firms.

The Efficient Capital Markets Hypothesis

With respect to the hypothesis of efficient capital markets, Mandelker's findings are consistent with the view that the stock market operates efficiently with respect to information on mergers. The price movements which take place at the time of the merger announcement and even before reflect all valuable information about the merger preceeding the effective date of the transaction. The stock prices of the constituent firms at the time of the merger already reflect the economic gains expected from the acquisition. The stock prices of the merged firms do not undergo postmerger ad-justments. While significant changes in betas β were observed, the rates of return adjusted efficiently to the changes in risk.

The results of this study are therefore   not consistent with some of the traditional hypotheses already described. Stockholders were apparently not misled by accounting manipulations in mergers or

by the artificial increase in earnings per share resulting from the differential price earnings ratio game played by acquiring firms. The 'growth maximization' hypothesis was not confirmed, which implies losses to the acquiring stockholders. But the finding of the positive average residuals for the acquiring firms is inconsistent with the managerialism hypothesis.

2.3 PAUL J. HALPERN'S STUDY[2]

Halpern has carried out studies using an efficient capital market framework to measure the profitability of mergers in the United States. He found that mergers resulted in increases in share prices and hence shareholders wealth and that these increases were evenly split between the owners of the acquired firm and the acquiring firm. He tried to directly measure buyer and seller premiums in mergers.

Halpern recognised the need for a base date at which the stock price does not reflect merger information in order to measure the gains. He suggested the base date should be sometime before the announcement date such that no merger information is reflected in security prices.

Some portion of the change in the market values of the merging companies is due to the general market influence. Since mergers tend to occur in rising markets, neglecting the fluctuations ex- plained by general market movements will overestimate the measured gains; conversely, when the general market falls, the measured gains will be underestimated.

His work does not deal directly with the two competing explanations that have been offered for merger behaviour: manage-

ment utility maximization and stockholders wealth maximization. Under
the management utility maximization hypothesis there need be no
overall economic gain from the merger, on the otherhand the wealth
maximization hypothesis should lead to positive expected and realized
total gains. The latter hypothesis does not have any implications
for how this total gain should be divided.

The investment community has long since recognized that
exsistence of a permium to acquired companies. For the empirical
work the premium was defined as the difference between the stock
price of the selling company at the date of the merger and the price
of the same company measured at some point before the merger.

Helpern's study estimated the gains and premiums to all
companies in the merger. He did not distinguish between companies
on the basis of buyers and sellers but distinguished on the basis of
the relative sizes of the companies in the merger, measured by the
value of their equity at the base date and in this way be compared
the gains for the larger and smaller companies in the merger.

The basic data stating the merger date, the security prices of
the companies at the merger date, the negotiated exchange ratio and
a historical series of security prices and dividends regarding
companies involved in successful mergers for the period January 1950
- July 1965 were collected from the main file and price relative file
of the University of Chicago Centre for Research in Security Prices
(CRSP). The exchange terms and the merger date security prices were
checked in Moody's Industrial Manual, 1950 - 65 and in the Wall
Stree Journal respectively. Other data regarding actual number of
shares exchanged and the number of shares outstanding were obtained
from the listing statements filed at the New York Stock Exchange
(NYSE).

Analystically, a merger can be treated as an income producing asset. If there is no interaction between the returns from purchased assets and existing assets, the increment in shareholder wealth depend on the price paid for the asset relative to the discounted present value of the asset's cashflow.

When information regarding both the merger and the exchange terms becomes available to investors, the security prices of the companies involved in the merger will react to reflect the expected profitability. The expected net present value of the merger or the gain from the merger as a result of the change in the value of the equity for the buying company measured from some base date, may be positive or negative. The change in the value of the equity for the selling company is the difference between the price actually paid for the company and the value of the equity without the merger. This change, e.g. gain (or loss), indicates the price paid to the selling companies shareholders to obtain their agreement to the merger.

Halpern was interested in measuring the economic gain to the merger that would result from the combination of formerly independent companies. The absolute size of this economic gain is determined by the economic benefits which would result from the merger. Diversification is one variable that some have considered important in determining the size of the economic gain. But in fact total gain depends on the economic or 'efficiency' benefits of the merger and not on the resulting risk reduction due to diversification.

If the stock market is efficient, the sum of the changes in the values of the equity of the companies in the merger will be the market's estimate of the expected economic gain of the merger. The best estimate of the values of the equity of the merging companies

before any information of the merger is reflected in the market
price.

Halpern subtracted the gain to the shares of the 'seller'
already held by the 'buyer' in order to prevent double counting of
the gain due to the presence of prior interest.

One of the elements of the Halpern analysis is calculating
adjusted security prices.

To determine the base date he employed the 'residual technique'
developed by Fama, Fisher, Jensen and Roll. Since mergers are
unusual events we would expect the estimated residuals to display
unusual behaviour during the merger adjustment period. A base date
can then be chosen as that date before which 'abnormal' residuals
were observed. Because of extraneous influences, cross sectional
residuals (over merging firms) were calculated overtime relative to
the announcement date.

Halpern's analysis indicates that on the average, merger in-
formation is available for 7 months before the announcement date.
From 23 months until the 8 months prior to announcements, the
cumulative average residuals are randomly increasing and decreasing.
From the 7th month onward they increase steadily. The values for the
average residuals indicates a series of positive average residuals
from 23 to 18 months, then some positive and negative residuals
until month 7, when there are very large positive residuals. From
the month 7 to the announcement date the residuals are all positive
and from month 2 to 0 they are very large and positive.

After calculating the gains to 'buyers' and 'sellers' the firms
were classified as 'larger' or 'smaller' on the basis of their equity
value at the base date. Halpern finds that the mean gain prior to

dividend adjustment of larger firms exceeded those of smaller firms by a factor of 4, the median gain to the larger companies is approximately 1.5 times as large. The proportions of gains that were negative for both sets of companies were significantly smaller than expected by chance.

After the dividend adjustment the gains were smaller for both firm types and approximately equal in absolute amount. Adjustment also had a tendency to make negative gains less negative and at times turned negative 'gains' into positive ones.

Subsequently Halpern calcuates price premiums, the gain relative to a base price, for both acquiring and acquired firms. While the premium accruing to smaller firms was significantly greater than zero (at 5%), the premium accruing to larger firms was not. His results suggest synergy or improvement in the performance of the smaller firms which is reflected in prices paid by acquirers.

2.4 J.R. FRANKS, J.E. BROYLES, M.J. HECHT'S STUDY[3]

In the U.K., Franks, Broyles and Hecht (1977), using a similar method to Mandelker (1974), estimated the gain of shareholders arising from 71 mergers in the Breweries and Distilleries industry over the period 1955 - 72. They also reviewed the efficiency of the London capital market on the basis of their study their findings may be summarised briefly as follows.

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

2. During the same period prior to a merger shareholders in acquiring companies appear to have experienced small positive

abnormal returns, which were not sustained.

3. Gains on combined shareholding in acquiring and acquired companies appear to reflect net gains from merging within the industry.

4. Evidence suggests that the market began to anticipate mergers at least three months on average before mergers were announced.

Mandelker listed five major hypotheses. Franks et al. tested two of these. The perfectly competitive acquisitions market hypothesis states that competition among acquiring firms will cause the value of expected benefits from merging to be paid to the shareholders of the firm being acquired. They also tested the efficient capital markets hypothesis, that share prices fully incorporate all available information. Thus the value of expected benefits from merging would be reflected in share prices when the merger is first anticipated.

The merger studies of Halpern and Mandelker employed adaptions of the original Fama, Fisher, Jenson and Roll method of measuring abnormal stock market returns in response to public announcements. But Franks, Broyles and Hecht made their own adjustment to the original FFJR methodology to accommodate the characteristics of their data. FFJR's technique involves a cross sectional analysis of the residuals of the 'market model' regression equation.

Considering the results are sensitive to the intervals of time chosen, as per above technique, they devised an alternative simple test for validation purposes. They regressed the log price relative of each individual security on market indices for all available data for the entire period. Thereafter they regressed the same data again but excluded the price relatives for any period where the residuals for the period was more than, for example, two standard deviations

from the mean of the distribution of the residuals of the first regression. This method reflected a recognition of the fact that the residuals may be abnormal in periods other than the one chosen around the merger date.

Their sample included 94 mergers effected in different years (1955 - 1972). For want of sufficient information about 24 of the mergers, their sample was reduced to 70 mergers. The mergers which were concentrated particularly in three years from 1960 to 1962 had a number of potential problems. One problem regarding double counting which might occur when a company acquires two other companies during a particular calender period i.e. acquiror's residuals are aggregated twice for the period. They have devised a rule to avoid the problem. Still there is little difference to the combined CAR's even after making adjustments. They also eliminated the industry effect by introducing an industry index as an additional explanatory variable in the market model.

The acquiror's residuals may reflect any abnormal returns while some companies held premerger equity interests to the acquiree's shareholders. While pre-merger interests are still unknown and un-anticipated by the market, they do not affect the acquiror's CAR's but they affect acquriror's CAR's when the pre-merger interests are known and anticipated. While the acquiror is also the acquiree, the merging benefits can be double counted by aggregating the CAR of acquiror's and acquirees to the extent of acquiror's pre-merger interest. They used the Financial Times Actuaries Index (FTA) from 1962 onward while they used the Financial Times 30 Index (FT30) prior to that date for the London Stock Exchange published index.

As per their study the CAR's displayed a strong upward bias, or 'industry effect' resulting from their sampling bias in favour of only those firms in the Breweries and Distilleries sector. In order to eliminate the industry effect from the residuals they added an industry component to the right handside of the market model, which is as follows:

$$\log_e R_{it} = a_i + \beta_i \log_e R_{mt} + \gamma_i \log_e R_{1t} + u_{it}$$

Where the Rit are price relatives for the FT Breweries and Distilleries Industry Index measured on the same days as R_{mt} and adjusted for elapsed time. Residuals are thus computed from

$$\hat{u}_{it} = \log_e R_{it} - (\hat{a}_i + \hat{\beta}_i \log_e R_{mt} + \hat{\gamma}_i \log_e R_{1t})$$

The rest of the procedure remains unaltered.

The CAR's of the acquirees fall .10 between months t = - 40 and t = - 15 while during the same period the acquiror's CAR's are virtually unchanged. So it reveals that acquirees are relatively less profitable than acquirors during this period. Starting at the time t = - 15 the acquirees CAR's begin to rise .056 by t = - 4 while acquiror's CAR's remain curiously unchanged. During this period, some acquirees share prices may have been influenced favourably by pre-merger purchases of shares by acquirors. If such purchases were unknown to the rest of the market, the acquiror's CAR's need not have been affected during this period.

Acquirees CAR rise more quickly from time t = -4, rise a further .204 by the announcement date t = 0 and .233 (equivalent to 26%) by t = 1 the approximate offer date. During the same period the

acquiror's CAR's rise .035. It appears from the pattern of the CAR's for acquirees and acquirors that the market is beginning to anticipate mergers on average at least 3 months prior to the announcement date. But the apparent gains to acquiror's shareholders disappeared altogether subsequently after the merger which indicates that the earlier average gains were not significant and that acquiror's shareholders did not enjoy average gains from mergers in this industry. In fact one could argue that there might have been losses exclusive pre-merger interests.

The apparent gain in acquiror's CAR's at the time of the merger could be explained by unduly optimistic forecasts of future earnings at the time of a takeover. The subsequent readjustment in the form of lower CAR's would be consistent with the results of Kaplan and Roll. As the readjustment is not significat in relation to London stock exchange transactions costs, no contradiction to the efficient capital market hypothesis is suggested by them.

As per their calculations of the weighted cumulative average residuals of acquirees and acquirors, acquirees were roughly three times smaller in market value of equity than acquirors. At the time of calculating the combined CAR's during the period $t = -4$ to $t = +1$ a net gain of .10 (.095 - (- .005)) was experienced.

There are, however, some differences between the results of the United States and the U.K. The U.K. results suggest the most mergers were anticipated less than 3 months prior to the announcement date compared with 8 months prior to merging in the United States. Franks, Broyls, and Hecht obtained similar results to Mandelker when they employed merger dates in place of announcement dates. They maintain that the announcement is the more relevant point of re-

ference.

The U.K. acquirees were making abnormal losses prior to merging. The abnormal gains of the acquirors disappeared subsequent to the takeover. All in all, it looks as though there have been net gains to merging but most if not all those gains accrued to the acquirees shareholders. There is no evidence from market returns that the acquirers lost money. The evidence appears consistent with the efficdent capital market hypothesis that capital market prices fully reflect relevant information.

2.5 PETER DODD'S STUDY[4]

Like Halpern, Peter Dodd uses the announcement date rather than the completion of the merger as the 'event'. However, his studies indicate that there is leakage of information even before the public announcement date. Since Dodd seeks to point out the importance of the role of the announcement date. He uses daily returns rather than monthly data.

He carried out research for all completed mergers and all proposals that were later cancelled. These proposals were announced in the Wall Street Journal, Moody's Industrial Manual and Standard and Poor's Corporation Records. The sample consists of acquisition proposals which are initially announced in the form of a merger.

In all 151 merger proposals were studied, of these 71 were completed 80 were cancelled by either target or bidder management. Stock returns for all these firms were available and studied. The date of the first public announcement for all 151 merger proposals was first mentioned in the Wall Street Journal and the first public announcement date was collected accordingly. He collected separately

the date of public announcement of the final approval of the
completed merger and the date of public announcement of the termina-
tion of negotiations for cancelled firms.

Dodd calculated the average $(\overline{PE})$ and cumulative average (CPE)
prediction errors for 151 sample firms for 40 days before and after
the first public announcement of a merger proposal. The results of
the merger proposal over day 0 and day - 1 was significanlty positive
for the stockholders of target firms. The average prediction errors
are 4.30 percent and 8.74 percent on day 0 and on day - 1
respectively.

In order to find out whether the average prediction errors
were significantly different from zero, the following test was
calculated:

$$t = \overline{PE}_t / \sigma_{PE}$$

where $\overline{PE}_t$ is the average prediction error for day τ, and

$$\sigma_{PE} = [\frac{1}{100} \sum_{\substack{T = -50 \\ T \neq \tau}}^{+50} (\overline{PE}_T - APE)^2]^{1/2}$$

with

$$APE = \sum_{\substack{T = 50 \\ T \neq \tau}}^{+50} PE_T / 100$$

The t statistic for the abnormal return to target shares on day 0 is
11.71 and on day - 1 is 23.80.

The market reaction to the announcement is represented by the
2 day abnormal return at days - 1 and 0, because some reported
announcements are released to the press during the day before (- 1)
and other announcements are relased on day 0.

In contrast to the target firms, the market reaction was significantly negative for bidder firms.

He calculated the abnormal returns to stockholders of both completed and the cancelled firms and found that the stockholders earned large positive abnormal returns e.g. the average prediction error was 3.41 percent at day 0 and 10 percent at day - 1 (for targets in completed merger proposals) and 5.01 percent at day 0 and 7.72 percent at day - 1 (for the cancelled proposals) around the first public announcement date.

In both completed and cancelled merger proposals the abnormal returns to shareholders of bidding firms were different from those earned by stockholders of target firms.

For both subsamples of completed and cancelled merger proposals there are at least two announcement dates. At the date of the first public announcement of the merger proposals the outcome of the proposal is uncertain and is not resolved but it is finally resolved at the second date.

The final approval of the merger by stockholders has little impact on the value of the shares of either the target or bidder firms. The average prediction errors for both samples as per his calculations at day 0 is 0.08 percent for targets and - 0.23 percent for bidders, on the otherhand at day - 1 it is 0.68 percent for targets and - 0.06 percent for bidders. It appears that most of the uncertainty as to the completion of the merger has been decided before the final stockholders vote but the same occurs at the time of negotiations by management.

As per his sample stockholders of target firms earned a negative abnormal return of - 4.52 percent on the day of publication

of the termination announcement in the Wall Street Journal e.g. day 0
and - 4.16 percent on day - 1.

In contrast to the target firms there is proof of negligible
positive abnormal returns to stockholders of bidder firms in
cancelled mergers. The average prediction error is 0.18 percent at
day 0 and 1.06 percent at day - 1.

In his study cancelled merger proposals have also been classified
on the basis of whether target or bidder management is responsible
for the termination of negotiation.

As per his . study there is a smaller negative market reaction
to termination by target management in contrast to the results for the
overall sample of 80 cancelled merger proposals. The cumulative
average prediction error is 21.13 percent over days - 40 through - 2.
The average prediction errors at days - 1 and 0 are - 1.63 percent and
- 3.94 percent, with t statistics of - 3.75 and - 9.06 respectively.

For the 26 firms where incumbent management veto the proposals,
however, the negative abnormal returns at the time of announcement
of the termination do not entirely eliminate the positive abnormal
returns earned at the time of first public announcement of the
proposal. The cumulative prediction error as per his calculation
after the termination announcement at day 0 is 15.56 percent. In
contrast, the cumulative prediction error at day 0 for the re-
maining 54 firms is - 4.21 percent. This suggests that the overall
net effect of the cancelled merger proposals is different for the
two classes of terminations.

Dodd concludes that the gains from mergers go to target firms
and not to bidders. Bidder CAR's for the period 10 days before the
proposal to 10 days after approval are negative - 7.22 percent, the

bidder CAR is also negative for cancelled mergers regardless of which firm terminates negotiations.

Target shareholders earn large significant positive returns at the proposal announcement 13.43 percent. For completed mergers the CAR from 10 days before the proposal to 10 days after approval is 33.96 percent. For cancelled mergers the CAR from 10 days before the proposal to 10 days after concellation is 3.68 percent for the entire 80 cancellations. For target initiated cancellations, the CAR is 10.95 percent. For bidder cancellations the target CAR over the same period is 0.18%; thereafter returns revert to their prepro-posal level. Dodd observes that since the net effect of target cancelled mergers is positive, it cannot be concluded that managers are necessarily acting against the best interests of shareholders when they veto a proposed merger.

2.6 M. FIRTH'S STUDY[5]

Firth's research used an efficient market framework to examine the profitability of takeovers and mergers in Britain and the United States. The efficient market theory states that there are many competing experts in the stock market and they adjust share prices both speedily and 'correctly' to new items of information relating to a security in an unbiased manner. Thus the stock market will immediately incorporate the 'information' contained in a takeover announcement in the share prices of the securities concerned; the share prices then 'correctly' reflect any economic gains or losses of the takeover, given the total information available at that date. This gain-loss will thenbe splitbetween the shareholders of the acquired firm and the shareholders of the acquiring company.

Firth's technique was to estimate the base date then calculate

the monthly market model residuals and cumulative residuals of securities' returns. When the residuals depart significantly from their market model relationship this indicates that some company specific information (i.e. takeover rumour) is influencing the price. He took the base date to be last month in which the residuals and the cumulative residuals are considered to be 'normal'. The cumulative residuals from the base date to 1 month after the bid announcement date represent the market adjusted gains- losses of the takeover earned by the acquired firms shareholders and the acquiring company's shareholders. The residual for a given security is the difference between the actual returns on that security and those expected.

Firth's research covers data for companies in the United Kingdom for the period 1972 - 74. The residuals for the acquired companies were slightly negative in the 36 month period up to 12 months before the bid (- 36, - 12) which is consistent with that found by Mandelker (1974) in the United States. In this study the residuals of acquired firms in months - 12 to - 2 behaved pretty much in the manner expected. In month - 1 the residuals jumped sharply with over 80 percent of the population showing abnormal gains. This residuals reflects leakage of bid news. The CAR reached 38 percent for acquired firms within two months of the bid announcement. For the acquiring firms, the CAR were slightly positive before the announcement, but turned to a negative 4 to 5 percent within 24 months of the tender offer.

In order to avoid double counting of the gain due to the merger, the gain to the shares of the acquired firm already held by the acquiring firm was deducted from the acquired firms gain. The

results of the study showed that on average there were no gains
associated with takeovers and infact there was a very small loss
e.g. £- 9.1 million (£- 664 acquirer's loss + £655.6 acquired firms
gain). This contrasts with the earlier hypothesis study in the
United States which showed that the total gain was split approximately
evenly between the acquired and the acquiring firms. It is difficult
to hypothesise why there should be such a difference. There are two
factors which may have some influence for such difference. Firstly
Firth observes that the relative incidence of mergers in the United
Kingdom has been higher than in the United States and suggests that
the acquired firms had the benefit of a stronger seller's market
for mergers. A second reason may be due to the fact that the
American research involved earliertime period starting from 1950 to
1960 whereas Firth's data covered only 1972 - 74. If the
American research had looked at the latest merger data they may find
similar results to those in the United Kingdom.

In summary the research has shown that the stock market is
'efficient' in respect of reacting to takeover information and that,
although takeover may maximize management's welfare, they are
detrimental to the acquiring firm's shareholders.

2.7 DONALD R. KUMMER AND J. RONALD HOFFMEISTER'S STUDY[6]

Kummers and Hoffmeister's research has three purposes: first
he examined the stock returns of target firms prior to the announce-
ment of a tender offer, second he evaluated tender offers according
to their success or failure and resistance or non resistance by
incumbent management of the target firm. Finally he investigated the
returns to bidding firms prior and subsequent to the tender offer

announcement.

The valuation consequences of corporate tender offers can be hypothesized as follows:

1) Target firms are expected to have abnormally low returns prior to takeover becuase of the managerial inefficiency as well as other possible reasons;

2) More specifically, those firms involved in target takeovers faced with management resistance will display poorer performance (prior to takeover) relative to friendly takeovers;

3) The bid premium required for unfriendly takovers will be greater than for friendly takeovers

4) Bidding firms will increase their shareholders wealth in the event of takeover.

They studied 88 New York Stock Exchange firms for whom cash tender offers were made during the period 1956 - 1974. Their overall sample was classified in to three groups: 44 passive successful takeovers, where the management of the target firm expressed agreement, neutrality, or no public opinion about the proposed takeover. 15 resisted unsuccessful takeovers representing cases in which tender offers were resisted by management, the tender offer failed and the firms had no subsequent tender offers announcement up to 10 months after the first tender offer (i.e. month 0); and 6 resisted successful takeovers representing firms that were taken over in spite of resistance by the incumbent management.

The cumulative abnormal returns in all categories of target firms were negative for the period (- 40, - 4) months. These negative results were statistically significant for all categories except the passive successful targets. The negative residuals were

large, ranging from 10 to 20 percent. During the 4 months before
the tender offer announcement for each category, the shareholders
of target firms received gains of 6 percent that were statistically
significant. During the month of the announcement of the tender
offer (0 month), the average abnormal return ranged from 16 to 20%
for the three categories of target firms. These returns were all
highly significant from a statistical view point.

The cumulative average residuals for bidder firms rose to about
10 percent during the period (- 28, - 11) months. The gain up to
17% was achieved by shareholders of bidder firms during the period
(- 10; - 1) month. An additional 5% abnormal gain (e.g. 22%) was
recived by the shareholders during the month in which the tender
offer was announced (0 month).

2.8 PAUL ASQUITH'S STUDY[7]

More recently, Asquith (1983) has analysed the returns of the
sample of successful mergers consisting of 211 target firms and 196
bidding firms and the sample of unsuccessful merger bids consisting
of 91 target firms and 89 bidding firms in the United States during
the period 1962 - 1976. Asquith's results which are summarized in
the following Table, evidence a complex reaction by the capital
market to the bidding process.

ABNORMAL RETURNS FOR FIRMS ENGAGED IN MERGER BIDS (%)

	Pre-press period[a]	press date[b]	interim period[c]	outcome dated[d]	Post outcome period[e]
211 Successful target firms	-14.1[f]	+6.2[f]	+8.0[f]	+1.3[f]	Not available
91 Unsuccesful target firms	-10.5[f]	+7.0[f]	-8.1[f]	-6.4[f]	-8.7[f]

	Pre-press period[a]	Press date[b]	Interim period[c]	Outcome date[d]	Post outcome period[e]
126 Successful bidding firms	+14.3[f]	+0.2	-0.5	+0.2	-7.2[f]
89 Unsuccessful bidding firms	+ 2.2	+0.5	-6.2[f]	-0.2	-9.6[f]

[a]The pre-press period is the period from 480 days before the announcement of a merger bid until 20 days before. The abnormal returns given are the CER for the entire period.

[b]Press day is the day that news of the merger bid first appears in the Wall Street Journal.

[c]Interim period is the period from one day after the press day until two days before the outcome day. The abnormal returns given are the CER for the entire period.

[d]Outcome day is the day that the outcome of a merger bid is reported in the Wall Street Journal.

[e]The post outcome period is the period from one day after the outcome day until 240 days after the outcome day.
The abnormal returns given are the CER for the entire period.

[f]The abnormal return is significantly different from 0 at the 1 percent level.

The table shows abnormal returns for each group for five periods around the date of mergers, calculated in the sameway as Mandelker's results.

The first or earliest period is the pre-press period defined as the period from $t = -480$ days until $t = -20$ days before the press date. The table shows that in the pre-press period the abnormal returns were significantly negative for the two groups of target firms and were significantly positive for the two groups of un-

successful bidding firms. Although all target firms realize negative average excess returns in the period prior to the press date, the CER's (Cumulative Excess Returns) for successful target firms are more negative than the CER's for unsuccessful target firms. On the otherhand all bidding firms realize positive average excess returns in the period prior to the press date, the CER's for successful bidding firms are more positive than the CER's for unsuccessful bidding firms. This evidence lends further support to the view that it is the strong firms that take over the weak.

On the press date, the day that news of merger bid first appears in the Wall Street Journal, all four groups showed positive abnormal returns but only the successful and unsuccessful target firms showed positive and significant average excess returns, + 6.2 percent and + 7.00 percent respectively, suggesting that the market is uncertain at the press date as to whether a bid will be successful.

The next period, the interim period, begins one day after the press day and finishes two days before the 'outcome date', when the outcome of the merger is reported in the Wall Street Journal. In the interim period the abnormal return rises for successful target firms and falls negative for unsuccessful target firms. This means that for successful target firms the probability of merger increases from the press date until the merger date. For unsuccessful target firms the probability of merger increases at the press date but then begins to decrease soon afterwards and continues to decrease until the bid is abandoned. The abnormal returns are significantly negative for successful and unsuccessful bidding firms during this period. During the interim period the average cumulative excess returns for successful bidding firms is small, - 0.46 percent, and

insignificant. Thus, there are no abnormal returns to the stockholders of successful bidding firms from the announcement of a merger bid until its consummation. The interim period for successful bidding firms, however, produces a surprise. The interim abnormal return for unsuccessful acquiring firm is - 6.19 percent and this decrease is significant. Since there are no significant excess returns for un-successful bidding firms at either the press or outcome day , why are there significant negative excess returns during the interim period ? One possible explanation is that the bid talks during the interim period revealed further information about poor profit propsects and reduced the chances of the bid being persued successfully.

On the outcome date the abnormal returns for unsuccessful target firms are negative and significant. Finally, in the post-outcome period, begining one day after the outcome date until 240 days after the outcome dates all groups except further successful target firms showed significantly negative abnormal returns. The results in the last column are surprising becuase they would seem to indicate that all the parties to a merger (except for successfully acquired companies) lose money after the outcome of a merger is announced. However, these results are very difficult to explain. For if they were repeated in the future, they would suggest that investors should sell the shares of acquiring companies on the announcement of a merger. Such conclusions is not consistent with the concept of an efficient stock market.

Results of all three share price studies suggest that successful target firms earn significant abnormal returns as a result of the bid. Successful acquiring firms, before the outcome of the bid, may make small gains as a result of the merger. In view of this evidence, the

conclusion may be drawn that there have been net gains to mergers for stockholders. In fact, the stockholders of acquired firms gain, and the stockholders of acquiring firms either gain or do not lose. As per Asquith's result the stockholders of acquiring firms earn significant abnormal losses after the outcome of the bid is known. One possible explanation is that these mergers were expected to be profitable when they were announced. However, the anticipated merger benefits were not fully realized and therefore led to abnormal losses.

2.9 GAINS FROM MERGER, AND THE DISTRIBUTION OF GAINS: A summary

While the numerous studies reviewed are not always in complete agreement, some generalizations can be formulated on the basis of the dominant patterns observed. An interesting empirical question is: How profitable have actual mergers been? Now we will review the evidence from some of the many studies relating to United States and European mergers that attempt to answer four questions.

1. Do stock markets anticipate mergers before they are announced by the merging companies?

2. Is it possible to make abnormal returns by trading in the commonstocks of merging companies after the announcement has been made?

3. Are mergers profitable to the stockholders of the acquiring and acquired companies?

4. How are merger gains divided between the two sets of stockholders? What determines which group gains?

The following summarises some of the studies that have provided evidence concerning these questions.

Mandelker (1974) examined 252 mergers in the United States and estimated the resulting changes in shareholder returns. He calculated the incremental returns or losses for companies involved in mergers by subtracting from the returns of each company that portion estimated to be attributable to movements in the market rather than to the merger. He calculated incremental returns or losses over a period of forty months prior to the merger and added them cumulatively. Mandelker found that the CAR was slightly negative during the period (- 35 to - 7). At the time of calculatting the CAR of the acquired firm it showed a sudden rise of about 14 percent during the last seven months before the merger as a result of movement of share price of the companies with the market. So the shareholders of the acquired firm earned abnormal gains up to the announcement date (month 0).

Similarly, Mandelker calculated the CAR of - 241 acquiring firm from 40 months before the merger to 40 months after the merger. The CAR increased during the 40 months prior to the merger by 5.1 percent and decreased during the next 40 months by 1.7 percent.

Final conclusions have been drawn from Mandelker's study. There appear to be net gains to mergers because the stockholders of the acquired firms received positive cumulative abnormal returns. On the otherhand the average residuals for the acquiring firms are generally positive, but not statistically significant i.e. at least not lost, on average. 'Not lost' suggests that the acquiring firms have obtained the risk adjusted required rate of return on their investment in acquisitions for Mandelker removed market movement and adjusted for the effects of any differences in systematic risk between the acquirer and the market. A second conclusion is that

the market does appear to anticipate mergers prior to formal announcement. Finally, at least for part of the period of forty months prior to merging, the stockholders of acquired companies incurred losses on their investment and stockholders of acquiring companies gained. One possible conclusion is that acquiring companies were more profitable than acquired companies.

Halpern[2] carried out studies using an efficient capital market frame work to measure the profitability of mergers in the United States. He found mergers resulted in increases in share prices and hence shareholders wealth and that these increases were evenly split between the owners of the acquired firm and the acquiring firm. This suggests that the benefits from the merger were unique and could only have been achieved by those two particular firms combining. If for example the acquired firm was obviously under valued in the stock market then we would expect all the gains to go to the acquired firms shareholders as the various potential acquiring firms would compete amongst themselves until all the profit potential disappeared.

Mandelker (1974)[1] also found that mergers resulted in an increase in total shareholder wealth although he found that most of this accrued to the acquired firm's owners and only a small amount to the acquiring firm. These studies lend support to the profit maximization theory of the firm, that is that takeovers and mergers lead to greater investor wealth.

Mandelker and Halpern have shown that positive residual returns occur for acquired firms just prior to the announcement date of a merger. Halpern for example, found that the proportion of positive residuals climbed from 50 percent two months before the announcement

date, to 58 percent one month prior, to 62 percent in the month of announcement (page 567).

While Mandelker and Halpern's examination focused on the overall returns to companies involved in mergers, their use of monthly trading data obscured much of the information concerning abnormal returns occuring just prior to the announcement date. For example, all abnormal returns that occur prior to the announcement date but during the same month as the announcement date would go unnoticed. It is for this reason that the use of daily returns becomes critical to the accurate measurement of any abnormal price movement that might occur prior to the merger announcement date.

Dodd (1980) has taken into consideration successful as well as unsuccessful merger attempts. He computes daily market model forecasting errors and averages them cross-sectionally for given relative dates to obtain average forecasting errors. The results are interesting. He proved that stockholders of acquired firms earned large positive abnormal returns, in both the case in which the merger is subsequently cancelled and when it is completed, around the first public announcement date. In the case of acquiring firms the announcement period is marked by small, but significantly negative abnormal returns.

Dodd also finds that acquiring firms sheares earn sub-normal returns on the day when acquired firm shareholders approve the merger. In the case of cancelled mergers the shareholders of acquiring firms earn positive abnormal returns on the day when negotiations fail. These results tend to reject the investment and improved management hypothesis.

Paul Asquith (1983)[7] recently examined the results for 587

successful and unsuccessful mergers in the United States during the period of 1962 - 76. Asquith divided his samples of companies into four groups. He has shown abnormal returns for each group for five periods around the date of merger.

Some of his results conflict with Dodd's using the CRSP daily returns file. Asquith reports insignificantly positive abnormal returns to acquiring firms on the first announcement date. On the day when an unsuccessful merger attempt is terminated acquiring firms earn insignificantly negative abnormal returns. If the merger attempt is successfully concluded acquiring firms earn insignificantly positive abnormal returns on the outcome date.

Asquith (1983) shows estimates of abnormal returns during the interim period. In the interim period cumulative abnormal returns are negative for acquiring firms. Both unsuccessful target and bidding firms earn significantly negative returns during the interim period. Over the entire period starting with the first announcement date and continuing through the outcome date cumulative abnormal returns to acquiring firms are negative whether or not the merger succeeds. Abnormal returns are also significantly negative to acquiring firms during the post outcome period.

Asquith's study provides evidence that the shareholders of acquired firms sustain losses during the period well before a merger. On the otherhand shareholders of acquiring firms earn positive abnormal returns. He finds a significant positive performance trend for acquired firms prior to the merger. Evidence on acquiring firms for this period is weak. It appears that the stockholders of acquired firms gain, and the stockholders of acquiring firms either gain or do not lose.

As per Asquith's result the stockholders of acquiring firms
sustain significant abnormal losses after the outcome of the bid is
known. One possible conclusion is that these mergers were expected
to be profitable when they were announced. However, the expected
gains from the merger were not fully obtained and therefore led to
abnormal losses.

Dodd's study indicated that shareholders of acquiring firms
earn a small but significantly negative return (significantly sub-
normal returns) on the days of published announcements. Asquith
finds that acquiring firms earn negative cumulative abnormal returns
over the period from first announcement through the merger outcome
date. So the conclusion is drawn from the results of Dodd and
Asquith that acquiring firms suffer losses (on the days of
published announcements).

The results of Ellert (1976)[8] are inconsistent with Mandelker's
results. Ellert finds the bidding firms realize significant positive
abnormal returns from mergers. Ellert also uses the behaviour of
the common stock returns of acquired firms to infer competition in
the acquisition market. He observes particularly that the gain
earned by the acquired firms over the seven months preceding the
merger are offset by prior abnormal losses. His conclusion is that
these results are consistent with competition in the acquisitions
market as the acquired firms receive 'the value of the asset bases
under more efficient management'. The result of Ellert is consistent
with the payment of premiums by bidding firms, but does not imply
a competitive acquisitions market. He provides this argument on the
ground that a market does not limit the premium which would be equal
to the replacement cost of the assets of the acquired firm.

Ajit Singh (1971)[9] compared the combined pre-merger profitability with the post merger rate of return adjusted for the average rate of return earned by the firms in the same industry and in the same year. Singh found that two thirds of a sample of 77 companies over the period 1955 - 60, which acquired other companies in the same industry, experienced lower profits in the year of the merger than in earlier years. In the first and second year after the merger year about half of the companies for the 56 and 35 firms in the sample in each year respectively had lower profitability, while three-quarters had lower profitability in the third year before the merger. On the basis of this evidence Singh concludes that profitability declined in at least half the cases after the merger. He did not include those firms who were frequent acquirers of other firms.

Utton (1974)[10] selected a sample of 39 frequent acquirers in the period 1961 - 65 which subsequently expanded mainly through internal growth in the period 1966 - 70. For both the periods, the average profitability of the sample was lower than that of control group. The author concluded, firstly, that the companies heavily dependent on external growth had a lower profitability in a subsequent period of newily internal expansion and second, that profitability could be sustained more readily in companies which exhibited a slower growth rate but relied on internal expansion rather than acquisition (external axpansion).

Both of the above studies suffer from several limitations. Both studies used small and limited samples of the total merger activity. Moreover, they are not random samples of the total population but firms selected according to certain criteria. Thus Singh (1971) concentrated on companies merging horizontally within the same

industry, excluding most vertical or diversifying mergers, while Utton (1974) looked at companies which actively merged in one period, but not in the next. Secondly, the inclusion of premiums in excess of book values of acquired firm's assets (which appear subsequently as 'good will' in acquirer's accounts) may have artificially raised the value of post merger assets and thus reduced post merger rates of return. Finally, many such studies rely on company accounts with some ajustments. Utton did not compare with average profitability in the relevant industrial sector.

Some of the three limitations of earlier work have been high-lighted in a recent study by Meeks (1977)[11] based on a sample of 233 of the larger listed companies in the U.K. which merged in the period 1964 - 72. He calculated profits for the merging firms in the three years prior to the merger year and compared with the post merger rate of return after standardising for the profitability of the merging firm's industries. At the time of involvement of the merged company in a second merger its record was terminated in the year prior to the second acquisition. The average results of this study are summerised in the following Table.

THE AVERAGE CHANGE IN STANDARDISED PROFITABILITY: BEFORE AND AFTER ADJUSTMENT

Year	Unadjusted profit-ability	Adjusted profit-ability	Cases in which fully standardised net profitability was negative	Number of cases
	%	%	%	
y	11.4	14.8	33.8	213
y+1	-5.3	-1.5	53.6	192
y+2	-3.5	-1.0	51.7	174
y+3	-6.9	-5.8	52.7	146
y+4	-9.9	-9.8	66.0	103
y+5	-10.9	-11.9	64.2	67
y+6	-6.8	-6.7	52.3	44
y+7	-7.3	-7.3	61.9	21

Note y = year of merger. Only in the year of the merger there was
an increase in average profits and the author suggests that this
probably reflects measurement problems which are specially acute in
that year. The merger year average profits declined in all sub-
sequent years up to the seventh year. Besides this between one-half
and two-thirds of the companies in the sample experienced a decline
in profits in each year after the merger.

Meeks (1977) suggests that at least half of the megers by larger
quoted companies are unprofitable. There are various criticisms of
the methodology adopted by Meeks of which one of the more important
is that it excludes multiple acquirers. Larger and more profitable
acquirers were also omitted, thus causing a downward bias in the
results.

Franks et al. (1977)[3] estimated the gains to shareholders
arising from 71 mergers in the Breweries and Distilleries industry
over the period 1955 - 72. It appears from his study that the
acquired firm obtained gains up to 26 percent during the four months
prior to the completion of a merger and acquirers gained about 2.5
percent on their own market values.

There are, however, some differences between the results of the
United States and the U.K. The U.K. results suggest that most
mergers were anticipated less than 3 months prior to the announce-
ment date compared with 8 months prior to merging in the United
States. The difference may simply have been due to the use of
different sources of information, and different definitions of
critical dates about the bid.

The U.K. acquirers were making abnormal losses prior to merging.
The abnormal gains of the acquirers disappeared subsequent to the

takeover. All-in-all, it looks as though there have been net gains
to merging, but most if not all those gains accrued to the share-
holders of the acquired companies. There is no evidence from
market returns that the acquirers lost money.

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CHAPTER THREE
ANALYSIS OF ECONOMIC GAINS FROM MERGER

3.1 INTRODUCTION

Merger activity may be related to the value maximizing hypothesis, the investment hypothesis, the size maximizing hypothesis, or the improved management hypothesis. These hypotheses may have different implications and may bring abnormal changes in merging firm values occurring around the time of a merger.

Efficient capital markets react after announcements of merger, and share prices tend to change up to the time of a merger.

The investment hypothesis holds the assumption that both firms involved in a merger are value maximizers. Under the improved management hypothesis the potential target firms are assumed to be controlled by inefficient management. Finally, the potential acquired firms are assumed to act to maximize value under the size maximizing hypothesis.

A value maximizing firm does not invest in merger activity if the net present value of that investment is negative. Therefore, the net present value of a merger attempt is non-negative for acquiring firms under the investment hypothesis. On the otherhand the net present value of a merger attempt becomes non negative for potential target firms under the investment and size maximizing hypothesis.

Size maximizing firms may be involved in activities which have negative net present values since a direct link exists between merger activity and size maximizing behaviour by acquiring firms' management. So the size maximizing hypothesis is consistent with the view that merger attempts are negative net present value in-

vestments for acquiring firms. This does not rule out the possibility that successfully completed mergers increased acquiring firm shareholder wealth. But if all acquiring firms act as size maximizers merger prices will be bid to the point where merger attempts, on average, have a negative impact on acquiring firm shareholder wealth.

Corporate mergers transfer control of target firm's assets from a relatively inefficient management to the competent managers of the acquiring firm under the improved management hypothesis. Mergers are considered as a response to the sub-optimal management policies of acquired firms.

The investors are assumed to get adverse information about incumbent management under the improved management hypothesis. After receiving this adverse information investors may believe that managerial efficiency has declined. As a result this may minimize their expected contingent benefits to be generated by the firm in the future. Opportunity losses are expected to continue till there is a change of management through a merger.

Under the improved management hypothesis the investors come to realize that inefficiently managed firms are an acquisition candidates. Losses suffered and accumulated during the period of inefficient management may not be recouped even after the merger and for this reason the investment is a negative net present value 'project'. The continued losses during the time of inefficient management may lead to eventual merger. When this information is reflected in an efficient capital market the prices of shares of acquired firms will not go up and the shareholders will earn negative returns. So negative return is consistent with the improved management hypothesis.

The future cost savings of merged companies are estimated by the investors by applying various methods and these are discounted in the present price. If the capital market is efficient the information of a merger announcement is reflected in the share price and the share price changes to reflect the merger's contingent benefits. All three hypotheses are consistent with positive merger contingent benefits and hence with positive expected abnormal returns when the merger actually takes place if the attempts succeeds, and with negative ones if the attempt fails. How the information about the present and expected future activities of both the acquired and acquiring company is reflected in the capital market may be illustrated with the following diagram.
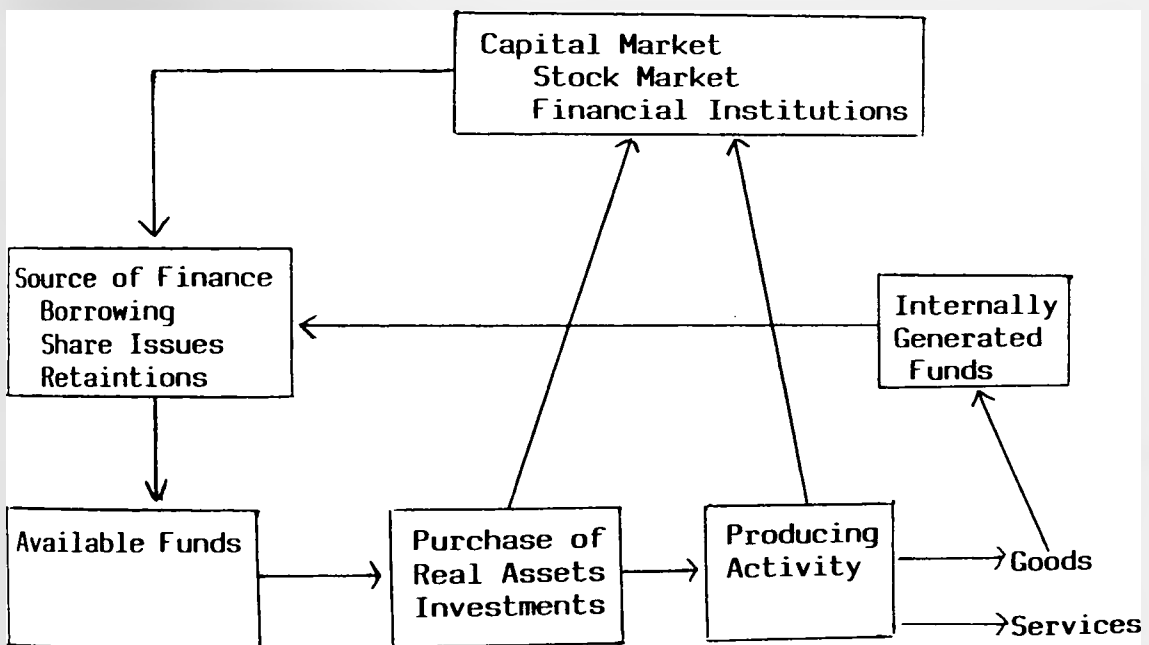
The above diagram represents the normal activities of any firm or company. When two or more firms decide to merge with a view to attaining some objective then the nature and/or efficiency of their activites may change. Some economies of scale might be obtained, for instance. This should be reflected in an efficient capital

market. Therefore the investors may get the opportunity to capitalize any contingent benefits after the merger announcement. Thereafter competition among the acquiring firms is started.

Competition among acquiring firms will usually cause the value of expected benefits from merging to be paid to the shareholders of the firm being acquired. Thus the shareholders of the acquired firm earn abnormal returns. The shareholders of the acquiring company sometimes also earn small positive abnormal returns. The earning of abnormal returns would be consistent with the existence of economic gains. If the motive of merged companies is to maximize profit this may be achieved either by increasing the productive efficiency or by increasing the sales price through increased market dominance, or both. So if the shareholders earn abnormal returns, then such results would be consistent with increased profitability.

The improved management hypothesis predicts negative cumulative abnormal returns to acquired firms even in successful mergers. The long term impact of inefficient management is negative whether or not efficient policies are ultimately restored in a merger.

So the motives of both acquired and acquiring firms are reflected in an efficient capital market and share prices move accordingly. So the economic theory is not inconsistent with financial gains.

The acquiring company must decide on the appropriate 'trade off' between secrecy and information loss as each will have a cost. Of course if 'strong form' market efficiency holds the secret will be 'out' almost as soon as the senior managers first think of the possibility of acquiring the target company and market prices will react accordingly.

The production efficiency hypothesis represents a class of theories predicting an increase in the market value of the merging firms due to the implementation of a more cost efficient production/ investment policy after the merger is consumated. Economies of scale arise where the technology of production brings about a falling of costs per unit of output with an increasing rate of production up to the 'minimum efficient plant size' - the size of plant beyond which cost savings disappear, the diagram of which is given below:
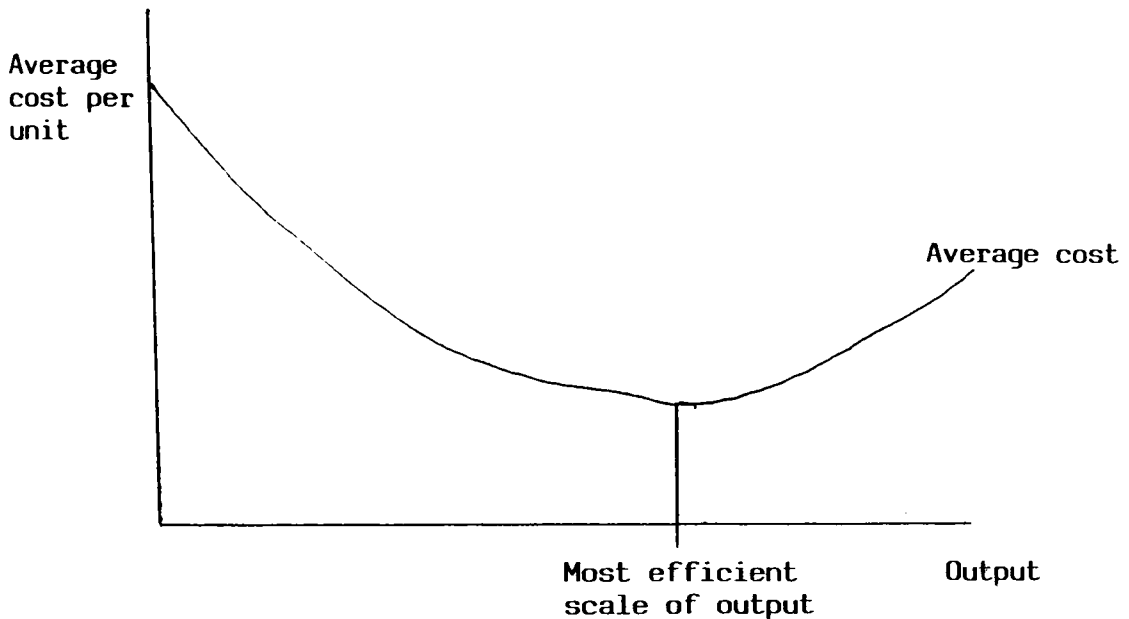
To obtain a given output from a smaller total of factor inputs would indicate a real resource saving and this resource saving is an economic gain to society. We may otherwise say that increased out- put is obtained from a given level of resources which may lead to lower domestic prices.

The Public Interest Issues in Economic Analysis

Before the merger takes place the acquiring firms need to

justify the reasons for the merger to the Monopolies and Mergers Commission (MMC). The acquiring firm may indicate the potential for economies of scale in production and the economic gain is quantitatively significant. An increase in market share thresholds is favoured so that economies of scale can be fully realized and a qualified efficiencies defence could be allowed. However, substantial evidence would be needed that the resulting cost savings could not have been obtained without the merger and clearly outweigh any increase in market power.

The merged firms will try to establish that the gains in market power through momopoly might be offset by efficiency gains. Efficiency gain means here the gain which can be derived by better utilization of resources, but it does not mean economies of scale.

If the efficiency gains realised from merger offset the potential welfare losses that arise from the consequent increase in monopoly power, then we may judge the merger is socially desirable.

The merged companies will have to show the impact of merger with respect to:

a) Product quality effects

b) Labour market effects

c) Implications of technological changes

The merged firms will need to demonstrate some of the following to the MMC:

1) Substantial natural cost advantages

2) Fuel savings

3) Savings in labour requirements

4) Cost of raw materials savings

5) Savings from admin., selling and general expenses

6) Advantages from large scale of production, etc.

But the question of economies of scale is crucial.

In order to establish the reasons for the above cost savings the merged companies are to prepare the following along with the necessary statements before the merger and to submit the same to the MMC.

a) The prices of the main product

b) The ratio output price to input price

c) The ratio of profits to revenue of both acquiring

   and acquired company

d) The measures of increased efficiency

For Some Years

If the above trends are favourable from an economic point of view (e.g. if the ratio of output price to input price declines then it is favourable) the proposal of merger may be accepted. If the falling tendency of labour, material and fuel costs is observed then a high rate of producitvity growth might be expected. Certainly these observations would be quite consistent with an increasing rate of return.

The investors using availalbe information relating to both the acquired company and the acquiring company estimate the future profits through economies of scale or by creating monopoly power. All the information in this way is reflected in the capital market and share prices are adjusted accordingly.

For example some bidder firms typically earn positive but samller and generally insignificant abnormal returns over some period surrounding and including the merger proposal announcement. On the otherhand target shareholders realise on average say 15% abnormal returns immediately before or after the merger, target shareholders

clearly earn large economic rents from this event. This evidence
is generally consistent with the proposition that mergers are the
result of investments undertaken by value maximizing firms, which
is necessarily a condition for productive efficiency.

After the merger the shareholders earn normal rates of return
because the total value of firm has already been increased after the
adjustment of share prices.

3.2 ANALYSIS OF ECONOMIC GAINS WITH REFERENCE TO CASE STUDIES

In order to analyse the economic gain from merger research
of the case study nature has been conducted by a team consisting of
Keith Cowling Paul Stoneman, John Cubbin, John Cable, Graham Hall,
Simon Domberger and Patricia Dutton at Warwick University.[1] They
have taken into account a sample of horizontal mergers which took
place during the period 1966 - 69 and they experienced some problems
in generalising their results but found certain tendencies emerged.
The mergers which they studied led to substantial increases in
market power. In spite of the presence of market power, gains in
efficiency were not a significant outcome in the majority of cases.

In some case studies a long term efficiency gain seemed to occur,
but this was associated with a subsequent investment programme by
the firm or the rationalisation of production. Their studies ob-
served little evidence that economies of scale contributed to
efficiency gains.

It might reasonably be supposed that mergers would consequently
have produced gains in profitability arising from the exercise of
market power. It is extremely difficult to quantify the economic
losses brought about by reduced competion but it is possible that

they were accompied by wider economic gains through effects upon employment, imports etc.

The mergers which they studied are shown in the following Table with details of companies merged, date of merger, product and merged company.

MERGERS STUDIED

Companies merged	Date	Product	Merged Company
London Brick Co. Marston Vallery Co.	1968	Bricks	London Brick Co.
Courtaulds British Celanese	1969	Cellulosic Fibres	Courtaulds
Ransome & Marles Co. Pollard Ball & Roller Bearing Co. Ltd.	1969	Ball and Roller Bearings	Ransome, Hoffman & Pollard Ltd.
British Insulated Callenders Cables Ltd. Pyrotenax	1966	Mineral Insulated Cables	BICC
Tube Investment Ltd. Coventry Gauge and Tools Co. Ltd.	1969	Machine Tools	Tube Investments
Berger, Jenson & Nicholson British Paints Ltd.	1969	Paint	Berger, Jenson & Nicholson
Rowntree John MacKintosh	1969	Confectionary	Rowntree MacKintosh
H&R Johnson Ltd. Richards Campbell Co. Ltd.	1968	Glazed Tiles	Johnson Richard Ltd.
Thorn Radio Rentals	1968	Television Manufacture and Rental	No change

The authors try to highlight the impact of mergers such as product quality effects, labour market effects and the implication for technological change in the above case studies. Very few effeciency gains are actually realized in the above case studies.

The authors consider first why mergers are expected to lead to efficiency gains. The usual arguments cover three factors:

1) A merger enables the joint company to reap the benefits of
   economies of scale;

2) The merger will involve the application of better management to
   one of the merged firms;

3) There will be undefined gains from 'synergy'.

    There are various reasons suggested by the participants for
expecting benefits from mergers e.g. lowering costs due to increased
size as observed in London Bricks Company.

3.3 A CASE STUDY OF LONDON BRICK AND MARSTON VALLEY

    The merger between the London Brick Company and the Marston
Valley Brick Company took place in the second quarter of 1968.
LBC was encouraged in the merger by the National Board for Prices
and Incomes on the grouds that increased size in fletton manaufacture
lowers costs.   Before the merger the approximate market shares
for flettons were as under:
London Brick, 72%; Marston Valley, 14%; Redland, 8%; Whittle Sea
Central, 4%; Fletton's Ltd., 2%.   Flettons Ltd. ceased production in
1970.

    The production of LBC was fletton building bricks.   Fletton and
non-fletton bricks fulfil almost the same purpose.   But Flettons are
lighter and more uniform in dimension than non-flettons, but are
generally less resistent to severe weather conditions.

    LBC enjoyed the following benefits over the non fletton bricks:

a) Substantial natural cost advantage

b) Reduced transport cost

c) Less fuel cost

d) Major savings in labour requirements, the cost of raw materials

and administration, selling and general expenses.

But the major advantage is the lowering of cost due to larger scale of production in flettons.

In addition to the above advantages LBC put forward other arguments in favour of the merger. They further claimed saving from production of 250 million flettons per year instead of 62.5 million through economies of large scale. A production of 250 million fletton yearly per kiln and total output of 2000 million bricks yearly (250 x 8) is probably the minimum efficient size and is necessary to justify their own engineering facilities. The minimum scale of 2000 m bircks would account for 2/3 of LBCs peak output. LBC also claimed economies of scale in marketing and research and development, states that the large size of the company enables it to secure large discounts.

The multiplant economies may be obtained when the level of demand falls below the full capacity. It would be more efficient to close down an old or obsolescent plant completely without reducing the capacity utilization of all plants because there are many costs like fuel and some types of labour that have to be sustained at the same level independently of output. It would be better to utilize the full capacity of a modern one instead.

LBC has been the dominant firm in the fletton industry since 1950. LBC has to bear large transport costs in those market areas which are far away from the Oxford clay belt (Oxford Clay is the raw material of fletton), where the competition was stronger.

In areas where closer substitutes were available and where competition was stronger price would be set close to long-run marginal cost and in the market areas close to the Oxford clay and

where there is less severe competition, there would be a larger
mark up on marginal cost. This type of price discrimination may be
thought objectionable. LBC has engaged in price discrimination. On
enquiry the MMC was of the opinion that the price level for bricks
was not too high and accepted LBC's target figure of a 20% return
on capital.

The company always earned a rate of return between 22% and 30%
before the merger and was recognized as the dominant supplier by
1968 and the price level of bricks was under control. But Marston
Valley charged more for some bricks because they gave larger
discounts to merchants than LBC before the merger. After the merger
these discounts were reduced and the prices were brought into the
line with London Brick's. In 1970 LBC after increased wages by 20%
and applied to the NBPI for an increase in price to cover this. The
application was approved. This increase can be interpreted as the
gains to the worker for working in a modern, well equipped firm, or
it may be treated as the proceeds from sharing in the monopoly profit.
As a result of the increased wages the reported profit was under-
stated. In any event the firm managed to improve their efficiency,
but profit declined in 1974 due to very low sales.

In 1973 and 1974 demand fell drastically and as a result
capacity was not utilized fully which led to an inefficiency and an
increased unit factor requirement. A remarkable improvement in
efficiency occurred between 1969 and 1973 when there was a 20% re-
duction in inputs per unit of output. So the post merger per-
formance seems to be better than pre merger performance.

After the merger improvements were made in various ways. In-
creasing returns to scale were obtained from investment in modern

plant and for modernising and mechanising older works. In brief we can say improved technology did involve increasing returns to scale after the merger. There have been some significant absolute in-creases in efficiency (20%) in London Brick in 6 years. The major cause of the gain in efficiency of London Brick since 1969 was investment in modern techniques and this investment consisted primarily of the mechanisation of production.

The expertise perhaps helped in the realization of gains from that investment and some gains probably came from spreading the use of modern techniques of management over a large area of operations. The failure of Marston Valley management to mechanise their works and to close other plants indicated the incompetence of the Marston Valley management. If the expertise of LBC did not contribute some-thing then the return on the investment may have been lower. Further-more if the merger did not take place selling expenses in the industry may have been higher.

The gains arising from multiplant operation have not been quantified. Increased flexibility over the trade cycle contributed to the greatest extent because it is perhaps less expensive to close down some plants completely instead of reducing the output. Multi-Kiln operation provided many of the advantages.

The conclusion may be drawn here that the gains in efficiency from the merger itself could have been at most 2 - 4% of Marston Valley's sales or .33% - .65% of the combined firm. No evidence about decline in efficiency after the merger has been found by the author in this case study. Also no evidence regarding any direct price or market power effect of the merger has been observed. They have been able to earn at least 50% more than the market rates

though the same level of profitability had already been reached by the time of the merger. Furthermore the LBC merger has eliminated much of the competition and as a result it has become more difficult for the new entry into fletton production.

3.4 A CASE STUDY OF THORN AND RADIO RENTALS

Date of Merger: 1968

Products: Television manufacturing and rentals and television colour tube manufacturing

Thorn and Radio Rentals both claimed that the merger would lead to savings on the cost of producing components and television sets. Thorn's greater experience of large volume production and special machinery developed by Thorn for its own use could be utilized by Radio Rentals, which would not be possible without merger as Radio Rentals was a smaller manufacturer. They also expected cost savings from the increased scale of production and better use of resources by making heavy capital investments in the most modern plant and to spend a greater amount on research and development. Moreover they argued that the merger would actually enable them to meet foreign competition. They claimed that the above benefits would not have been possible in the absence of the merger.

Their assumption is that the difference between Baird's and Thorn's current prime costs is a measure of the saving to be achieved in Baird's factories as a result of the merger.

The expected gains in TV rentals are summarised in the following Table.

TOTAL EXPECTED COST SAVINGS TO TV RENTALS EXPECTED BY THORN AND RADIO RENTALS

THORN	RADIO RENTALS
60 outlets closed saving £475,000 a year.	100 outlets closed' over a number of year' saving £650,000.
Improved use of field service engineers, saving a total of £25,000 - £30,000.	Improved use of field service engineers would save at least £400,000 for Radio Rentals alone.
Saving on the cost of central repair depots amounting to £25,000.	No estimate.
Saving from the joint purchase of service materials £125,000.	No estimate.
Radio Rental's use of Thorn's computer, saving £398.000.	This would save £250,000.
Centralisation of administration £500,000.	This would save £250,000.
Saving on the cost of distributing sets £100,000.	This had not been quantified but £70,000 would be saved in whole-saling to independents.

Source of data: Cowling - 'Mergers and Economic Performance' p. 153.

Since the information on Thorn's performance in Television manufacturing was insufficient it is very difficult to conclude about efficiency gains. But considering the unreliability of the Radio Rental figures it may be concluded that any benefits that can be attributed to the merger do not seem obvious.

3.5 SUMMARISED FINDINGS WITH REFERENCE TO OTHER CASE STUDIES

Regarding other case studies the summarised findings are as follows:

Courtauld's behaviour is not consistent with reaping benefits of plant scale economies, but such economies were found with Ransome, Hoffman and Pollard Ltd. and such economies were apparently realized through a great reduction in the product range. In Berger, Jenson &

Nicholson there are a number of plants suggesting that the firm is greater than is necessary for the exploitation of plant scale economies. A small scale seems optimal in Johnson Richards Ltd. Although plant scale economies may be important for the reason of expecting efficiency gains it is not found on every part on this evidence.

The merger between H & R. Johnson Ltd. and Richards Campbell Ltd. can be termed a success in terms of efficiency. Benefits were realized from installing Johnson methods into the firm of Richard Campbell. This can be treated as spreading managerial talent over a larger company. This spreading of better management might be thought of as a sort of economies of scale in management. Better management was one of the reasons for the realisation of increased productivity in Johnson Richards after the merger but is is more appropriate to say 'effective management' should be a pre requisite of achieving real resource savings after a merger. Better management also helped for the increase in productivity realized in RHP (Ransome, Hoffman & Pollard Ltd).

Now the performance of the merged companies should be evaluated on the basis of efficiency. Cowling et al have defined a performance norm with which he compared the actual performance of the firms after merger.

As per their standard if the efficiency has not risen faster than at an annual rate of increase of $1\frac{1}{2}\%$ p.a then the merger is not a success. This rate seems a reasonable expectation of performance without merger in most industries. In these terms some significant absolute increases in efficiency were found in London Brick (20% in 6 years), RHP (25% in 6 years), Johnson - Richard (10% in 4 years). Thus the above three companies and another three

companies namely Tube Investment, Rowntree Mackintosh and Courtaulds
achieved efficiency gains more than $1\frac{1}{2}\%$ p.a. Out of the 6 companies
Tube Investments had by 1975 returned to an efficiency level below
that in the merger year and the Courtaulds figures give a false
impression. So only London Brick, RHP, Johnson-Richards and Rowntree
Mackintosh can satisfy the $1\frac{1}{2}\%$ criterion. But these successful
mergers do not yield gains that differ greatly from those achieved
by non merging rivals.

As per efficiency standard (k) Tube Investments, BJN and Thorn/
Radio Rentals all had increased unit factor requirements. Overall
there are three findings.

a) Four of the cases show efficiency gains exceeding $1\frac{1}{2}\%$ p.a.;

b) No case shows extensive gains in efficiency relative to non
merging competitors;

c) Positive transitional costs are often associated with merger
activity and these costs are not incurred by competing firms.

If (b) and (c) are combined together on this reading of the
evidence (which is biased towards favouring merger) indicate that
there have been no resource savings to society as a result of these
mergers over what could otherwise have been achieved.

Further it seems that no improvement in export performance has
been noticed. Market power realised as a result of merger has not
led to increased profitability.

In most of the cases output prices relative to input prices have
fallen considerably and in some cases market power was not used to
increase profitability.

The average result of the above case studies is that efficiency
gains from mergers are in general not found. Considering all the
aspects the authors have given judgement against mergers.

The mergers of GEC with AEI and English Electric are considered to
have been successful in lowering units costs through determined

rationalisation of capacity. Much of this success must be
attributed not just to its greater effective market power but to the
style of management which allows middle management its head while
keeping tight financial control, and to a large extent this seems to
be a matter of organisational structure. There has also been a
high social cost interms of lost employment which has not
necessarily been any less than if the merger had not taken place.

3.6 SUMMARY

A number of studies have been undertaken into the effects of
mergers, i.e. on post merger performance. The results of studies of
the economic benefits are inconclusive. Many of these studies have
been carried out to examine the profitability of mergers before and
after merger. It appears from the various studies that a firm's
post merger performance in the U.K. is often found to be unprofitable
and little in the way of efficiency gains seemed to be realised.
But the evidence did not rule out the possibility that mergers may
be accompanied by wider economic effects upon employment, import
penetration etc.

Earlier research and studies failed to show any clear evidence
of superior performance by merger active firms. In the case of
congolomerate mergers in the U.S.A. the post merger profitability
ratios for target companies were in most cases lower than before the
merger. Mergers had little effect on profitability of merging firms
in the three to five years after the merger in those countries which
follow a common methodology. No statistically significant change
of growth rates was found both in U.K. and U.S.A. in the post merger
period. A reduction in the profitability of merging firms was also

found. A slow down in the growth rate and a deterioration in the performance of common shares of merging firms was also found in the U.S.A. When other U.S. studies are evaluated it is found, at worst, that mergers have a neutral impact on social welfare and that merger activity may well provide benefits to society.

It is very difficult to hold the view that merger is in fact a necessary or sufficient condition for efficiency gain. It appears from the various case studies that efficiency has improved in many cases, in other cases it has not improved and in some cases it has declined. In cases where efficiency has improved it has done so no faster than non merging firms. For example it appears from the evidence that the GEC merger has been successful and British Leyland merger has been unsuccessful from the efficiency point of view. Although there has been significant absolute increase in efficiency in London Brick, RHP, Johnson-Richards and Rowntree Mackintosh, it is also the case that Torrington and FAG (UK) a competitor for RHP attained increases in efficiency which was the greater rate than RHP. Of course Rowntree Mackintosh made gains at least equal to its competitors. So it seems that the above mentioned successful mergers do not yield gains that differ greatly from those achieved by non merging firms.

Another case study of the Brewing Industry showed it had experienced a decline in efficiency and the gain from scale economies was not obtained as a result of merger.

It also appears from other case studies that no apparent improvement in international competitiveness or export performance has been observed. For instance Thorn and Radio Rental were not able to meet the increase in demand and the shortage of supply was

met from imports. The RHP merger failed to overcome the Japanese challange.

The aggregate effect of mergers on the economy as a whole is an important issue of the public interest. This is particularly important at the times when merger activity is increasing. Management structure and control of industry are changed as a result of merger. So it is necessary to examine whether efficiency of the economy is promoted by these changes. It is also important to examine the implications of the growing absolute size of companies.

Sometimes it is argued that large firms are generally more efficient than small firms. But there is no conclusive evidence that very large companies are more efficient than medium sized compnaies. On the otherhand there is no conclusive evidence that they are less efficient. But it must be recognized that some industries require the scale of operations for the purpose of competition effectively in international markets and this requires very large capital resources and probably a strong domestic market. However, other economies of scale may be found equally in medium-sized and large companies. Competent management may be available in all sizes of company.

Efficient and vigorously growing medium-sized companies may be merged into larger units for the purpose of achievement of growth and efficiency of the economy. In a growing economy, the large firms are able to grow without destroying the independence of efficient small firms. There is a lack of evidence that larger size leads to greater efficiency. It should be kept in mind that even when a company having competent management, and through its acquisitions increases efficiency over a wider area, the effect may

not be sustained (permanent). Mangement quality may change and as
a result risk of deterioration may arise. This may happen
particularly when it is dependent on the very aggressive and able
chief executive and there is no equally able successor in sight.

After merger the production technique and input process may be
changed by the competent manager. Management may try to ensure that
economies of scale are fully materialised. They may shut down some
plant, change the research budget, or redesign organisational
structures and procedures. The separate effect caused by the above
changes can not be measured accurately.

It is very difficult to draw firm conclusions regarding changes
in efficiency unless we know the output price and the cost of
inputs to the company. It can be said that competition couldbe in-
creased due to merger and for this reason profitability may decline.
Efficiency changes need to be examined in order to complement the
relative profitability approach.

Actual   increases in efficiency may be found when there is a
reduction in the ratio of inputs used to output produced. The way
of measuring this change in efficiency is to add up the inputs in
every period and compare them with the output produced. These
details may be collected only for certain years for which census of
production was completed. But the same data would not be available
for individual firms. The required information can be collected
from the knowledge of

a) Expenditure of inputs and their prices

b) Revenue from sales of outputs and their prices.

Cowling used a variable,k, as a measure of the total factor
requirement per unit of output. It may vary with the scale of

production, technical progress, or efficiency with which a particular technique is used. It was used to compare efficiency in two alternative situations, that is, with and without merger. It is essentially a relative measure, not indicative of absolute standards of efficiency.

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CHAPTER FOUR

CONCLUSIONS

If the dominant motive for merger is to increase value, i.e. the value of the combined firm being greater than the sum of the separate values, then mergers can be expected to generate gains for the shareholders (higher valued shares) that would otherwise not exist. The majority of the evidence indicates that mergers do in fact generate gains for shareholders. From about the time when a merger is anticipated up to the time when it actually occurs abnormal returns are earned by shareholders. At any point in time during this period the market's expectations appear to be fully impounded in share prices, ruling out possibilites for exploiting these gains. Most of the gains are earned by the shareholders of the 'target' firms, i.e. the acquired firm or the less dominant firm in the marriage. This is largely the result of strong com- petition in the market for potential acquirees. Although the dis- tribution of the gains sometimes varies there appears to be fairly conclusive evidence that such gains do exist, i.e. securities markets fairly consistently attach value to mergers. When there is also so much evidence supporting the rationality and efficiency of securities markets one would not expect the market to be consistently wrong in its evaluation of mergers. Therefore, any ex post studies of mergers should indicate on average, the presence of gains which had earlier been anticipated by the securities market.

Firms may engage in mergers to achieve greater cost efficiency (economies of scale), or simply to increase size and market power, and to reduce competition. In both cases the merged firms could turn out more profitable; in the former case by reducing costs in

the latter case by increasing monopoly rent. The latter instance is usually viewed as a less desirable motive for merger.

The balance of the evidence on economic gains from merger appears to conflict with expectations of securities markets. On average there appear to be no efficiency gains while mergers may well have an overall adverse effect on economic welfare. However, even if mergers do lead to overall welfare loss there could still be a redistribution of income (due to monopoly power) in favour of profit earners in the merged enterprise (i.e. the shareholders). In other words, while society in general is less well off, the merged firm itself is actually earning more profit. However, findings seem to indicate that mergers are just as likely to be unprofitable as profitable. This would fit in with a general picture of no overall economic gains.

Why then does the securities market consistently give value to mergers? If securities markets are efficient then share prices should provide the best estimate of the true worth of firms. The contrast between security market gains and economic gains does seem anomalous. One possible explanation is that securities markets are not efficient. Cowling et al. do not consider security market behaviour in any detail but have "... reservations about using profitability as a measure of efficiency". Furthermore, they assert "This method assumes that shareholders can and do successfully assess the future profitability of the combined enterprise. The obvious response to this is that if this is what shareholders try to do the evidence of the profitability studies shows that they do it very badly".

Twenty years of capital market research cannot be dismissed so

lightly.

Perhaps an alternative explanation is that the securities
market is valuing the purely financial gains such as reduced taxes,
enhanced debt capacity, and lower costs of financial distress, rather
than any economic gains such as cost savings. Nonetheless, one would
expect these financial gains to show up in enhanced profitability,
ex post. However, unless the ex post profitability studies take risk
into account they will not have taken account of the fact that a
less risky stream of profits is more valuable. If a merger reduces
the riskiness of the future earnings stream it could be a source of
value. Post-merger profits would be more stable. This does not
seem sufficient to explain the apparent wide divergence between
ex-ante valuation and ex post performance.

Other possible explanations centre upon the quality of the data
employed to measure performance, ex post. This is generally account-
ing data. Acounting data is generated according to principles and
practies that have evolved over time. These principles and practices
are not based on the conceptual framework from which the notions of
economic efficiency and economic profit are drawn. Hence the
accounting concept of profit employed in empirical work may bear
little relationship to the economic concept of profit researchers
are trying to measure. The limitations of available data is a
perennial problem. Whether it is sufficient to explain the contrast
between evidence drawn from securities markets and evidence on
economic performance is perhaps unlikely. This area will benefit
from further research. The question raised in this dissertation
remains largely unresolved in the literature.

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