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**ANALYTICAL PERSPECTIVES
ON MERGERS AND
ACQUISITIONS.
A SURVEY**

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ANALYTICAL PERSPECTIVES ON MERGERS AND ACQUISITIONS: A SURVEY.

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Abstract

The aim of this paper is to supply the reader with a survey of the most widely debated issues related to mergers and acquisitions. We review the existing theoretical and empirical literature on the causes and consequences of mergers. The bulk of the empirical evidence on the profitability of mergers and on the stock performance of the merging partners shows that mergers are usually unprofitable and that the only group who stand to profit from a merger are the shareholders of the acquired company. This evidence has prompted a variety of theoretical explanations to be put forward as to why mergers occur. We provide a systematic review of such theories. We also analyse the related issue of the consequences of mergers on economic welfare, and review both theories and the empirical work on this issue.

I. Introduction

There is evidence that the considerable post-World War II merger activity in developed countries displays a similar cyclical pattern in the US and the UK. The time series behaviour of merger activity in the US and the UK is rather similar: mergers seem to be occurring in cycles. In post-war UK, in the late 50s and early 60s the number of mergers increased with respect to the decade before, and then it accelerated and peaked twice in the period 1967-1973. These mergers were mainly horizontal. Merger activity dropped during the period 1974-81, with the number of mergers almost halving. In the next three years, 1982-85, the number of mergers grew, albeit not dramatically, but their value soared: there were therefore relatively few mergers, but these were massive. Finally, between 1986 and 1989 there was a rapid increase in both the number (which peaked at 1527 in 1987) and the value (which peaked in 1989 at 27,253 million pounds) of mergers (Hughes, 1993).

Causes and consequences of mergers are issues widely debated amongst both financial and industrial organization economists. Why do mergers actually occur? What are their effects on private profitability and public welfare? Which actions should be taken by policy makers, if any? These are all questions to which there are no agreed-upon answers. The aim of this paper is to review the existing theoretical and empirical literature on the causes and consequences of mergers. From this, light may be thrown also on their cyclical pattern.

Many explanations have been supplied as to why mergers occur, over and beyond the neo-classical assumption of profit maximization. This issue is intertwined with that of post-merger profitability: if the merging partners are driven by profit maximization, then all mergers should be profitable. This,

however, seems not to be the case (Mueller, 1989). Alternative hypotheses have therefore been developed to explain the existence of mergers. These issues are discussed in section 2.

Industrial economists have developed their models in order to assess the likely effects of a merger on economic welfare via its effects on market structure, and the conduct and performance of market participants. *Coeteris paribus*, a merger often results in the production of less output by the merged unit than it was previously produced by the two independent merging partners. On the other hand, a merger is also bound to reduce costs by avoiding duplications of tasks and by leading to other efficiencies. Williamson (1968) was the first to stress the existence of a trade-off between such cost efficiencies and the dead-weight loss to welfare due to the decrease in industry output and the consequent price rise. A few theoretical models have been developed in order to model the effect of mergers on performance and welfare. These models are discussed in section 3.

The bulk of empirical evidence on the performance of mergers, in terms of profitability, stock returns, and effects on market structure, is discussed in section 4. The results of countless empirical exercises show that mergers are hardly ever privately profitable, and that the only group who stands to gain from them are the shareholders of the acquired company. In the UK, mergers seem to have had a positive effect on market concentration, while there is no evidence that this has been the case for the US. However, a study for the US (Kim and Singal, 1993) suggests that it is not horizontal mergers but conglomerate mergers which result in large price increases.

II. The Causes of Mergers

Mergers occur when two or more companies join together to form a single company. Many explanations have been supplied as to why mergers occur¹. According to neo-classical economic theory, mergers occur as the result of a profit-maximizing behaviour. Companies may wish to merge because they want to better their productive, distributive, and/or financing capacity by achieving economies of scale or scope. Or they might wish to increase their market power, thereby enhancing the monopolistic characteristics of the market they operate in. Another reason is the search for cost efficiencies and synergies, deriving for instance from the acquisition of technology or of intangible assets such as the knowledge of the market. Also, mergers might occur to displace inefficient management. There are however also other, non-profit maximizing reasons, related to managerial objectives. Especially in large companies, when ownership is spread among thousands of shareholders, managers may have plenty of power to pursue their own goals, like maximizing sales or growth; reducing cash-flow risks; or simply trying to make themselves look grand. In such circumstances managers can initiate a merger not to maximize the value of the company (i.e. the net present value of future profits), but their own utility.

II.1. The Causes of Mergers: the Market for Corporate Control

When corporate ownership is separate from corporate governance, managers representing shareholders are assumed by neo-classical economic theory to pursue the goal of value maximization, i.e. to maximize the net present value of future profits. However, this is not always the case. Managers often pursue

¹ See also Mueller (1980) and Scherer (1980) for comprehensive surveys.

objectives other than pure value maximization (Jensen and Meckling, 1976). The question arises of how to detect, punish and rectify such behaviour.

Monitoring the management's action is very expensive, and when ownership is highly spread a free-rider problem develops (Grossman and Hart, 1981). Shareholders will not be willing to bear the cost of monitoring individually, knowing that the other shareholders will reap the benefits at no cost. However, shareholders can collectively elect a board of directors with the task of controlling the management. Unfortunately, this internal control device does not usually work, as non-executive directors tend to be chosen and influenced by executive management (Mace, 1971; Shleifer and Vishni, 1988; Davis and Kay, 1993). Another possibility to keep management in check is to device employment contracts that discourage non-value maximizing behaviour. Share options and performance-related bonuses can be offered as part of pay packages, for instance. Again, as reported by Shleifer and Vishni (1988) there is no evidence that such contracts do indeed work.

In the absence of effective internal control mechanisms to force managers to act in the best interest of the corporation, the market provides a good external disciplinary device in the form of hostile mergers, or take-overs. Technically, the difference between a take-over and a merger is that in a take-over the raider buys shares in the target company directly from its shareholders, while a merger implies negotiations between the raider and the management of the target. The target's senior managers in a hostile take-over bid are well aware that they will be replaced if the bid is successful, and are therefore unlikely to surrender without a fight. They have a few ammunition available, and these consist of devices aimed at increasing the take-over costs to the raider, or at imposing new conditions that need being met before the take-over can take place. Some such devices require

the shareholders' approval, some others do not. They are very well developed in the US, and are being imported into the UK at considerable speed.

Defensive measures that require the approval of the target shareholders include severance contracts (so-called "golden parachutes"), supermajority amendments, dual class recapitalization, and reductions in cumulative voting rights. Defensive measures that do not require the target shareholders' approval are Court litigation, targeted stock repurchases (so-called "greenmail"), and poison pills. Golden parachutes are contractual provisions to compensate managers in case of dismissal following a take-over. Using supermajority amendments allows management to increase the majority of voting shares required for approving a merger. Dual class recapitalization involves splitting the equity into two classes of shares with unequal voting rights, or with and without voting rights. There is evidence that shares carrying voting rights are worth more (Lease et al., 1983). With cumulative voting rights it is possible to a minority group to elect a member on the board of directors even against the will of the majority of shareholders; so that reducing these rights gives more power to the management to resist a take-over bid. Greenmail is that action by which the management of the targeted company buys back the raider's holding at a premium. Finally, poison pills make take-over extremely expensive and are thus very successful; they are usually set into action when one single acquirer obtains a certain proportion of shares; at that point the other shareholders gain the right to either buy extra-shares or sell their shares to the target at a very good price.

Needless to say, when defensive tactics are applied successfully, the external control mechanism represented by the take-over fails to come into action, and non-value maximising managers are left free to persist with their behaviour. There is another problem that has to be solved by the raider, independently of

defensive tactics, and that is to convince the shareholders of the target company to part from their shares. As Grossman and Hart (1980) point out, there is a free rider problem here. Each shareholder knows that the value of his holdings will increase after the take-over. It is in the interest of each individual shareholder not to sell immediately, if he/she believes that the other shareholders will sell and the take-over will take place. If every shareholder acts the same, no take-over can take place unless the raider passes all the expected take-over premium on to the target's shareholders. The bid is then unprofitable to the raider, and it will not take place. However, as noted by Shleifer and Vishny (1986), the raider can accumulate a certain amount of shares before the law forces them to go public: such shares need not be bought at a premium and therefore make the bid profitable.

It has been argued that those take-overs that take place to discipline inefficient management are efficiency enhancing. Critiques have however been moved to this statement. First, it has been argued (Shleifer and Summers, 1989) that part of the gains accruing to shareholders are losses to other groups, such as workers (whose wages might be cut and numbers reduced), suppliers and consumers. The extent of this trade-off is an empirical question and a very difficult one to assess. Peoples (1992), using US industry level data for the period 1979 to 1985, finds that non-union workers earn higher wages in industries that have experienced horizontal mergers than in industries that have not. There is however no differential between the two kinds of industries for unionised workers. Second, the threat of being the victim of a take-over can induce management to adopt a myopic behaviour, i.e. to undertake short-run profit busting projects rather than try to maximize long-run profits. Investment in R&D and both managers' and employees' training in firm-specific skills will suffer,

and with that the general competitiveness of the company. Again, whether this is true is an empirical question.

II.2. The Causes of Mergers: Free Cash-Flow Theory, the Pursue of Growth, and Oligopolistic Reaction

Until now, we have treated take-overs as disciplinary devices in an efficient market for corporate control: i.e. as an instrument to rectify non-value maximising behaviour on behalf of the management of a target company. Mergers and take-overs, however, can arise from non-value maximising behaviour on behalf of the managers of the acquiring company. As they are not prompted by managerial discipline motives, these mergers do not usually cause the layoff of the target's incumbent management. However, such mergers are generally harmful to the shareholders in the interest of whom managers are supposed to act.

Managers acting to maximise value for shareholders must distribute all free cash flow to them². Diverting free cash flow from shareholders allows managers to avoid having to use capital markets when in need of new capital; i.e. it allows them to avoid the monitoring associated with new equity issues (Easterbrook, 1984). Moreover, by diverting free cash flow managers can increase the size of the company, thereby enhancing their power and their earning ability, and reducing take-over risk. There is a conflict of interest related to the distribution of free cash flow between managers and the shareholders they are supposed to represent (Jensen, 1986). One way managers can divert free cash flows from dividends is by issuing debt and thus binding themselves to pay out future cash

² Free cash flow is defined as "cash flow in excess of that required to fund all of a firm's projects that have positive net present value when discounted at the relevant cost of capital" (Jensen, 1989, p.28).

flows to service such debt. Once more financial flexibility is allowed, we can expect managers to use free cash flow to further their interest by embarking in either acquisition or investment programs that can result in losses to the shareholders.

Growth by acquisition programs in industries generating large cash flows can involve diversification and/or horizontal expansion. Historically, diversifying mergers have proved to be unsuccessful, the main reason being that the managers do not know much about the markets and the production processes they are expanding into. Free cash flow theory predicts that managers in companies with large free cash flow and debt-rising potential will make the less profitable acquisitions, usually by diversifying. This amounts to non-value maximising behaviour and turns the company itself into a potential victim for an hostile take-over to discipline the management. The only way free cash flow can be spent in an efficient way is by performing horizontal mergers in declining industries (Dutz, 1989, Jensen, 1988). In such cases, the large cash premiums paid to the shareholders of the target take away resources from the declining industry, thereby facilitating industry exit and downsizing.

Non-value maximising behaviour on behalf of the managers of the acquiring company can also manifest itself in the pursue of growth and security (Marris, 1964). Managers maximise an utility function which is increasing in growth and security. The larger the company, the more powerful the managers and also the lower the take-over risk. Growth itself depends on investment, dividends and mergers. The more the ownership is spread, the more the managers are left free to pursue their goal of growth through merger. Managers prone to empire building tend to pay high premia in order to make acquisitions, and that is bound to harm their shareholders (Alberts and Varaiya, 1989). It is a worthwhile

question then to ask what keeps the shareholders of the acquiring company from trying to stop the management. Two possible explanations emerge (Caves, 1989). First, the shareholders of the acquiring company might view the alternative to the merger not as "do nothing", but as some other way to invest the funds -to which the merger is then preferred. Second, the "do nothing" strategy could be very costly if there is some risk that a rival company may move in and realize the merger itself, thereby reaping all the gains. However, if there is more than one bidder the shareholders of the target company might end up retaining all the gains arising from the merger if they are able to force the competing bidders into an auction leading to a Bertrand (price) game³.

Finally, within the framework of an oligopolistic market, mergers could also result from what has been described as a behaviour of "oligopolistic reaction". Knickerbocker (1973) defines oligopolistic reaction as "a corporate behaviour by which rival firms in an industry composed of a few large firms counter one another's moves by making similar moves themselves" (Knickerbocker, 1973, p. 5). Thus, if two firms in an oligopolistic industry merge, others might react by merging in turn (Cantwell, 1992), independently of whether shareholders will gain or lose as a result. This behaviour of oligopolistic reaction could cause a chain of mergers to take place, and therefore can then help explaining the empirical evidence that seem to show that mergers happen in waves.

³ Empirical work by Jarrell (1985) confirms this explanation. With US data, Jarrell (1985) estimated that the shareholders of those targets that received multiple bids earn on average 17% more than the shareholders of those targets that did not. Thus it seems that the shareholders of target companies in multiple takeover bids are able to play competing bidders against each other, so driving up the price paid by the acquirer.

II.3. The Causes of Mergers: Cross-Border Mergers

Similarly to countries' foreign trade, also cross-border mergers can be explained in terms of comparative advantage. As we have discussed above, there is a market for corporate control, and mergers are the instruments by which the market operates. Not all countries are equally endowed when it comes to competence for governing companies, just as different countries have different production capabilities. As pointed out by Hannah (1993), production processes and markets are becoming increasingly complex; moreover, the skill mix of different countries workforces is varied. Thus it pays to substitute national trade with intra-firm trade within single multinational companies. In such a way, the corporate governance is exercised by the country with the comparative advantage in that field, while subsidiaries around the world are built or acquired according to the comparative production advantages of the countries they are in⁴. Cross-border mergers then can be viewed as an important instrument for an efficient allocation of resources. Sizeable synergies can be achieved through them.

Together with the exploitation of comparative advantages, cross-border mergers can be prompted by the desire to expand into a new market. The acquiring company will then not only acquire the usual tangible assets of the target, but also intangible ones -the most valuables- as the knowledge of the market and business practices. The creation of such “information synergies” is one of the most appealing features of cross-border mergers, as Davis, Shore and Thompson (1993) point out. Such synergies are best exploited, and thus more cost-saving, when the merging partners have the same objective, i.e. they target the same

⁴ For a discussion of locational advantages of countries competing for foreign direct investment, see Dunning (1977).

customers, but with complementary characteristics (for instance one of the partners is a famous brand in its country while the other is strong in distribution).

III. The Consequences of Mergers: Market Structure and Welfare

We turn now to the issue of the effects of mergers. The analysis of the effects of mergers on economic welfare is set in the structure-conduct-performance paradigm developed by Bain (1951, 1956). According to this well-known view, it is the structure of the market which determines its performance, via the conduct of the market participants. By performance it is intended the ability of market participants to charge a price which is over and above the competitive price, thereby earning a positive mark-up. The degree of concentration in a market has long been considered one of its major structural characteristics. Thus it can be argued that by facilitating collusion or by reducing a competitive market to an oligopoly, high concentration determines the performance of market participants as measured in terms of profits. The completion of a merger in an industry reduces the number of market participants and can therefore result in enhanced collusion or tighter oligopoly. On the other hand, mergers can induce synergies and cost efficiencies. Williamson (1968) pointed out that the net effect of a merger on economic welfare is given by the balance of the trade-off between the price increase due to a reduction in industry output, and the price reduction due to efficiency gains. Thus the main social costs that can arise from a merger are associated to its anti-competitive effects. Industrial economists have developed two groups of models to explain this effect: collusion models, and non-cooperative oligopoly models.

We turn our attention to collusion models first. A merger⁵, by reducing the number of competitors in the market, makes it more likely for them to collude. As first pointed out by Chamberlin (1956), when competitors are few, they have an incentive to act cooperatively and maximize their joint profits (tacit collusion) without communicating with each other. Stigler (1964) qualified the argument by showing that (a) any kind of agreement between firms can only be enforced if cheating can be detected; and (b) that that is more likely if there are few firms in the market. Game theoretical models have reached the same conclusions⁶.

The outcome of collusion can be much worse than that of monopoly. First of all, it involves waste as larger and more efficient firms may produce below capacity, while inefficient firms may remain in the market rather than being wiped out. This increases prices even further. Secondly, enforcing collusive agreements is very expensive as it involves a great deal of monitoring to make sure nobody cheats (Baumol, 1992). The threat of collusion emerging from a merger is thus one of the main preoccupations of anti-trust authorities throughout the world.

Collusion however is not sustainable in the long run unless there are barriers to entry in the market. Barriers to entry were first defined by Bain (1956) as all those factors that make it possible for incumbents to enjoy supra-normal profits whilst making entry to the market undesirable. The existence of high economies of scale is the typical Bainian barrier: the incumbents can set pre-entry output at such high levels that new entrants would be forced to sell at below cost. Baumol

⁵ Henceforth, when we mention a merger, we mean an horizontal one unless otherwise specified.

⁶ Note that in one-shot games the incentive to cheat overwhelms the incentive to agree, so that tacit collusion is not feasible. It is in repeated games with infinite horizon that the threat of punishment makes collusion possible, provided the discount rate is sufficiently high. Finally in the context of repeated games, Shapiro (1989) shows that collusion is only one of many possible equilibria and that it is possible even if the number of firms is large.

et al. (1982) showed that this kind of barrier does not operate unless the industry is characterised by high sunk costs. Cost advantages or switching costs also represent barriers to entry (Schmalensee, 1991). Stigler (1968) redefined entry barriers as costs the entrants have to bear while the incumbents did not have to. If this definition is adopted, economies of scale cannot be considered as barriers.

Collusion models thus support the idea that mergers, by increasing industry concentration, may lead to collusive behaviour, and identify factors explaining why this may be so. However, these models do not offer clear predictions about what actually is going to happen after a merger has taken place. These are questions which have to be addressed empirically. Also, it is not clear how big entry costs need to be or for how long must investment be committed to deter entry (Hay and Werden, 1993). Non-collusion, or oligopoly models give clearer predictions.

Oligopoly models are static models that concentrate on so-called partial mergers, or mergers for oligopoly, and stress the role of costs, demand conditions, and the nature of competition. Most of the non-collusive models make use of either the Bertrand or the Cournot competition model of oligopoly, under the assumption that market demand is linear and symmetric.

In the Cournot model with homogeneous products, each firm chooses the quantity of output that maximizes its own profits, taking its opponents' output as given. Salant et al. (1983) develop a Cournot model in an industry with an homogeneous product, linear market demand, and n firms having identical and constant marginal costs. The authors consider what happens to profits when a subset ($m+1$) of these n firms merge. As marginal costs are constant, any output reduction by the merged firm will be totally offset by an increase in its rivals'

output. This would make the merger privately unprofitable, unless the ratio m/n is large, i.e. unless the merger tends towards monopoly. In other words, the profits earned by the merged unit will be less than the sum of the profits the merging partners were earning before the merger occurred.

Levin (1990) extends the Salant et al. (1983) analysis by relaxing the assumption that the merged firm remains a Cournot player after the merger. Also, Levin introduces a welfare analysis. Levin's results show that if firms with collective market shares of less than 50 percent merge, then any contraction of their output will cut their profits. As to the welfare effect, Levin (1990) shows that any profitable merger among as many as less than half of the firms in the market will entail an increase in welfare. The private profitability of the merger in such a case could arise from internalised savings due to cost advantages.

The private unprofitability of a merger in the Salant et al. model derives from the assumption of constant marginal costs. Perry and Porter (1985) relax this assumption and develop a model with increasing marginal costs and constant returns to scale. Due to the constant-returns technology assumption, any merger necessarily results in decreased output. Then any two firms will find it profitable to merge and form an oligopolistic firm, provided the increase in market price is high enough to offset the decrease in post-merger output. As to social welfare, Perry and Porter (1985) show that it is more likely to increase if the market shares of the merging partners are small and the industry is highly concentrated. From the assumptions underlying the Perry and Porter (1985) model, the output response to a decrease in the rivals' output is larger for larger firms. Then if there are large firms in the market, i.e. if the market is concentrated, any reduction in the output by the merged firm will be met by large responses from the rest of the industry.

Farrell and Shapiro (1990) provide a very elegant analysis of the effects of a merger in a Cournot setting with homogeneous goods and with very general cost and demand functions. Their results encompass, as special cases, those by Salant et al. (1983), Perry and Porter (1985) and Levin (1990). Based on very general and quite standard assumptions⁷, Farrell and Shapiro (1990) prove that if any firm in the market reduces its output, then the other firms will increase their own, but by less than the amount necessary to offset the original reduction. With this result in hand, they proceed to analyse the price effects of horizontal mergers.

When a merger occurs, there are three possible scenarios. First, if all firms have constant and equal marginal costs, as in Salant et al. (1985), the only reason to merge is to increase market power. Second, if firms' marginal costs are different then a merger could help to better allocate output away from the firm with higher marginal cost, without developing a better technology. This is the case portrayed in Perry and Porter (1985). Farrell and Shapiro (1990) prove that the only way for the market price to fall after merger is if the marginal cost of the new firm is much lower than those of the merging partners⁸. This reduction will not be sustainable in the long run, as all the other firms in the market will adopt the cost efficient technology. Finally, mergers can create synergies by, say, combining two complementary technologies. This is the only case in which a merger can actually generate a price reduction, and Farrell and Shapiro (1990) provide the necessary and sufficient conditions for it to happen: the smaller the industry

⁷ These assumptions relate to the slope of reaction and marginal cost curves. Namely, reaction curves are assumed to be negatively sloped, while marginal cost curves are assumed steeper than the market demand. Note that this last condition is always met if marginal costs are not decreasing in output.

⁸ Note that the reduction in the marginal cost required is larger, the larger the merging partners.

by the merged firm. Generally, however, their conjectural variation term is less than one, and so the other firms' output increase will not be sufficient to offset the reduction by the merged firm. Willig (1991) obtains the interesting result that if the other firms in the industry are less concentrated, their conjectural variation term is closer to unity. In such a case, the merger will be privately unprofitable unless it can generate real costs savings (i.e. savings that reduce marginal costs), in which case it will definitely be welfare-enhancing.

All the oligopoly models presented above deal with mergers between firms operating in a single country. However, in many countries a great deal of competition arises from goods produced abroad, or by foreign owned firms. Barros and Cabral (1994) extend the Farrell and Shapiro (1990) model to the case of an open economy, providing welfare analysis and policy hindsight for the regulator concerned about the effects of mergers in the domestic economy. They also consider the case of a single market made up by many different countries, like the European Union. In this case, a merger can generate welfare effects which are overlooked by domestic regulators: the situation therefore calls for the intervention of a supra-national authority.

In the case of an open importing economy, Barros and Cabral (1994) find that a merger has a positive net welfare effect on domestic firms outside the merger and consumers if the sum of the market shares of the merged firm and foreign producers is less than the sum of the market shares of the other domestic firms in the industry, weighted by their respective conjectural variation terms. This result does not depend on whether the merging partners belong to the same country or to other countries, and it implies that the existence of foreign competition makes it more difficult for a merger to generate positive welfare effects. In the case of an open exporting economy, consumers are very few but the domestic firms tend

to be quite large. Then the welfare effects of mergers tend to be overwhelmingly positive.

The case of a single market made up of different countries is different as the welfare effect from a merger from the viewpoint of the market as a whole might be different from the welfare effect considered from the perspective of the country where the merger takes place. Of course, the condition for a merger to be welfare-enhancing from the point of view of the market as a whole is the same as in Farrell and Shapiro (1990). Barros and Cabral (1994) show that from the point of view of any one country in the Union, a merger has a positive net welfare effect on domestic firms and consumers if the difference between the country's shares in the Union total demand and supply, plus the market share of the merged firm is less than the sum of the market shares of the other domestic firms in the industry, weighted by their respective conjectural variation terms. Thus, if the country is a net exporter the other firms' weighted market share need to be larger in order for the merger to have a positive effect on welfare. The welfare effects from the perspective of any country and of the Union will only coincide if the country's shares in total demand and supply are identical. This of course has serious repercussions for policy, as that would be the only case when there is no need for a supra-national authority to intervene.

The Cournot model applies for market with homogeneous products. With differentiated products, the Bertrand model (where firms compete with price) has been used to model horizontal mergers. In the Bertrand model, prices are strategic complements, meaning that if one firm increases its price, so will the other firms in the market. Davidson and Deneckere (1985) show that in a price setting game with differentiated products and linear, symmetric demands merger between partners of substitute products create an incentive for both merged firm

and other market participants to raise prices. Before the merger, if one firm raises the price it loses revenue as consumers buy the substitute product. But after the merger, the lost revenue will be recouped as the substitute product is now produced by the merger partner. The price increase is positively related to the mark-up on the substitute product, and to the cross-product price elasticity of demand. It seems therefore that market shares are not very important in markets with differentiated products. Willig (1991) however shows that if consumers have a random utility function that satisfies Luce's Choice Axiom, then the higher the market shares of, say, goods 1 and 2, the more likely it is that consumers have a preference for good 2 as a substitute for good 1 and viceversa.

The collusion and oligopoly models described above share two main pitfalls which have prompted and call for more research. First, the trade-off (Williamson, 1968) between welfare costs (due to price increases) and cost efficiencies, on which the above models are all based, is essentially static in nature. There is a need for developing dynamic models which would take into account long-run issues such as changes in investment strategies; changes in market entry and exit; and changes in the nature of competition following the event of a merger. No model yet has been developed to look at the effect of mergers on changes in competition. Cheong and Judd (1992) have developed a model with differentiated products, linear demand, price- and quantity- setting and adjustment costs in quantities. In a static world, in a model like this to merge is unprofitable. In a dynamic setting however the merging firms can make profits along the path to the new stationary equilibrium, as rivals cannot expand production fully due to the adjustment costs.

Second, all the models reviewed above deal with the effects of horizontal mergers only, the line of reasoning being that only horizontal mergers can have

an impact on competitiveness, as conglomerate mergers by definition involve companies operating in different markets. This line of reasoning however cannot be deemed right if, as pointed out by Edwards (1955) even if operating in different markets, conglomerates tend to behave less competitively and have interest in avoiding dangerous price wars with each other: these conglomerates recognise that each of them is stronger in some markets than in others, and each will act as leader in those markets where it is strong, and as follower in those markets where it is weak so as to avoid the possibility of arising crippling price wars. On the one hand, it has often been argued that markets are more efficient when firms internalize functions that would otherwise needed to be bought on the market (Teece, 1980), i.e. when firms are vertically integrated in conglomerates. Also, Scott (1982) shows that conglomerates with multimarket contacts are more likely to behave oligopolistically; Scott (1982) and Bernheim and Whinston (1990) show how multimarket contacts can encourage collusion. The issue is then again that of a trade off between costs and benefits (Scott, 1989): by increasing multimarket contact, conglomerate mergers¹¹ create information and costs efficiencies but have also costs as they can increase the degree of market power in the markets involved, even when concentration in those markets is low. The net effect on welfare of conglomerate mergers then will have to be assessed empirically.

IV. The Empirical Evidence

As we have discussed in the Introduction, the time series behaviour of merger activity in the US and the UK is rather similar: mergers seem to be occurring in cycles. There have been a few studies attempting to shed light on the statistical

¹¹ Scott (1989), using a sample of 95 large US conglomerate mergers in 1977-78 concludes that there is evidence that many of these diversifying mergers took place in order to increase multimarket contact.

behaviour of mergers time series, and on the possible links between this series and both stock prices and industrial production. Shugart and Tollison (1984), using ARIMA models on US data concluded that there is no evidence to support the hypothesis that mergers come in waves. Golbe and White (1987) using runs tests models on US data arrive to the opposite conclusion. Also, Clark et al. (1988), using linear trend, ARIMA, and runs tests models on US data confirm their conclusion. Town (1992) applies a sophisticated non-linear Markov switching regime model to US and UK data, and finds that the wave hypothesis represents an endogenous phenomenon. Finally, Golbe and White (1993) use a direct and formal test fitting a sine curve to US merger data and conclude that the data are consistent with the wave hypothesis. It seems therefore that the empirical evidence supports the notion that mergers do happen in waves; this statistical behaviour can be considered in line with the theoretical view outlined in the model of oligopolistic reaction discussed above.

Another interesting empirical question is whether aggregate merger activity is somewhat linked to stock market cycles. Considering the issue of the correlation between aggregate merger activity and the stock market index, Nelson (1959) finds a positive correlation coefficient for the US for the period 1895 to 1954, a coefficient that is larger in times of high merger activity than in slack times. Again for the US, Beckenstein (1979) finds that the number of large mergers in the period 1949-75 is positively associated to stock prices, albeit the coefficient is very small; Melicher, Ledolter and D'Antonio (1983) obtain mixed results; while Guerard (1985) finds a significant positive correlation for the period 1895-1979. Gerosky (1984), with two UK and two US samples¹², finds that there is

¹² The samples used by Gerosky (1984) in his study are as follows. The UK samples are one sample of monthly data from January 1957 to December 1969; and one sample of quarterly data from 1969, first quarter, to 1979, fourth quarter. The two US samples are both quarterly data running from 1895, first quarter, to 1920, fourth quarter; and from 1919, first quarter, to 1954, fourth quarter, respectively.

causality in both directions between mergers and stock prices; however, the two series are very unstable and very little can be predicted about one of them observing the other. Guerard (1989) uses Granger causality and finds that stock prices and mergers are not associated. Turning to the correlation between aggregate merger activity and industrial production, no study has found evidence of any significant causality or correlation. It seems therefore that what prompts mergers has to be something more than the simple effect of the economic cycle.

Most of the theoretical models about the causes and consequences of mergers discussed above contain some testable predictions. Considering the issue of the causes of mergers, one expects that a merger motivated by the desire to increase market power, or to exploit economies of scale, or to gain cost efficiencies, or to displace inefficient management should be profitable and beneficial to shareholders. On the contrary, mergers initiated by empire-building management, or by managers who want to avoid paying free cash flow to shareholders, need not be profitable.

More specifically, the hypothesis that mergers occur to take advantage of economies of scale or scope requires that profits rise post-merger. On the other hand, if a merger is motivated by the desire to increase market power, then the post-merger market share of the target should not change in the case of conglomerate mergers and should not fall dramatically in the case of horizontal mergers (Mueller, 1985). Also, the hypothesis that mergers occur to discipline bad management requires that the acquired firms have below-industry-average profitability pre-merger (Ravenscraft and Scherer, 1989). Moreover, one should expect that disciplinary take-overs would result in the replacement of the target's management, whose defensive action should result in negative stock price effects, independently of whether such action is carried out with or without the

shareholders' consent (Jensen, 1988). In a study of 40 mergers which took place in the UK in 1986, Franks and Mayer (1993) did indeed find that if the take-over had been opposed by the board 71 per cent of the directors would resign after the take-over, while only 39 per cent of the directors resigned if the bid had not been opposed. The hypothesis that growth by acquisition is pursued to avoid paying out free cash flow to shareholders requires that the acquiring company perform better than average before the merger in terms of profitability. Finally, shifting our attention from the causes to the consequences of mergers, collusion and oligopoly models stress their anti-competitive effects; one way of measuring such effects is testing whether mergers have affected market concentration and the degree of market power. Much attention has been given in the literature to this issue, although as we have discussed in section III it is not a foregone conclusion that an increase in concentration necessarily leads to a reduction in welfare. It is however very difficult to assess welfare effects empirically, mainly due to the lack of information on all the whose welfare is affected by a merger, that is shareholders, managers, workers, and consumers.

In this section we review the empirical literature on the characteristics of the merging partners; on the performance of mergers, and on the relationship between mergers and concentration, and mergers and market power.

IV.1. Mergers and Profitability

The effect of a merger on the partners' profitability is measured by comparing book value measures of profitability before and after the merger. Profitability is usually measured as the ratio of profits to sales or by the rate of return on total net assets. Meeks and Meeks (1981) show that these measures can be biased. The direction of the bias in the profit-sales ratio depends on how internalised

sales are accounted for. The rate of return on total net assets suffers from bias depending on when the assets of the acquired firm are incorporated in the books. Profit-sales ratios and growth-rate measures need be adjusted for industry effects by normalizing with respect to the average of non-acquiring firms in the same industry.

Profit measures can be used to test the hypothesis that mergers occur to discipline bad management: if the acquired firms has below-industry-average profitability pre-merger, then its management is behaving in a non-value maximising manner and could be punished by being the victim of a take-over (Ravenscraft and Scherer, 1989). The evidence for the UK shows that until 1966 acquired firms were on average smaller, grew less, and were less profitable than the acquirers and other firms in general (Hughes, 1993). However, by 1967 the only sure discriminant between targets and their acquirers is that targets are smaller (Singh, 1975; Levine and Aaronovitch, 1981; Cosh, Hughes, Lee and Singh, 1989). Using US data, Ravenscraft and Scherer (1987), using a sample of 95 mergers for the period 1975-77 find that on average targets are less profitable than their industry average. However, with a larger sample drawn for the same period, Ravenscraft and Scherer (1989) find no support for their previous findings. This result is confirmed in Matsusaka (1993). Using a sample of conglomerate mergers' targets between 1968 and 1974, Matsusaka finds that targets are on average much more profitable than their industry average. In general, then, the empirical results do not seem to uphold the hypothesis that take-overs are caused by the well functioning of the market for corporate control, i.e. that they are essentially disciplinary devices to punish inefficient management.

Profit measures can also be used to test the hypothesis that mergers occur because managers pursue growth by acquisition to divert free cash flows from the shareholders (Jensen, 1986). If that were true, we should expect acquirers to be on average more profitable pre-merger than either their victims or the industry average. Considering the profitability of the acquiring firms before merger, the evidence for the UK shows that, in general, acquiring companies are either as profitable or more profitable than the rest of the industry (Kuehn, 1975; Meeks, 1977; Cosh, Hughes and Singh, 1980; Levine and Aaronovitch, 1981). Cosh, Hughes, Lee and Singh (1989) also find that it is conglomerates and not horizontal acquirers who have above average performance. Finally, Hay and Liu (1996) using a sample of 110 UK firms over the period 1970-89 find that the probability of being an acquiring firm is significantly and positively related to profitability.

Finally, profitability comparisons can be used to assess whether mergers occur to take advantage of economies of scale or scope. In such a case, one should expect profits to rise post-merger relative to their pre-merger values or to the industry average for both the target and the acquiring firm (Ravenscraft and Scherer, 1989). Of the six studies carried out using UK data, five (Singh, 1971; Utton, 1974; Meeks, 1977; Cosh, Hughes and Singh, 1980; and Kumar, 1985) use pre-1970 data. Across the board, the results indicate that there has been a slight decrease in profits post-merger. The sixth study (Cosh, Hughes, Lee and Singh, 1989) uses two samples: one for 1981-83 and one for 1986; they find that on average profitability decreased post merger. However, when financial institutions had a large stake in the acquirer (and therefore the management was more easily checked on), the post-merger performance was better than in the cases where ownership was much spread. Turning to US data, and viewing only the most recent studies, using Line of Business data for the years 1975-77,

Ravenscraft and Scherer (1987, 1989) find that there is no evidence of an increase in profitability after a take-over. Opposite results are obtained by Healy, Palepu and Ruback (1992), who look at post-merger profitability of the largest fifty mergers for the period 1979-84, and find that, relative to their industries, these firms' profitability is higher. There is therefore conflicting evidence on the effect of mergers on profitability, but the results seem to point at the fact that the search for cost savings or scale economies is not the main motivation to merger.

IV.2. Stock Market Performance

The performance of mergers can also be analysed by using stock market data to assess the abnormal returns gained by the shareholders of the acquiring and acquired firms respectively (Jensen and Ruback, 1983). The stock market is assumed to be efficient, so that asset prices reflect the underlying true value of a company: in order for any asset to be under- or over-valued there must be some form of market failure which gives way to the possibility of making gains from trading (Prasch, 1992). As free market events, mergers then occur because there are gains to be made from them, the most interesting question being who reaps the gain: the managers; the shareholders of the acquiring company; or the target's shareholders. The performance of mergers is assessed by comparing the actual stock price returns after merger with an estimated counterfactual measure of what the return would have been had the merger not taken place, and summing over to obtain the cumulative abnormal returns (CAR) from the merger¹³.

¹³ The counterfactual return from an asset can be calculated based either on the mean-adjusted return model; or on the market return model; or on the capital asset pricing model (CAPM); or on the market index model. According to the mean adjusted return model, the counterfactual return from an asset is simply the average return over a specified time period. The market model return is the predicted value from a regression of actual returns on an intercept and the returns on a market index. The CAPM requires estimating the predicted values from a regression of actual returns on the returns on a risk-free asset and on the difference between the return

Scores of studies have examined stock performance of the acquiring and acquired company prior and post mergers. The evidence for both the UK and US shows that only the target's shareholders gain from the merger; the shareholders of the acquiring company are either made worse off or at best stay the same (Jensen and Ruback, 1983; Jarrell, Brickley and Netter, 1988; Hughes, 1993). In the longer term, the mergers usually prove to be anywhere between just unprofitable and just profitable (Jensen and Ruback, 1983).

Looking at acquiring companies first, for the UK, Barnes (1978; 1984) analyses 39 mergers for the period 1974-76 and finds that there are slightly positive abnormal returns in the period immediately preceding the merger, but afterwards the returns are negative. A similar pattern is found by Franks, Broyles and Hecht (1977) for a sample of 70 mergers in the brewing industry between 1955 and 1972. After a brief period of positive returns, significantly negative abnormal returns post-merger are found by virtually all the UK studies (Firth, 1979 and 1980; Cosh, Hughes and Singh, 1980; Dodds and Quek, 1985; Frank and Harris, 1986; Meadowcroft and Thompson, 1986; Franks, Harris and Mayer, 1988; Cosh, Hughes, Lee and Singh, 1989). The results for the US are in line with those for Britain (see Jensen and Ruback (1988) for evidence for the '70s and Jarrell, Brickley and Netter (1988) for evidence related to the '80s): there are small gains to the acquirers' shareholders around the announcement date, but the post-merger returns are mostly zero, or negative. Matsusaka (1992), analysing samples of US mergers for the years 1968, 1971 and 1974 find that diversifying mergers carried a premium for the shareholders of the acquiring company, the more so if the management of the target was retained. The author takes his

on a market index and on the risk free asset. Finally, the counterfactual return for the market index model is simply the market index itself.

results as evidence for the fact that the market approves of mergers motivated by managerial synergy and punishes disciplinary takeovers.

Turning to the shareholders of the acquired companies, the evidence shows overwhelmingly that there are large gains to be made when the bid is announced: the gains are generally of the order of 22-30 per cent for the UK (Franks, Broyles and Hecht, 1977; Firth, 1979 and 1980; Franks and Harris, 1986; Meadowcroft and Thompson, 1986; Frank, Harris and Mayer, 1988). For the US, the 13 studies reviewed by Jensen and Ruback (1983) show premia between 16 and 30 per cent for targets' shareholders during the '70s. Jarrell and Poulsen (1987a) review 633 mergers that took place between 1962 and 1985 and found average premia of 19 per cent in the Sixties, 35 per cent in the Seventies and 30 per cent between 1980 and 1985.

It is also interesting to see whether contested take-overs damage the shareholders of the target. As pointed out by Hirschey (1986), friendly and unfriendly mergers should be studied separately as they are prompted by different motives. If take-overs happen to discipline bad management, and if the target's management tries to fight back, one should expect the share prices to fall and the target's shareholder to lose out. Evidence for the US shows that such might be the case. Jarrell and Poulsen (1987a) survey 104 cases of supermajority amendments adopted since 1980 and find an above-3 per cent negative effect on the stock price around the date when the measure was adopted; while in case of pre-1980 amendments Jensen and Ruback (1983) did not find any conclusive evidence. In the case of dual class recapitalization, Jarrell and Poulsen (1987 b) examine a sample of 89 targets (1976-1987) and find an average abnormal share price decrease of .93 per cent around the date of recapitalization, while using a sample of 44 companies Partch (1987) finds a non-negative effect. Bhagat and Brickley

(1984) indeed find a 1 per cent reduction in abnormal stock prices in a sample of 84 companies when cumulative voting rights are reduced.

Looking at the above evidence, it is easy to see that the net effect of mergers on shareholders has been at best neutral if not negative (Hughes, 1993). It is obvious that acquiring companies pay premia in order to secure the merger (Alberts and Varaiya, 1989). Why that is the case is another issue. Roll (1986) suggests that the managers of the acquiring company are too optimistic about the value of what they are buying and therefore overpay. The acquiring firm's managers might also be ready to overpay because they believe that they can improve the performance of the acquiree, and therefore reap the gains (Mueller, 1989). Whatever the reason for the premia paid, Alberts and Varaiya (1989) develop a model to calculate the growth in the targets' assets value necessary for the acquirers to recoup the premia paid at acquisition. They apply the model to 1,000 US mergers proposed between 1976 and 1984, and find that the needed growth rate had to be way above the industry average in order for the paid premia to be recouped in full. Whether such premia are paid to pursue monopoly power, or cost synergies or growth by acquisition cannot be determined econometrically. The only thing one can say is that such premia are paid, and that the acquiring firms' shareholders lose out on average as a result, while the shareholders of the targets end up gaining.

IV.3. Mergers and Market Structure

As we have discussed in section III, within the structure-conduct-performance paradigm developed by Bain (1956), the degree of concentration in a certain market has long been considered one of that market's main structural characteristics. Then the effects of mergers on market structure can be measured

by assessing their effect on concentration. The effect of mergers on concentration can be examined by using either regression analysis; or counterfactual analysis; or a case-study approach. Using regression analysis, changes in industry concentration are related to merger activity. Counterfactual analysis is carried out by using company data to compute a counterfactual concentration measure based on the assumption that all mergers happened either at the beginning or at the end of the sample period. This counterfactual measure is then used to calculate the proportional contribution of mergers to the change in concentration over the sample period. Finally, case studies look at trades or sectors which are characterised by high concentration, and examine whether mergers occurred in such sectors can be held responsible for keeping the level of concentration high.

We turn to regression analysis first. Sectoral data are available for the UK, but the series on mergers is disaggregated at a less detailed level (2-digit SIC) than that on concentration (3- or 4-digit SIC). The use of such data can then lead to aggregation bias: Hart and Clarke (1980) argue that one can expect the coefficient on the number of mergers to be downwardly biased. Also, merger data do not distinguish between inter- and intra-industry mergers: this can seriously bias results if the proportion of diversifying mergers is high in the industry. Goudie and Meeks (1982) calculate that out of 1,481 mergers between listed companies that took place during the period 1949-1973 around a third were diversified, so that the potential for biased estimated coefficients is rather high. Hughes (1976) using data for the period 1963-1968, finds that the higher the percentage of assets acquired in a manufacturing industry (measured as 2-digit), the higher the change in the industry's three-firm concentration ratio. Gratton and Kemp (1977) use 2-digit data on the number of mergers to explain changes in the 4-digit concentration measure for 284 manufacturing industries for the

period 1963 to 1968. They construct dummy variables for high, low and medium number of mergers and find that only the dummy for high merger activity is significant, and only for producer- not for consumer-goods industry. Hart and Clarke (1980) use 2-digit data on merger values to explain changes in the 3-digit concentration measure for 76 manufacturing industries for the period 1958 to 1968. Albeit statistically significant and correctly signed, the mergers variable added very little to the explanatory power of the regression.

Turning to counterfactual analysis, this methodology has been applied to UK data by Utton (1971) and Hanna and Kay (1977) to measure the effect of mergers on concentration at the industry level; and by Aaronovitch and Sawyer (1975), Hanna and Kay (1977), Hughes and Kumar (1985) for the economy as a whole. The industry-level studies cover the periods 1954-1965 (Utton, 1971) and 1957-1969 (Hanna and Kay, 1977), and their results indicate a large contribution of mergers to concentration growth. However, Hanna and Kay (1977) themselves dismissed the results as they argued -after a simulation exercise- that concentration in their sample period would have increased even without mergers. At the aggregate level, the studies by Aaronovitch and Sawyer (1975) and Hanna and Kay (1977) cover the 60s, while the paper by Hughes and Kumar (1985) deals with the 70s. The studies covering the 60s find that mergers had a positive impact on concentration, whilst Hughes and Kumar (1985) find that the reverse is true. However, these results are sensitive to the choice of sample; the choice of concentration measure; and the choice of counterfactual growth rate, and there has been a heated debate on these issues (Hart, 1981; Preis, 1981 and Hanna and Kay, 1981).

We turn now to the case studies. Because this methodology entails the use of primary data, it allows researchers to distinguish between the effects of

horizontal and conglomerate mergers and to assess whether it is true that only horizontal mergers affect the degree of market power. For the US, Goldberg (1973), using a sample of 44 acquired companies in the '50s and '60s, found no effect of mergers on the market shares of these companies. Goldberg (1978) analyses 211 markets where there had been mergers between 1954 and 1963 and again found no evidence of any effect of mergers on market shares. Mueller (1983) uses a sample of 209 acquired and 123 acquiring firms between 1950 and 1972, and finds that neither horizontal nor conglomerate mergers affect market shares. Same results are found by Feinberg (1984), who looks at the impact of 11 large conglomerate mergers on concentration in the '60s, and by Feinberg (1987)¹⁴, who examines 14 mergers for the period 1974-77. Mueller (1985) obtains the even more dramatic finding that comparing acquired and unacquired firms in 1950 and 1972, unacquired firms retained a much larger proportion of their original market share than did acquired firms. The case studies for the UK reach a different conclusion: mergers have had a positive impact on concentration in the postwar period. Hart and Clarke (1980) selected 27 product groups randomly for the years 1958-68 and concluded that half of the increase in concentration was likely due to mergers. Utton (1986) looked at the market shares of the dominant firms in 19 industries and finds that dominance declined in 12 industries and stayed constant in 7; in 4 of these 7 industries mergers were paramount to the preservation of market power.

As we have discussed above, increases in concentration do not necessarily result in higher prices. If the market is easy to enter, then the threat of entry by potential competitors reduces the ability to exercise market power. A clearer indication of the creation of market power is the ability to rise prices, albeit

¹⁴ For price-cost margins, Feinberg (1984; 1987) obtains the same results as for concentration: neither horizontal nor vertical mergers have a significant impact on price-cost margins.

empirical tests are impaired by lack of data. Borenstein (1990), analysed two US airline mergers, the TWA-Ozark and the Northwest-Republic and found that airfares increased after the latter only. Kim and Singal (1993) carried out a study of 14 US airline mergers during the period 1985-1988 using price data, i.e. airfares¹⁵. In the airline industry, each route represents a different market, and therefore mergers can have both a horizontal and a conglomerate aspect, with intense multimarket contacts. Kim and Singal (1993) obtain the interesting finding that horizontal mergers (where routes or hubs are shared by the merging partners) do not lead to higher prices, while diversified mergers do. In other words, where companies share either a route or a hub, the cost savings associated to merger tend to counterbalance the price effect of increased market power. However, where companies do not share neither routes nor hubs, there is no room for cost savings, but market power increases as multimarket contacts increase, leading to higher airfares. The creation of multimarket contacts then facilitates the creation and exploitation of market power independently of market concentration. There is indeed evidence that the degree of concentration does not influence the choice of target in diversifying mergers. Analysing conglomerate mergers in the US in 1974-77 Carleton, Harris and Stewart (1980) find that firms in industries characterised by high concentration or economies of scale have the same likelihood of being acquired than firms that are not in such industries. Moreover, Stewart, Harris and Carleton (1984) examine 83 US conglomerate mergers in 1970-1977 and find that firms in highly concentrated markets do not have a tendency to acquire firms in similarly highly concentrated markets¹⁶.

¹⁵ Insofar as a merger between two airlines creates synergies and cost savings, it induces a price reduction. If the merger generates market power however, it leads to an increase in price. The direction of the price change, if any, then gives an indication of which effect is dominant.

¹⁶ Note however that companies in markets characterised by high entry barriers tend to buy companies operating in high-entry-barriers markets.

V. Conclusions

In this paper we have surveyed the theoretical and empirical literature on the causes and consequences of mergers and take-overs. The body of empirical evidence on the performance of mergers shows that mergers are not always privately profitable. It is often the case that the shareholders of the acquiring company lose out, as the value of their stock holdings decreases post-merger. Moreover, the acquired company is most likely to experience a decline in profitability, market share or productivity. Only the shareholders of the acquired company gain substantial returns from mergers, and this only if the bid is not contested.

The bulk of evidence is not consistent with the hypothesis that the market for corporate control works efficiently and that take-overs occur to discipline bad management. There is instead evidence pointing at a non-maximising behaviour on the behalf of the managers of the acquiring company, in line with the free cash flow theory of Jensen (1986) and the hypothesis that empire building is actively sought by management through growth by acquisitions. Of course, other than the outcome of an imperfect principal-agent relationship resulting in non-value maximising behaviour on behalf of the management, one reason for the bad performance of mergers might simply be that the managers of the acquiring firm are overoptimistic about their ability to turn around the acquired firm performance (Mueller, 1989). Also, in a case of self-fulfilling expectations, it might well be that managers do not believe that the merger will be successful (Mueller, 1989). Whatever the causes for the poor performance of mergers, we think that there is a need for public policy action, aimed at making it easier for shareholders to obtain information about managerial actions, and at making it

more difficult for managers to dispose of profits in ways other than distributing them back to shareholders.

The fact that mergers are found to be occurring in waves, and that the evidence does not unequivocally point at a significant correlation between merger activity and the economic and financial cycle points to some other reason why mergers happen in clusters. In non-competitive markets, the reason might be the existence of oligopolistic reaction. Whatever the causes of mergers might be, their consequences on market structure are of paramount importance to the policy maker, the main preoccupation here being the anti-competitive effects of mergers. By reducing the number of actors in a market, mergers can encourage collusion, and this would have bad consequences on welfare. It has to be stressed however, that collusive behaviour can only be sustained in markets where there are barriers to entry and high sunk costs. Theoretical models of non-cooperative oligopolistic behaviour have been developed to analyse mergers, and they show that mergers do not always reduce welfare. If a merger can generate enough savings so as to reduce marginal costs, then it is welfare enhancing (Farrell and Shapiro, 1990).

Considering the effect of mergers on market structure, the empirical evidence shows that mergers have no effect on concentration levels and market shares in the US, while they seem to have had a positive effect in the UK. What these results spell in terms of economic welfare is hard to say. As we have seen, the net welfare effect of a merger is given by the difference between the social costs due to decreased competition in the market and the benefit accruing from cost efficiencies. The consequent outcome in terms of price is an empirical matter to assess, but it is very difficult to do so as data on prices are not easy to find. The only study available (Kim and Singal, 1993) deal with the outcome of 14 mergers

in the US airline industry and it shows that for horizontal mergers cost efficiencies balance out the price pressures due to lower competition, having a neutral effect on welfare. Diversifying mergers have however a negative price effect as they do not entail high cost efficiencies but the increasing multimarket contacts result in oligopolistic behaviour.

Antitrust authorities have been mainly preoccupied with horizontal mergers, in the belief that it is only this kind of merger which carries a threat to competitive markets. However, the evidence suggests that in assessing a merger, the antitrust authorities should not only worry about its anti-competitive effects, but weigh out both the negative (i.e. market power enhancing) and positive (i.e. cost efficiencies) likely consequences of proposed mergers. And, as it has been shown for the US airline industry, the anti-competitive effect is more serious for diversifying mergers than for horizontal ones.

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